2 SELECTION OF THE PREFERRED ALTERNATIVE

All references to "Study Area" and "Project" below pertain to the Richmond to Raleigh Project, unless otherwise noted.

This chapter describes the Study Area for the Project Tier II FEIS, and provides details on the characteristics of the reasonable alternatives that meet the purpose and need for the Project. This chapter also discusses the criteria by which the alternatives were evaluated, the evaluation of alternatives, and presents the FRA's and the Project Sponsors' preferred railroad alternatives and associated roadway work.

Initially, each of the 26 sections of the Project included three alternative railroad alignments (described below and shown in Figure 2-1). As presented in the Project Tier II DEIS, the alternatives were named VA1, VA2, and VA3 in Virginia, and NC1, NC2, and NC3 in North Carolina. In order to minimize impacts, throughout much of the Study Area the alternatives are within existing railroad ROW; in many locations the alternatives are on common (concurrent) alignment. Except where otherwise specified, alternative VA3 is concurrent with alternative VA1, and alternative NC3 is concurrent with alternative NC1. The endpoints of each of the 26 sections are in locations where the alternative alignments are in a common location. This approach allowed for the broadest range of options during evaluation and selection of the preferred alternatives. Joined together, the preferred alternatives form a "best-fit" preferred alternative for the entire Study Area.

The preferred alternatives form a "best-fit" alternative for the entire Study Area.

In response to comments on the Project Tier II DEIS, an additional fourth or fifth railroad alternative was developed for evaluation in three sections of the Project: Alternative VA4 was developed for Sections D and G in Brunswick County, VA; and Alternative NC5 was developed for Section V in Raleigh, NC. The development of these new alternatives for the Project is described in greater detail later in this chapter.

2.1 STUDY AREA

The Project Study Area provides boundaries for the proposed SEHSR Corridor railroad and associated roadway alignments and includes areas where construction of the Project could have direct impacts on the environment (Figure 2-1). Initially, the Study Area width was between 1,000 and 6,000 feet, centered primarily on the centerline of the existing railroad ROW. This broad width allowed for the development of alternative alignments. Once potential alignments were proposed, the wider widths were narrowed to approximately 1,000 feet. In some areas the Study Area is wider to accommodate associated roadway work. In addition, the Study Area includes small areas of expansion that were added since the completion of the Project Tier II DEIS to accommodate design changes developed in response to comments on the DEIS.

Wider widths were narrowed to approximately 1,000 feet. In some areas the Study Area is wider to accommodate associated road work. The Study Area includes small areas of expansion added since the DEIS to accommodate design changes.

The Study Area begins at Main Street Station in Richmond, VA, and extends to the south, following the existing CSX S-Line railroad across the James River and through Chesterfield County towards Centralia, VA (Figure 2-1). From Centralia, the Study Area follows the existing CSX A-Line south to Dunlop, VA, south towards Ettrick Station on the west side of Petersburg, and across the Appomattox River. After crossing the river, it continues to follow the CSX A-Line south through Petersburg.

The Study Area initially included an eastern branch through the Petersburg, VA, area that followed inactive railroad ROW (the old CSX AAP-Line) from Dunlop through Colonial Heights, VA into Petersburg, VA to serve the old Union Station. However, as described in the Project Tier II DEIS, this route was excluded from further consideration based on impacts to historic resources, relocations, constructability, and other issues. More information on this evaluation is included in Section 2.3.

South of Petersburg, VA, the Study Area continues to follow the CSX A-line south through Collier Yard, a CSX railroad yard. At the south end of Collier Yard, the Study Area turns west, following the alignment of the inactive Burgess Connector railroad. The tracks have been removed along the Burgess Connector, and small portions of the ROW have been sold. At Burgess, the Study Area curves south, joining again with the alignment of the CSX S-Line. Although the tracks along this section of the CSX S-Line were removed in 1987, CSX retains exclusive ownership, with exceptions, of the CSX S-Line (i.e., fee simple) and leases a portion of the railroad ROW for operation of an underground fiber optic cable. The exceptions are located along the Burgess Connector south of Collier Yard, where portions of the ROW have been sold to individual property owners for driveway access, and in southside Virginia, where sections of the ROW have been sold to adjacent landowners, such as a 1.3 mile long section at the Nottoway River in Dinwiddie County owned by Reedy Creek Farm Associates.

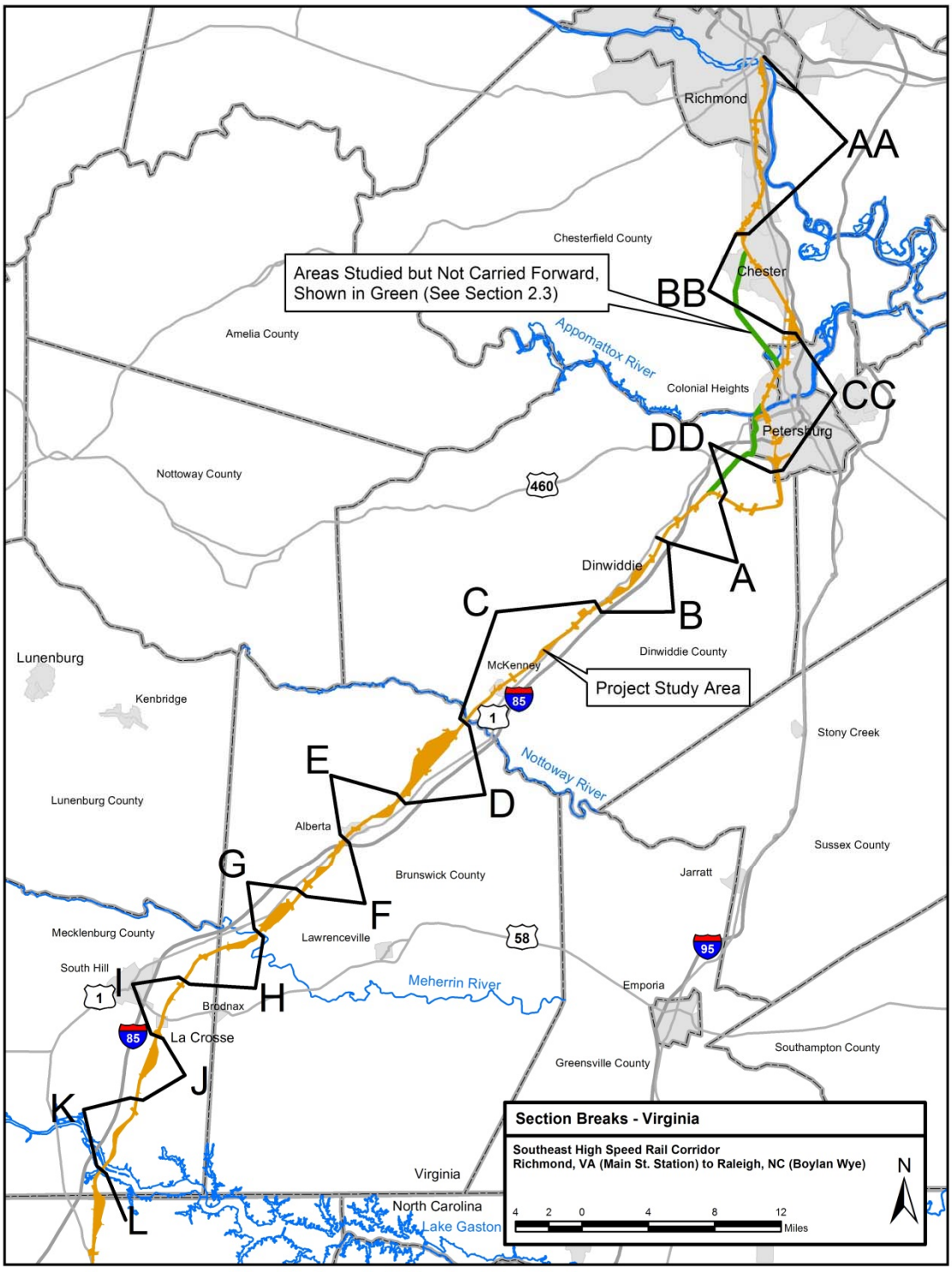
As the Study Area moves through southern Virginia, it passes through the Town of McKenney, VA, where a portion of the ROW has been sold, before crossing the Nottoway River into Brunswick County. The Study Area progresses south through the Town of Alberta, VA, and crosses the Meherrin River before crossing into Mecklenburg County. In Mecklenburg County the Study Area continues to follow the CSX S-line through the Town of La Crosse, VA, and then crosses Lake Gaston, before passing into North Carolina.

In North Carolina, the Study Area continues along the inactive S-line through Warren County to the Town of Norlina, NC, where the CSX S-Line returns to an active freight railroad (CSX). From Norlina, the Study Area follows the active freight line into Vance County and through the towns of Middleburg, Henderson, and Kittrell, NC, before crossing the Tar River into Franklin County; the Study Area then passes through Franklinton and Youngsville before entering into Wake County.

In Wake County, the Study Area passes through the Town of Wake Forest, NC, before crossing the Neuse River, and then into the City of Raleigh. In Raleigh, the southern ten miles of the Study Area includes ROW recently purchased by Triangle Transit (TT) for planned regional commuter light rail service, which will be operated on a separate railroad system.

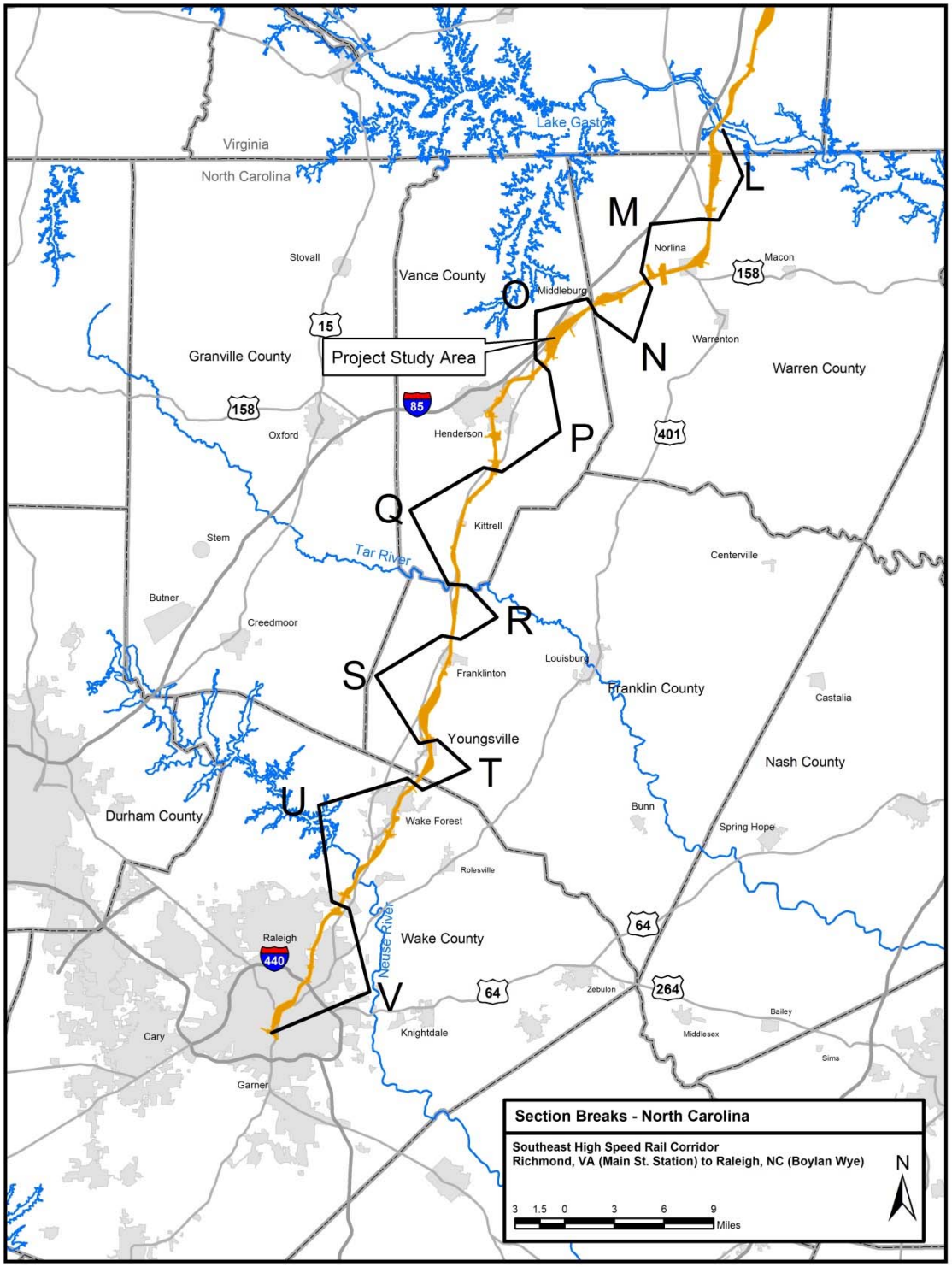
On the north side of Downtown Raleigh near Capital Boulevard, the Study Area widens to approximately 2,000 feet to encompass the existing Norfolk Southern (NS) NS-line through Glenwood Yard (the NS switching yard) on the west side, and the CSX S-Line through Capital Yard (the CSX switching yard) on the east side, and the area between the two. Near Jones Street in Downtown Raleigh, the NS line joins the CSX S-Line, and the Study Area narrows to follow the CSX S-Line south for two blocks to the Boylan Wye, near Boylan Avenue. The Boylan Wye is the southern terminus of the Study Area.

Figure 2-1



continued…

Figure 2-1 continued



2.2 PREFERRED ALTERNATIVE BY SECTION

2.2.1 PROCESS FOR EVALUATION OF ALTERNATIVES

Following the May 2010 publication of the Project Tier II DEIS, more than 1,850 individuals and 50 agencies and organizations submitted comments. Many of the comments were several pages in length, and most covered multiple topics. All comments were read and coded by topic(s) and Project section (where identified) to enable sorting. A series of eight internal decision meetings were held by the Project team (comprised of representatives of NCDOT and Virginia DRPT) to discuss comments received by section. Refer to Chapter 8 for a listing of comments received and responses to those comments.

At the decision meetings, the Project team evaluated and compared impacts to the natural and human environment, and assessed information on speed, cost and constructability for each alternative. All comments on the Project Tier II DEIS pertaining to a section were reviewed and discussed by the Project team, and preferences for alternatives were tallied. The Project team based their recommendations for the preferred railroad alternative by section on all relevant information. In some sections, additional coordination, analysis, or design work was undertaken prior to the Project team making a final recommendation.

The Project team evaluated impacts to the natural and human environment, and assessed information on speed, cost, and constructability for each alternative. All comments were reviewed and discussed by the Project team, and preferences for alternatives were tallied. The Project team based its recommendations for the preferred railroad alternative on all relevant information.

2.2.2 INTRODUCTION TO PREFERRED ALTERNATIVES

Each alternative includes both the railroad alignment and associated roadway work. The overarching philosophy of design for the Project is to evaluate railroad-roadway grade crossings with the goal of consolidating and grade separating all crossings (using bridges or underpasses) for safety and operability purposes as described in Chapter 1.

Maps showing the Preferred Alternative for each of the Project sections (AA-V) are included at the end of this Chapter. In addition, the following discussion contains information about each of the Project sections, including:

- Overview and description of characteristics
- Summary of alternatives and table of impacts
- Preferred alternative and basis for selection
- Public roadway-railroad crossings:
  - Public roads with existing grade separated crossings (bridges or underpasses will be retained, expanded or replaced)
  - Public roads with new grade separated crossings (bridges or underpasses), and description of temporary proposed detour routes
  - Public at-grade crossings to be closed, with traffic re-routed
- River and major creek bridges
- Changes to the preferred alternative subsequent to the Project Tier II DEIS.

Table 2-1 lists the Preferred Alternative by section. More detailed information can be found in the following Appendices: Appendix R contains maps that show a greater level of detail for the Preferred Alternative, including all associated roadwork; Appendix E contains schematic track

charts of the alternative railroad designs, and Appendix F contains detailed information on all associated roadway work.

Table 2-2 provides a description of the track configuration upon completion of the Project using approximate geographical reference points (note that the configuration was the same for all alternatives).

Table 2-1
Preferred Alternative
by Section

Section	Appendix R Maps	From	To	Preferred Alternative
AA	001-010	Main Street Station Richmond, VA	Centralia, VA	**VA1**
BB	010-016	Centralia, VA	North of Dunlop, VA	**VA1**
CC	017-028	North of Dunlop, VA	Collier Yard Petersburg, VA	**VA1**
DD	028-033	Collier Yard Petersburg, VA	North of Burgess, VA	**VA3**
A	034-038	North of Burgess, VA	North of Dinwiddie, VA	**VA2**
B	038-043	North of Dinwiddie, VA	South of Dinwiddie, VA	**VA1**
C	044-053	South of Dinwiddie, VA	South of Nottaway River	**VA1**
D	053-062	South of Nottaway River	North of Alberta, VA	**VA4**
E	063-066	North of Alberta, VA	South of Alberta, VA	**VA1**
F	067-070	South of Alberta, VA	South of Tower Road Brunswick County, VA	**VA1**
G	071-074	South of Tower Road Brunswick County, VA	Meherrin River	**VA3**
H	075-080	Meherrin River	North of Wray Road Mecklenburg County, VA	**VA1**
I	080-083	North of Wray Road Mecklenburg County, VA	South of La Crosse, VA	**VA1**
J	084-087	South of La Crosse, VA	North of Bracey, VA	**VA2**

Table 2-1
Preferred Alternative
by Section

Section	Appendix R Maps	From	To	Preferred Alternative
K	087-091	North of Bracey, VA	Roanoke River	**VA1**
L	091-095	Roanoke River	North of Norlina, NC	**VA1/NC1**
M	096-102	North of Norlina, NC	Southwest of Norlina, NC	**NC1**
N	103-106	Southwest of Norlina, NC	North of Middleburg, NC	**NC1**
O	107-111	North of Middleburg, NC	North of Henderson, NC	**NC3**
P	111-118	North of Henderson, NC	North of Kittrell, NC	**NC1**
Q	118-124	North of Kittrell, NC	Tar River	**NC1**
R	124-126	Tar River	North of Franklinton, NC	**NC1**
S	126-132	North of Franklinton, NC	North of Youngsville, NC	**NC1**
T	132-134	North of Youngsville, NC	North of Wake Forest, NC	**NC1**
U	135-142	North of Wake Forest, NC	North Raleigh, NC	**NC1**
V	142-151	North Raleigh, NC	Boylan Wye Raleigh, NC	**NC5**

Table 2-2
Track Configuration

Project Sections	Begin		End		Number of Tracks
	Location (Approximate)	Closest Railroad Mile Post	Location (Approximate)	Closest Railroad Mile Post	
AA	Main St. Station Richmond, VA	S-0	Just South of Maury St. Richmond, VA	S-1	Double (2)
AA	Just South of Maury St. Richmond, VA	S-1	1/2 Mile South of Goodes St. Richmond, VA	S-2	Triple (3)
AA	1/2 Mile South of Goodes St. Richmond, VA	S-2	Old Lane Chesterfield County, VA	A-11	Double (2)
BB/CC	Old Lane Chesterfield County, VA	A-11	North Side Appomattox River Chesterfield County, VA	A-23	Triple (3)
CC	North Side Appomattox River Chesterfield County, VA	A-23	Just North of Washington St. Petersburg, VA	A-24	Double (2)
CC	Just North of Washington St. Petersburg, VA	A-24	North End of Collier Yard Petersburg, VA	A-27	Triple (3)
DD	North End of Collier Yard Petersburg, VA	A-27	South End of Collier Yard Petersburg, VA	A-29/ S-25	Single (1) Adjacent to Yard
DD	South End of Collier Yard Petersburg, VA	S-25	1/2 Mile North of Vaughan Rd. Dinwiddie County, VA	S-27	Double (2)

Table 2-2
Track Configuration

Project Sections	Begin		End		Number of Tracks
	Location (Approximate)	Closest Railroad Mile Post	Location (Approximate)	Closest Railroad Mile Post	
DD	1/2 Mile North of Vaughan Rd. Dinwiddie County, VA	S-27	1/2 Mile North of Duncan Rd. Dinwiddie County, VA	S-29	Single (1)
A	1/2 Mile North of Duncan Rd. Dinwiddie County, VA	S-29	1 Mile South of Quaker Rd. Dinwiddie, VA	S-34	Double (2)
B/C	1 Mile South of Quaker Rd. Dinwiddie, VA	S-34	Just South of Snap Lodge Rd. Dinwiddie, VA	S-43	Single (1)
C	Just South of Snap Lodge Rd. Dinwiddie, VA	S-43	Just North of Doyle Blvd. McKenney, VA	S-48	Double (2)
C/D	Just North of Doyle Blvd. McKenney, VA	S-48	1/4 Mile South of Kress Rd. Brunswick County, VA	S-56	Single (1)
D/E	1/4 Mile South of Kress Rd. Brunswick County, VA	S-56	Church St. Alberta, VA	S-61	Double (2)
E/F/G	Church St. Alberta, VA	S-61	1/2 Mile South of Old Indian Rd. Brunswick County, VA	S-70	Single (1)
H	1/2 Mile South of Old Indian Rd. Brunswick County, VA	S-70	1/4 Mile South of Wilson Rd. Mecklenburg County, VA	S-75	Double (2)

Table 2-2
Track Configuration

Project Sections	Begin		End		Number of Tracks
	Location (Approximate)	Closest Railroad Mile Post	Location (Approximate)	Closest Railroad Mile Post	
H/I/J	1/4 Mile South of Wilson Rd. Mecklenburg County, VA	S-75	Gaulding Rd. Mecklenburg County, VA	S-84	Single (1)
K	Gaulding Rd. Mecklenburg County, VA	S-84	Just North of Cliffside Dr. Mecklenburg County, VA	S-88	Double (2)
K/L/M	Just North of Cliffside Dr. Mecklenburg County, VA	S-88	1 Mile South of Faulkner Quarter Rd. Warren County, NC	S-96	Single (1)
M	1 Mile South of Faulkner Quarter Rd. Warren County, NC	S-96	Just North of Ridgeway Warrenton Rd. Warren County, NC	S-100	Double (2)
M/N/O	Just North of Ridgeway Warrenton Rd. Warren County, NC	S-100	1/2 Mile North of Carroll St. Middleburg, NC	S-106	Single (1)
O/P	1/2 Mile North of Carroll St. Middleburg, NC	S-106	Just North of US1 Bypass Vance County, NC	S-111	Double (2)
P	Just North of US1 Bypass Vance County, NC	S-111	Just South of Chavasse Ave. Henderson, NC	S-115	Single (1)
P/Q	Just South of Chavasse Ave. Henderson, NC	S-115	Just South of Beechtree Trail Rd. Vance County, NC	S-123	Double (2)

Table 2-2
Track Configuration

Project Sections	Begin		End		Number of Tracks
	Location (Approximate)	Closest Railroad Mile Post	Location (Approximate)	Closest Railroad Mile Post	
Q/R/S	Just South of Beechtree Trail Rd. Vance County, NC	S-123	1/2 Mile North of Bert Winston Rd. Franklin County, NC	S-133	Single (1)
S/T	1/2 Mile North of Bert Winston Rd. Franklin County, NC	S-133	County Line Franklin County/Wake County, NC	S-139	Double (2)
U	County Line Franklin County/Wake County, NC	S-139	1 Mile North of Durant Rd. Wake County, NC	S-146	Single (1)
U/V	1 Mile North of Durant Rd. Wake County, NC	S-146	Near Boylan Wye Raleigh, NC	S-157	Double (2)

2.2.3 SECTION AA

The section begins at Main Street Station in Richmond, VA, and extends to railroad milepost (MP) A-11 in Centralia, VA, a distance of 11.31 miles (see Section AA map, Figure 2-2). The Study Area follows the CSX S-line in this section, where there is active freight service. The section includes a crossing of the James River and is located entirely within the James River Basin. Detailed maps for this section can be found in Appendix R, maps 001-010.

2.2.3.1 SECTION AA ALTERNATIVES EVALUATED IN THE DEIS

All alternatives are on common alignment in this section. Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost. Operability relates to the ability of the alternative to meet the purpose and need for the Project.

Alternative VA1//VA2/VA3 has the following characteristics:

- Design objectives are to maximize the use of existing ROW and rebuild double tracks where they previously existed (i.e., several areas of this section were reduced to a single track) with crossovers to allow shared freight and passenger operation.
- CSX owns the existing railroad which supports active freight operations.
- The design provides a new railroad bridge over the James River, adjacent to and on the east side of the existing single-track railroad bridge.
- The MAS (described in Section 1.4) is 79 mph. Slower speeds are proposed in the immediate vicinity of Main Street Station in Richmond.

2.2.3.2 SECTION AA PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in this section is the common alignment of Alternatives VA1/VA2/VA3. Henceforth, the preferred alternative for Section AA will be referred to as Alternative VA1.

2.2.3.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- East Main Street - railroad bridge over roadway
- I-95 - roadway bridge over railroad
- East Cary Street - railroad bridge over roadway
- Powhite Expressway Ramps - roadway bridge over railroad
- East Dock Street - railroad bridge over roadway
- East Byrd Street - railroad bridge over roadway
- Manchester Road - railroad bridge over roadway
- I-95 Ramps at Maury Street - roadway bridge over railroad
- Cogbill Road - roadway bridge over railroad
- Chippenham Parkway - roadway bridge over railroad
- Marina Drive - railroad bridge over roadway
- Elliham Avenue - roadway bridge over railroad
- Jefferson Davis Highway - roadway bridge over railroad
- VA 288 - roadway bridge over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Maury Street - roadway bridge over railroad; on-site detour
- Goodes Street - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- East Commerce Road - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Ruffin Road - underpass (roadway under railroad); off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- West Bells Road - roadway bridge over railroad; on-site detour
- Station Road - roadway bridge over railroad; on-site detour
- Kingsland Road (existing at-grade crossing closed, road realigned to provide a new grade separated crossing located to the south) - roadway bridge over railroad; construction on new location
- New Public Road (north of Highway 288, connecting Thurston Road on the west side of the railroad to Chester Road on the west) - roadway bridge over railroad; construction on new location

Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Dale Avenue
- Brinkley Road
- Old Lane

2.2.3.4 RIVER AND MAJOR CREEK BRIDGES

James River – Heading south out of Main Street Station, the existing single-track railroad bridge is elevated on supports built to accommodate double-track through the triple railroad crossing; it remains elevated and transitions to a single-track width as it passes through a gated opening in a floodwall on the north side of the James River before proceeding to cross the river on a single-track bridge.

The designs for Preferred Alternative VA1 require addition of a second track across the James River. The proposed alignment would include a new bridge adjacent to and on the east side of the existing bridge as well as an enlargement of openings in the floodwalls to accommodate the addition of the proposed double track. The specific configuration for the addition of a second track railroad crossing of the James River, however, will be determined during final design within the limits as defined in the Project Tier II FEIS. The addition of a second track will expand railroad capacity and alleviate congestion at this major choke point.

The designs for Preferred Alternative VA1 require a second track across the James River. The proposed alignment would include a new bridge adjacent to and on the east side of the existing bridge as well as larger openings in the floodwalls to accommodate the proposed double track.

2.2.3.5 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Maury Street area – Between the publication of the Tier II DEIS and the development of the Tier II FEIS, the Manchester Industrial Historic District's (VDHR No. 127-0457) National Register of Historic Places (NRHP) nomination listing was updated in 2011 and, as a result, the boundary shown at the 2010 public hearings for the Tier II DEIS was increased. This expansion extended the historic district boundary on the north side

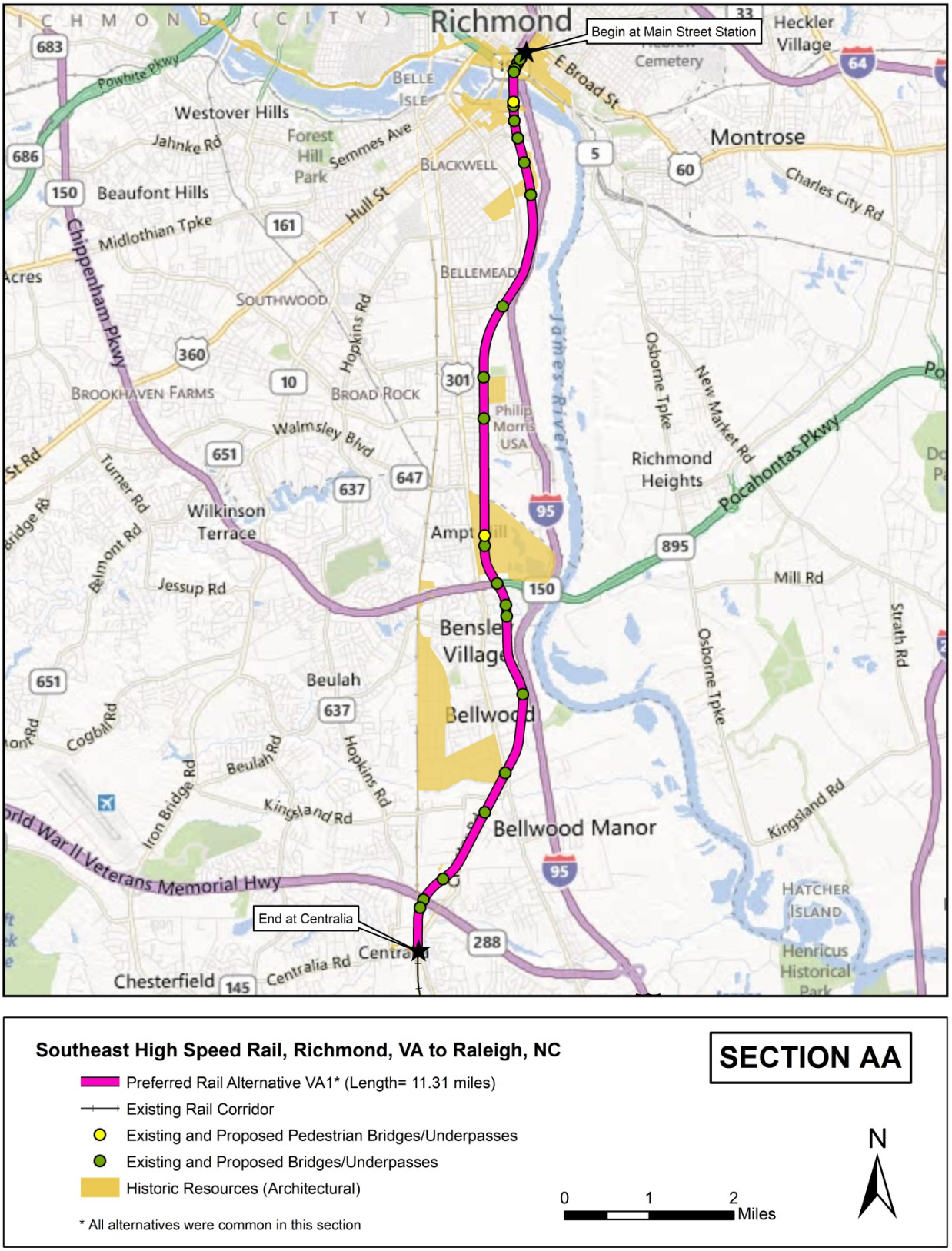
of Maury Street, as well as one property on the south side of Maury Street. The proposed Maury Street grade separation, as presented in the 2010 Tier II DEIS, impacted contributing elements in the Manchester Industrial Historic District expansion area and the Virginia Department of Historic Resources (VDHR) determined that the designs would result in an adverse effect on the district under Section 106 of the National Historic Preservation Act.

In response to VDHR's determination of adverse effect, and through close coordination with the City of Richmond staff, several modifications were made to the Maury Street designs originally proposed in the DEIS, including the construction of a new road parallel to the existing I-95 ramps and grade separating the crossing of this new road and the rail corridor just north of the existing I-95 ramps bridge, thereby avoiding all property impacts within the expanded Manchester Industrial Historic District boundary. Other means to minimize impacts from the new grade separation include using some of the fill from the original I-95 ramp, in addition to new retaining walls, to right of way needed from the Citgo Petroleum above-ground storage tanks located adjacent to the new roadway.

In addition to this new road and grade separated crossing, the City of Richmond provided their long range transportation plan for adding a roundabout at the Maury Street/I-95 ramps/E. 4th Street intersection to the SEHSR Project Team. The designs included in the FEIS incorporate this plan by providing a roundabout approximately 70-feet west of the existing Maury Street/I-95 ramps/4th Street intersection. To minimize impacts to the operational capabilities of the I-95 ramps from the proposed new road grade separation, the designs propose to relocate the I-95 off-ramp approximately 200-feet west of its existing intersection with Maury Street.

- Commerce Road - The typical section (roadway cross section) has been modified to reflect the designs shown in the City of Richmond's Commerce Road improvement project. A T-turn was also added on the west side of the railroad where pavement will be removed along the old road alignment. Additionally, a median crossover and a turn lane were added to Bellemeade Road at the intersection with Commerce Road.
- Dale Avenue – On both sides of the railroad where the existing at-grade crossing will be closed and pavement will be removed, T-turns were added at the request of the City of Richmond.
- Station Road - In response to comments from Chesterfield County, the alignment was shifted to avoid impacts to the planned Falling Creek Ironworks park/greenway.
- Chester Road - In response to comments from Chesterfield County, turn lanes were added for the intersection of Chester Road with Kingsdale Road, and the intersection of Chester Road and the extension of Park Road.

Figure 2-2



Southeast High Speed Rail, Richmond, VA to Raleigh, NC

SECTION AA

- Preferred Rail Alternative VA1* (Length= 11.31 miles)
- Existing Rail Corridor
- Existing and Proposed Pedestrian Bridges/Underpasses
- Existing and Proposed Bridges/Underpasses
- Historic Resources (Architectural)

0 1 2 Miles

N

* All alternatives were common in this section

2.2.4 SECTION BB

The section begins at railroad MP A-11 in Centralia, VA, and extends to railroad MP A-18, just south of Woods Edge Road, a distance of 6.91 miles (see Section BB map, Figure 2-3). The Study Area follows the CSX A-Line in this section where there is active freight and passenger rail service. The major population center in Section BB is Chester, VA, and the section passes through Chesterfield County. The section is located entirely within the James River Basin and includes a crossing of Falling Creek. Detailed maps for this section can be found in Appendix R, maps 010-016.

2.2.4.1 SECTION BB ALTERNATIVES EVALUATED IN THE DEIS

All alternatives are on common alignment in this section. Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost.

Alternative VA1/VA2/VA3 has the following characteristics:

- Design objectives are to maximize the use of existing ROW by installing a new passenger track approximately 30 feet east of existing track with crossovers to allow shared freight and passenger operation.
- CSX owns the existing railroad ROW, which supports active freight and passenger operations. The newly introduced Amtrak Norfolk service operates over this segment, which is also the preferred alignment for the proposed Richmond to Hampton Roads SEHSR Corridor (described in Section 1.1.2). FRA issued a ROD for the Richmond to Hampton Roads SEHSR Corridor Tier I EIS in December 2012, which includes six round-trip SEHSR Corridor trains from Richmond through Petersburg to Norfolk along a common alignment with the Project.
- The MAS is anticipated to be 90 mph based on the shared operation of the tracks with CSX.

2.2.4.2 SECTION BB PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in this section is the common alignment of Alternatives VA1/VA2/VA3. Henceforth, the preferred alternative for Section BB will be referred to as Alternative VA1.

2.2.4.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- West Hundred Road - roadway bridge over railroad
- Jefferson Davis Highway - railroad bridge over roadway
- Ruffin Mill Road - roadway bridge over railroad

New Bridges or Underpasses for Public Roads

- Centralia Road - roadway bridge over railroad; on-site detour
- Curtis Street - underpass (road under railroad); off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- West Street - pedestrian bridge over railroad
- Woods Edge Road - roadway bridge over railroad; on-site detour

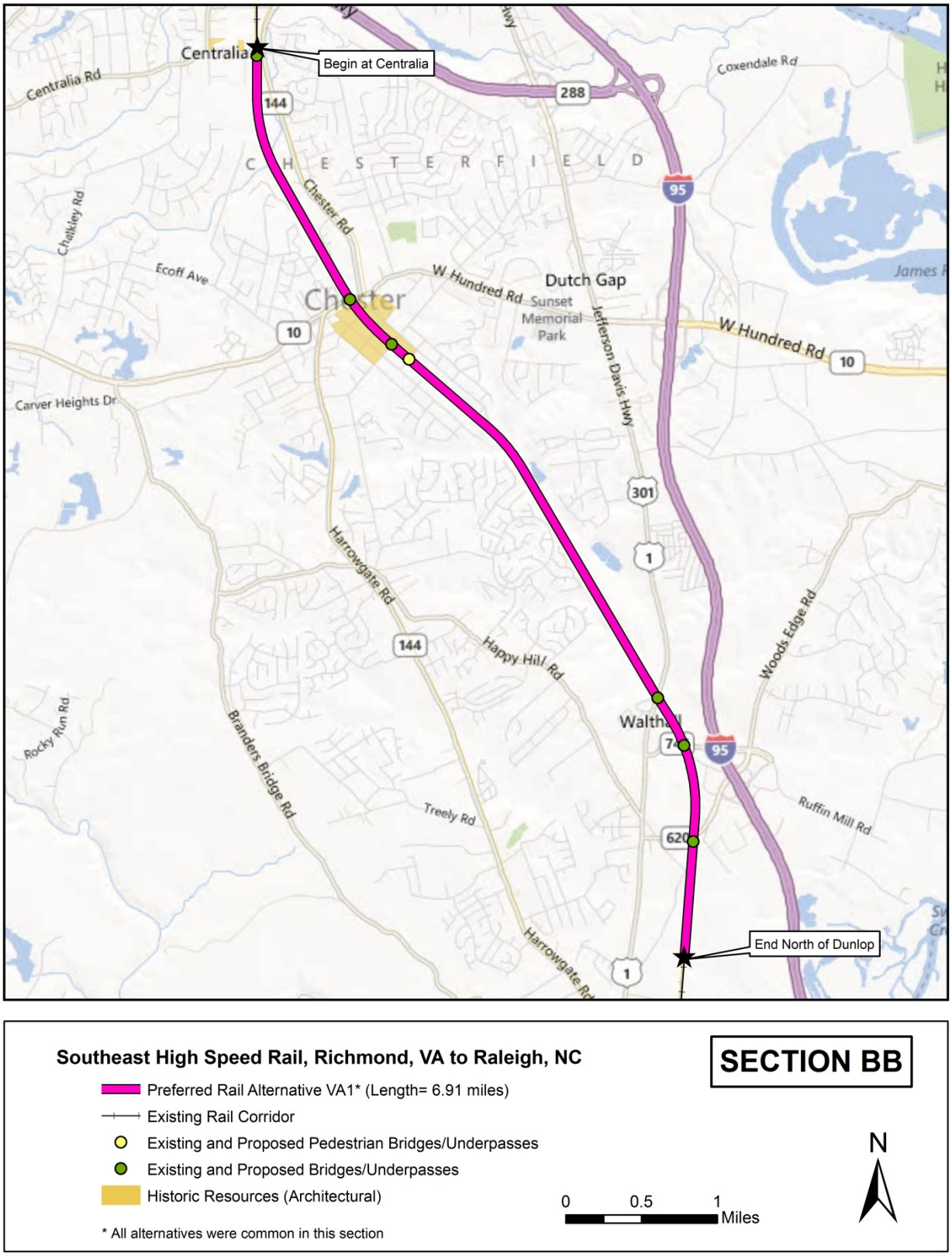
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- West Street

2.2.4.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Centralia and Hopkins Roads - In response to public comments and to help accommodate existing traffic congestion, improvements were developed for the intersection of Hopkins Road and Centralia Road. Hopkins Road was widened to allow the inclusion of a southbound turn lane; in addition, the alignment was shifted slightly westward to avoid impacts to the Ragland House historic resource. The designs for Centralia Road were extended westward and widened to accommodate an eastbound left turn lane at the intersection with Hopkins Road. To avoid impacts to the Ragland House, the Centralia Road alignment was shifted slightly to the south.
- Chester Road - In response to a request from the County to provide for northbound traffic movements for the businesses along the west side of Chester Road, the designs were revised to accommodate U-turn movements at two locations: one to be located at the existing Chester Road/Centralia Road intersection; and one to be located at the new Chester Road/Centralia Road intersection.
- Curtis Street - In response to a request from the County for improved pedestrian accessibility in the area, the curb and gutter typical section shown in the Project Tier II DEIS was extended to accommodate sidewalks.
- West Street - In response to a request from the County for improved pedestrian access in the area, a pedestrian bridge with stair towers was added to the designs. Additional design and analysis is needed to coordinate the implementation of an Americans with Disabilities Act (ADA) compliant pedestrian crossing of the railroad in this location. The Project Team will coordinate the designs and selected access alternatives (e.g., elevators, ramps, or tunnel) with Chesterfield County and VDHR (regarding potential impacts to the Chester Historic District). Refer to the Project Commitments for additional information.
- Woods Edge Road - In response to comments from the public and from the County, the closure that was proposed in the Project Tier II DEIS was eliminated, and replaced with a new design for a roadway bridge over the railroad.
- Walthall Industrial Parkway - The design was revised to provide a connection to the new Woods Edge Road alignment discussed above. In addition, the southward extension shown in the Project Tier II DEIS that was designed to provide property access during construction of the Pine Forest Drive grade separation was eliminated because Pine Forest Drive was redesigned to allow an on-site detour during construction and the extension is no longer needed.
- New public access roads near Woods Edge Road and Walthall Industrial Parkway - Three new (short) access roads were developed in conjunction with the new Woods Edge Road designs to connect the existing road network to the realigned Woods Edge Road.

Figure 2-3


Centralia
Begin at Centralia
Centralia Rd
144
288
Coxendale Rd
C H E S T E R F I E L D
95
Chalkley Rd
Chester Rd
Ecoff Ave
W Hundred Rd
Dutch Gap
Sunset Memorial Park
Chester
10
Jefferson Davis Hwy
W Hundred Rd
10
Carver Heights Dr
301
1
Harrowgate Rd
144
Happy Hill Rd
Woods Edge Rd
Rocky Run Rd
Branders Bridge Rd
95
Treely Rd
Ruffin Mill Rd
620
End North of Dunlop
1
Harrowgate Rd
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION BB
Preferred Rail Alternative VA1* (Length= 6.91 miles)
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
* All alternatives were common in this section
0
0.5
1
Miles
N

2.2.5 SECTION CC

The section begins at railroad MP A-18, just south of Woods Edge Road, and extends to Collier Yard at railroad MP A-27.5, a distance of 8.91 miles (see Section CC map, Figure 2-4). The Study Area follows the CSX A-Line in this section where there is active freight and passenger rail service. The major population centers in Section CC are Colonial Heights, VA, and Petersburg, VA. The section includes a new crossing of the Appomattox River, and is located within both the James River Basin and the Chowan River Basin. Detailed maps for this section can be found in Appendix R, maps 017-028.

2.2.5.1 SECTION CC ALTERNATIVES EVALUATED IN THE DEIS

All alternatives are on common alignment in this section. Table ES-5 displays information regarding impacts to the human and natural environment, as well as information about operability, constructability, and cost.

Alternative VA1/VA2/VA3 has the following characteristics:

Design objectives are to maximize existing ROW by installing a new passenger track approximately 30 feet east of existing track, with crossovers to allow shared freight and passenger operations, to minimize travel time through Petersburg, and provide options for a Petersburg-area station.

- Design objectives in this section are to maximize use of existing ROW by installing a new passenger track approximately 30 feet east of existing track with crossovers to allow shared freight and passenger operations, to minimize travel time through Petersburg, and provide track alignment and layout options for a Petersburg area station. Subsequent to the Project Tier II DEIS, the Petersburg area MPO (in partnership with Virginia DRPT, FRA and the City of Petersburg) initiated preparation of an EA NEPA document to select a preferred location for a permanent passenger rail station in the Petersburg area (refer to Section 1.4).
- CSX owns the existing railroad ROW in this section, which supports active freight operations.
- The alternative crosses the Appomattox River on a new railroad bridge, parallel to the existing, active CSX S-Line single-track bridge.
- The design accommodates a turnout (railroad connection) to the NS N&W Beltline upon which the newly introduced Amtrak Norfolk service operates, which is also the preferred alignment for the proposed Richmond to Hampton Roads SEHSR Corridor (described in Section 1.1.2).
- The MAS is anticipated to be 90 mph based on the shared operation of the tracks with CSX; however, the Limiting Speed is 80 mph.

2.2.5.2 SECTION CC PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in this section is the common alignment of Alternatives VA1/VA2/VA3. Henceforth, the preferred alternative for Section CC will be referred to as Alternative VA1.

2.2.5.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- East Ellerslie Avenue - roadway bridge over railroad

- Boulevard (new railroad bridge to be constructed adjacent to existing railroad bridge); off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- River Road/Chesterfield Avenue - roadway bridge over railroad
- Washington Street - railroad bridge over roadway
- Farmer Street (new railroad bridge to be constructed adjacent to existing railroad bridge); off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Halifax Street - roadway bridge over railroad
- I-85 - roadway bridge over railroad
- Defense Road; (new railroad bridge to be constructed adjacent to existing railroad bridge); off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Halifax Road - roadway bridge over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Pine Forest Drive - roadway bridge over railroad; on-site detour
- Branders Bridge Road - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Dupuy Road - roadway bridge over railroad; on-site detour
- Lincoln Street - pedestrian underpass (pedestrian pathway under railroad)

Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Lincoln Street
- Grimes Road

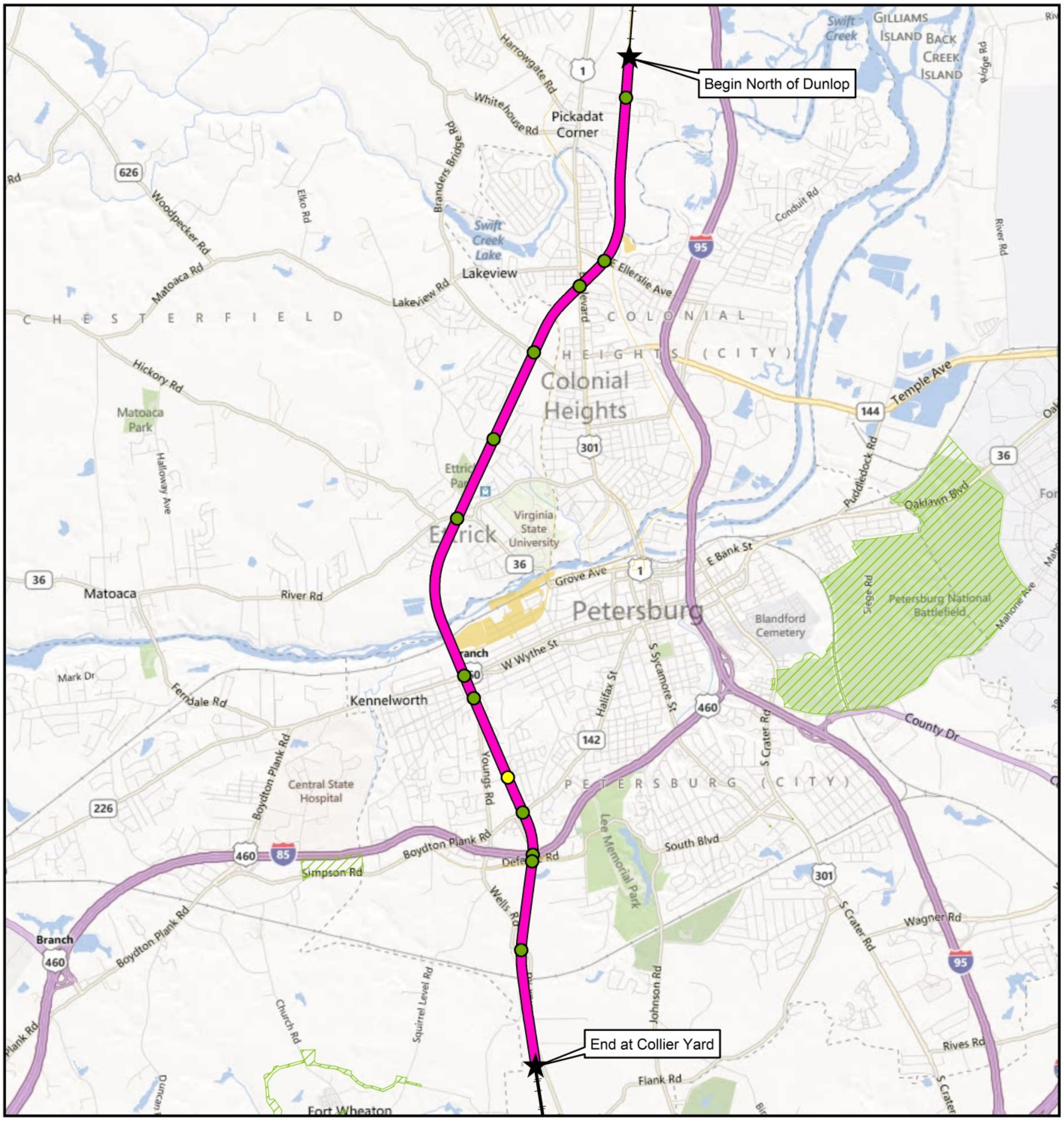
2.2.5.4 RIVER AND MAJOR CREEK BRIDGES

Appomattox River – A new parallel bridge is proposed for high speed passenger trains, located approximately sixty feet to the east of the existing single-track bridge. The existing bridge will continue to be used by freight trains.

2.2.5.5 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Pine Forest Road - The alignment shown in the Project Tier II DEIS was shifted southward to allow an on-site detour during construction; in addition, the eastward extension that connected to a Walthall Industrial Parkway extension was removed from the designs.
- Pine Forest Access Road – In response to comments, the design shown in the Project Tier II DEIS for a new access road west of the railroad that would connect to Pine Forest Drive at the north, and Mansion Drive to the south, was eliminated. Existing neighborhood access off of Jefferson Davis Highway will be maintained; driveway access to properties along Pine Forest Drive will be determined during the ROW phase of the Project.

Figure 2-4



Southeast High Speed Rail, Richmond, VA to Raleigh, NC

SECTION CC

- Preferred Rail Alternative VA1* (Length= 8.91 miles)
- Existing Rail Corridor
- Existing and Proposed Pedestrian Bridges/Underpasses
- Existing and Proposed Bridges/Underpasses
- Historic Resources (Architectural)
- Fort Wadsworth Unit of Petersburg Nat'l Battlefield

0 1 2 Miles

N

* All alternatives were common in this section

2.2.6 SECTION DD

The section begins at Collier Yard (railroad MP A-27.5) and extends westward along the inactive Burgess Connector to railroad MP S-29, a distance of 5.66 miles for Alternatives VA1 and VA3 and 5.63 miles for Alternative VA2 (see Section DD map, Figure 2-5). The tracks have been removed along the Burgess Connector, and small portions of the ROW have been sold for private property access. Section DD is located primarily in Dinwiddie County, VA, but includes a small area of Petersburg, VA. The section is located within the Chowan River Basin and has no major river crossings. Detailed maps for this section can be found in Appendix R, maps 028-033.

2.2.6.1 SECTION DD ALTERNATIVES EVALUATED IN THE DEIS

The design objectives for all alternatives in this section are to maximize the use of existing railroad ROW in the approach to Collier rail yard. The three alternatives are on common alignment except for one area just south of Collier rail yard where they cross over the CSX A-Line to the Burgess Connector to the west. In this area, the alternatives vary in their curvatures and the length of the bridges used to cross the CSX A-Line. The three variations were developed to address impacts to the Weldon Railroad battlefield (also known as Globe Tavern), which is crossed in this location. The battlefield was determined to be eligible for the NRHP and is protected under Section 106 of NHPA.

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative VA1 has the following characteristics:

- The alternative provides a new track 30 feet east of existing tracks in Collier Yard. It leaves existing ROW as the alignment passes up and over the CSX A-Line tracks on a grade separated railroad bridge to transition to the CSX Burgess Connector ROW.
- Limiting speed is 75 mph.
- The operability and constructability rating is neutral.

Alternative VA2 has the following characteristics:

- The alternative provides a new track 30 feet east of existing tracks in Collier Yard and utilizes a tighter curve than VA1 and VA3. It requires additional piers for construction of the longest bridge to cross over the CSX A-Line tracks (compared to VA1 and VA3) in order to minimize ROW needed from Weldon Railroad/Globe Tavern battlefield.
- Limiting Speed is 70 mph.
- The operability and constructability rating is negative due to bridge pilings that will limit future expansion of the CSX A-Line; limited access for CSX maintenance; and a lower speed.

Alternative VA3 has the following characteristics:

- The alternative provides a new track 30 feet east of existing tracks in Collier Yard and provides a shorter railroad bridge over the CSX A-Line tracks (compared to VA1 and VA2). VA3 also uses a short retaining wall to minimize ROW needed from Weldon Railroad/Globe Tavern battlefield.
- Limiting speed is 75 mph.
- The operability and constructability rating is positive.

2.2.6.2 SECTION DD PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

Alternative VA3 has the shortest bridge length and is the least visually intrusive.

The preferred alternative in Section DD is Alternative VA3. Although all three alternatives were determined to have no adverse effect on the Weldon Railroad/Globe Tavern battlefield during Section 106 coordination, Alternative VA3 (which has the shortest bridge length) is the least visually intrusive to the battlefield. Alternatives VA1 and VA2 would require less ROW from the battlefield, but would have a greater visual impact to the surrounding area. In addition, the ROW required for Alternative VA3 can be landscaped to blend into the surrounding "viewshed." This determination was validated in coordination with historians from the National Park Service (Petersburg National Battlefield).

Table ES-5 shows that Alternative VA3 also has fewer stream impacts than Alternative VA2 (and the same as Alternative VA1); the lowest cost; no relocations; and a positive rating for operability and constructability. Alternative VA3 does have slightly greater wetland impacts (less than a quarter acre more), but those impacts will be fully mitigated. There were no public comments expressing a preference for alternatives in this section.

2.2.6.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- Flank Road - new railroad bridge to be constructed adjacent to existing underpass - railroad bridge over roadway

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Unnamed Road south of Collier Yard - underpass (road under railroad); on-site detour
- Vaughn Road - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Squirrel Level Road - roadway bridge over railroad; on-site detour

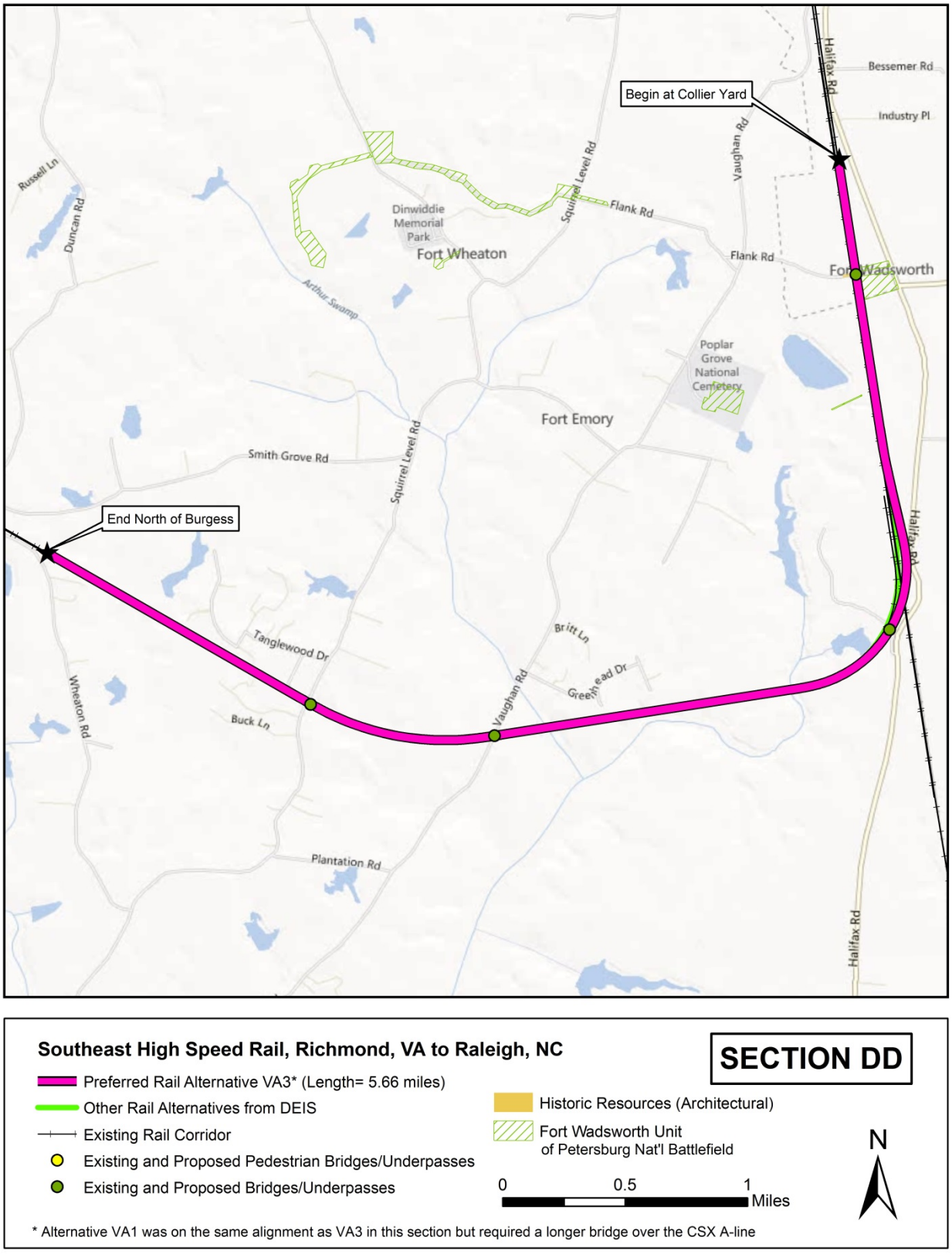
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- None

2.2.6.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Unnamed road south of Collier Yard- The alignment was shifted approximately 20 feet to allow maintenance of traffic during construction.
- Squirrel Level Road - The alignment shown in the Project Tier II DEIS was shifted approximately 100 feet east to allow traffic to be maintained on the existing road during construction of the new bridge. Slight revisions were made to Doe Drive on the north side of the railroad, and Tanglewood Drive on the south side of the railroad, to tie into the revised Squirrel Level Road alignment.

Figure 2-5


Begin at Collier Yard
End North of Burgess
Bessemer Rd
Industry Pl
Halifax Rd
Vaughan Rd
Squirrel Level Rd
Flank Rd
Russell Ln
Duncan Rd
Dinwiddie Memorial Park
Fort Wheaton
Arthur Swamp
Fort Wadsworth
Poplar Grove National Cemetery
Fort Emory
Smith Grove Rd
Tanglewood Dr
Britt Ln
Greenhead Dr
Wheaton Rd
Buck Ln
Plantation Rd
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION DD
Preferred Rail Alternative VA3* (Length= 5.66 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
Fort Wadsworth Unit of Petersburg Nat'l Battlefield
0
0.5
1
Miles
N
* Alternative VA1 was on the same alignment as VA3 in this section but required a longer bridge over the CSX A-line

2.2.7 SECTION A

The section begins at railroad MP S-29 on the inactive Burgess Connector, and extends to the CSX S-Line, north of the Dinwiddie community. The CSX S-Line is inactive between the Burgess Connector and Norlina, NC. The tracks were removed in 1987; however the ROW remains intact throughout most of the Study Area. Alternatives VA1 and VA3 are on common alignment in Section A, with a length of 4.93 miles. Alternative VA2 has a length of 4.95 miles (see Section A map, Figure 2-6). The section is located within the Chowan River Basin and has no major river crossings. Detailed maps for this section can be found in Appendix R, maps 034-038.

2.2.7.1 SECTION A ALTERNATIVES EVALUATED IN THE DEIS

In Section A, the three alternatives are the same except at the transition from the Burgess Connector to the CSX S-Line ROW (see Section A map). Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative VA1/VA3 has the following characteristics:

- The design objectives are to maximize the use of existing railroad ROW.
- Limiting Speed is 80 mph.
- The operability and constructability rating is negative due to a sharper curvature in the railroad alignment, which would likely result in increased long-term maintenance for the rails and train equipment, and a lower speed. This would cause deceleration and acceleration through the curves and lead to increased schedule time and fuel use.

Alternative VA2 has the following characteristics:

- The design objectives for Alternative VA2 are to optimize transition speed from the Burgess Connector to the CSX S-Line.
- Limiting speed is 95 mph.
- The operability and constructability rating is neutral.

2.2.7.2 SECTION A PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section A is Alternative VA2. Alternative VA2 has the fewest wetland and stream impacts; similar impacts to historic resources compared to Alternative VA1/VA3; a better operability rating; and accommodates higher speeds. There was one comment from the public expressing a preference for VA1/VA3 based on property impacts.

Alternative VA2 has the fewest wetland and stream impacts; similar impacts to historic resources compared to Alternative VA1/VA3; a better operability rating; and accommodates higher speeds.

2.2.7.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings
(Bridges or Underpasses will be Retained, Expanded or Replaced)

- I-85 - roadway bridge over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Duncan Road - roadway bridge over railroad; on-site detour
- Dabney Mill Road - roadway bridge over railroad; on-site detour
- Quaker Road - roadway bridge over railroad; on-site detour

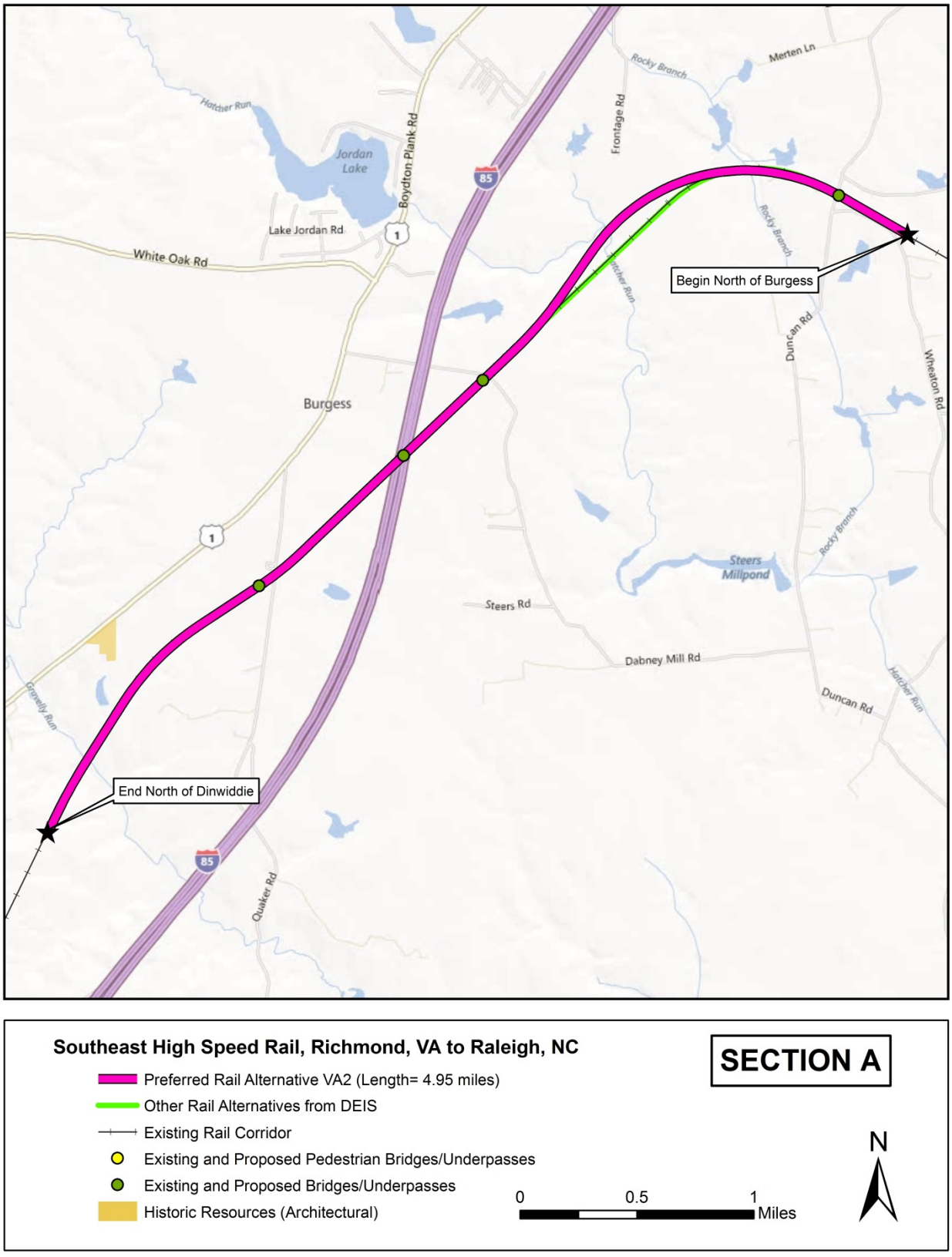
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- None

2.2.7.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Duncan Road- The road alignment and bridge were shifted approximately 60 feet to assist with maintenance of traffic during construction. The Smith Grove Road and Wheaton Road connections were modified accordingly
- Dabney Mill Road Access Road - The access road off Dabney Mill Road presented in the Project Tier II DEIS was removed from the designs in response to a request from the affected property owner; property access will be handled during the ROW phase of the Project.

Figure 2-6


Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION A
Preferred Rail Alternative VA2 (Length= 4.95 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N
Begin North of Burgess
End North of Dinwiddie
Hatcher Run
Jordan Lake
Boydton Plank Rd
Lake Jordan Rd
White Oak Rd
Burgess
Rocky Branch
Merten Ln
Frontage Rd
Duncan Rd
Wheaton Rd
Steers Millpond
Steers Rd
Dabney Mill Rd
Quaker Rd
85
1

2.2.8 SECTION B

The section begins north of the Dinwiddie community at railroad MP S-34 and extends southward to railroad MP S-40, a distance of 5.71 miles for Alternatives VA1 and VA3, which are on common alignment, and 5.80 miles for Alternative VA2 (see Section B map, Figure 2-7). Detailed maps for this section can be found in Appendix R, maps 038-043.

2.2.8.1 SECTION B ALTERNATIVES EVALUATED IN THE DEIS

Table ES-X displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative VA1/VA3 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

Alternative VA2 has the following characteristics:

- The design objective is to maximize the use of existing railroad ROW.
- Limiting speed is 90 mph.
- The operability and constructability rating is negative due to a sharper curvature in the railroad alignment, which would likely result in increased long-term maintenance for the rails and train equipment, and a lower speed. This would cause deceleration and acceleration through the curves and lead to increased schedule time and fuel use.

2.2.8.2 SECTION B PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section B is the common alignment of Alternatives VA1/ VA3. Henceforth, the preferred alternative for this section will be referred to as Alternative VA1. Table ES-5 shows that Alternative VA1 has greater impacts to forested uplands and prime and other important farmland; two more residential relocations; and a larger total cost compared to Alternative VA2. However, Alternative VA2 has had a much lower limiting speed and a negative rating for operability and constructability. In addition, Alternative VA2 has five more potential noise and vibration impacts (compared to Alternative VA1) and one business relocation (whereas Alternative VA1 has none).

It should be noted that the difference in stream and wetland impacts between the alternatives has been significantly reduced from what was presented in the Project Tier II DEIS. In the Project Tier II DEIS, Alternative VA1 had approximately 450 additional feet of stream impacts and 0.35 acres of wetland impacts compared to Alternative VA2. Of these, more than 300 feet of stream impacts and 0.3 acres of wetland impacts associated with Alternative VA1 were attributed to the proposed new access road that intersects Carson Road. Subsequent to the Project Tier II DEIS, this road has been shortened to minimize the stream and wetland impacts. Access to properties affected by the shortened road was addressed through development of a separate new access road off of Boydton Plank Road. The remaining stream and wetland impacts associated with the preferred alternative will be fully mitigated, and the design work will include coordination with the US Army Corps of Engineers (USACE). There was one public comment expressing a preference for an alternative in this section, specifying a preference for

Alternative VA1 had additional stream impacts and wetland impacts compared to Alternative VA2.

Alternative VA3 with the misunderstanding that it provided a third railroad alignment in the section.

2.2.8.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- Courthouse Road - roadway bridge over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Hunnicut Road - roadway bridge over railroad; on-site detour
- Carson Road – new roadway bridge over railroad on new location; on-site detour
- Gatewood Road - underpass (road under railroad); on-site detour

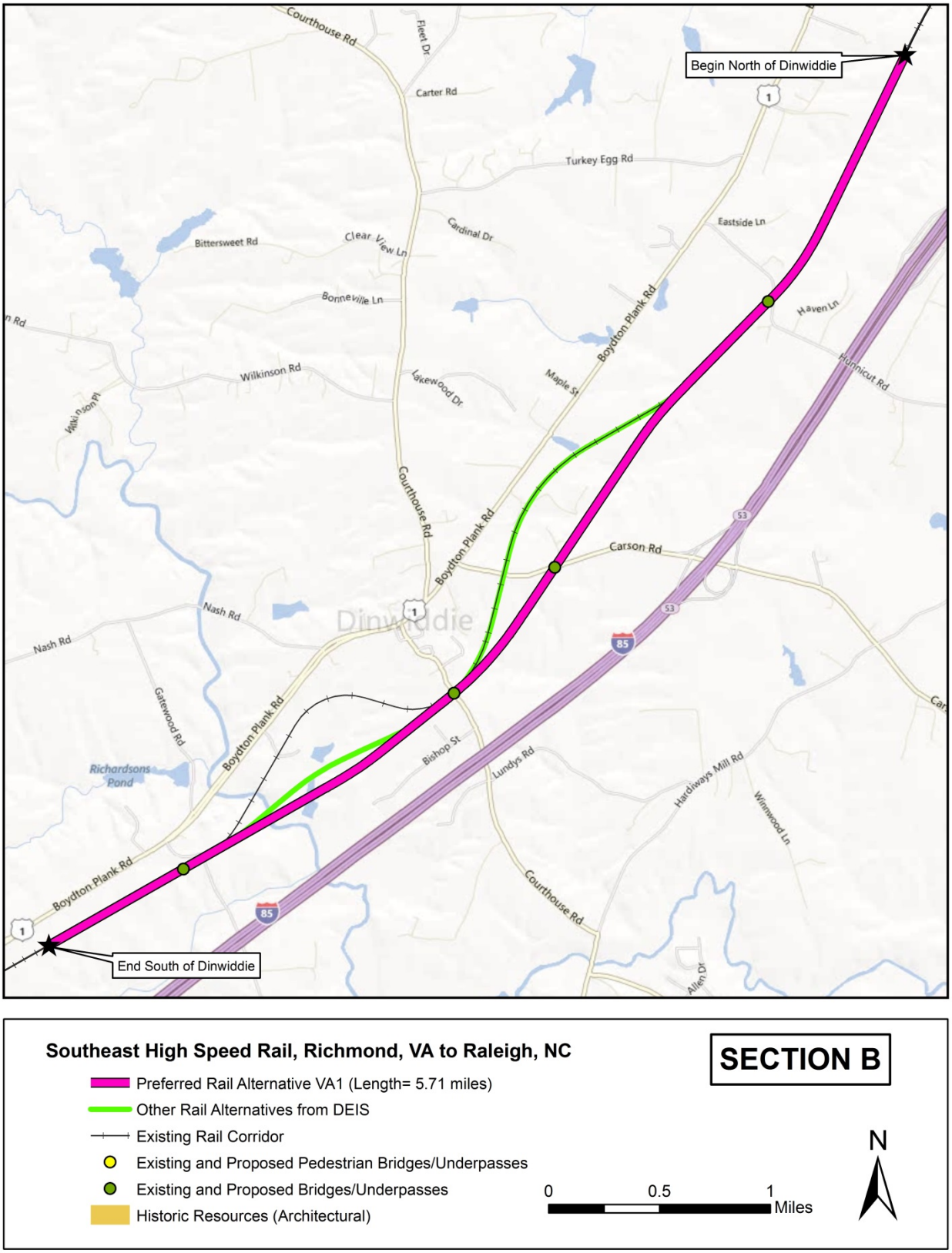
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- None

2.2.8.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- New Access Road off Carson Road- The access road west of the railroad connecting to Carson Road that was shown in the Project Tier II DEIS was shortened to minimize stream and wetland impacts; alternate access to affected properties was developed as described below.
- New Access Road off Boydton Plank Road - A new access road north of Carson Road, connecting to Boydton Plank Road was developed for Richmond to Raleigh Tier II FEIS as a way to provide property access while reducing steam and wetland impacts.

Figure 2-7


Begin North of Dinwiddie
End South of Dinwiddie
Courthouse Rd
Fleet Dr
Carter Rd
Turkey Egg Rd
Cardinal Dr
Eastside Ln
Bittersweet Rd
Clear View Ln
Bonneville Ln
Haven Ln
Boydton Plank Rd
Wilkinson Rd
Lakewood Dr
Maple St
Hunnicut Rd
Carson Rd
Nash Rd
Dinwiddie
Gatewood Rd
Richardsons Pond
Bishop St
Lundys Rd
Hardiways Mill Rd
Winnwood Ln
Allen Dr
1
53
85
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION B
Preferred Rail Alternative VA1 (Length= 5.71 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N

2.2.9 SECTION C

The section begins south of the Dinwiddie community at railroad MP S-40 and ends south of the Nottoway River at railroad MP S-51, a distance of 10.74 miles (see Section C map, Figure 2-8). The major population center is the Town of McKenney, VA. The section is located in the Chowan River Basin and includes a crossing of the Nottoway River. Detailed maps for this section can be found in Appendix R, maps 044-053.

2.2.9.1 SECTION C ALTERNATIVES EVALUATED IN THE DEIS

All alternatives are on common alignment. Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost.

Alternative VA1/VA2/VA3 has the following characteristics:

- The design objective was to maximize the use of existing railroad ROW.
- The alternative crosses the Nottoway River on a new bridge using existing piers.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

2.2.9.2 SECTION C PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section C is the common alignment of Alternatives VA1/VA2/VA3. Henceforth, the preferred alternative for this section will be referred to as Alternative VA1.

2.2.9.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- US-1 /Boydton Plank Road – roadway bridge over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Glebe Road - roadway bridge over railroad and US-1; on-site detour
- Karla Drive - roadway bridge over railroad; on-site detour
- Asbury Road - roadway bridge over railroad; on-site detour
- Doyle Boulevard - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes

Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Keelers Mill Road
- Lew Jones Road
- Snap Lodge Road
- Jack Zehmer Road

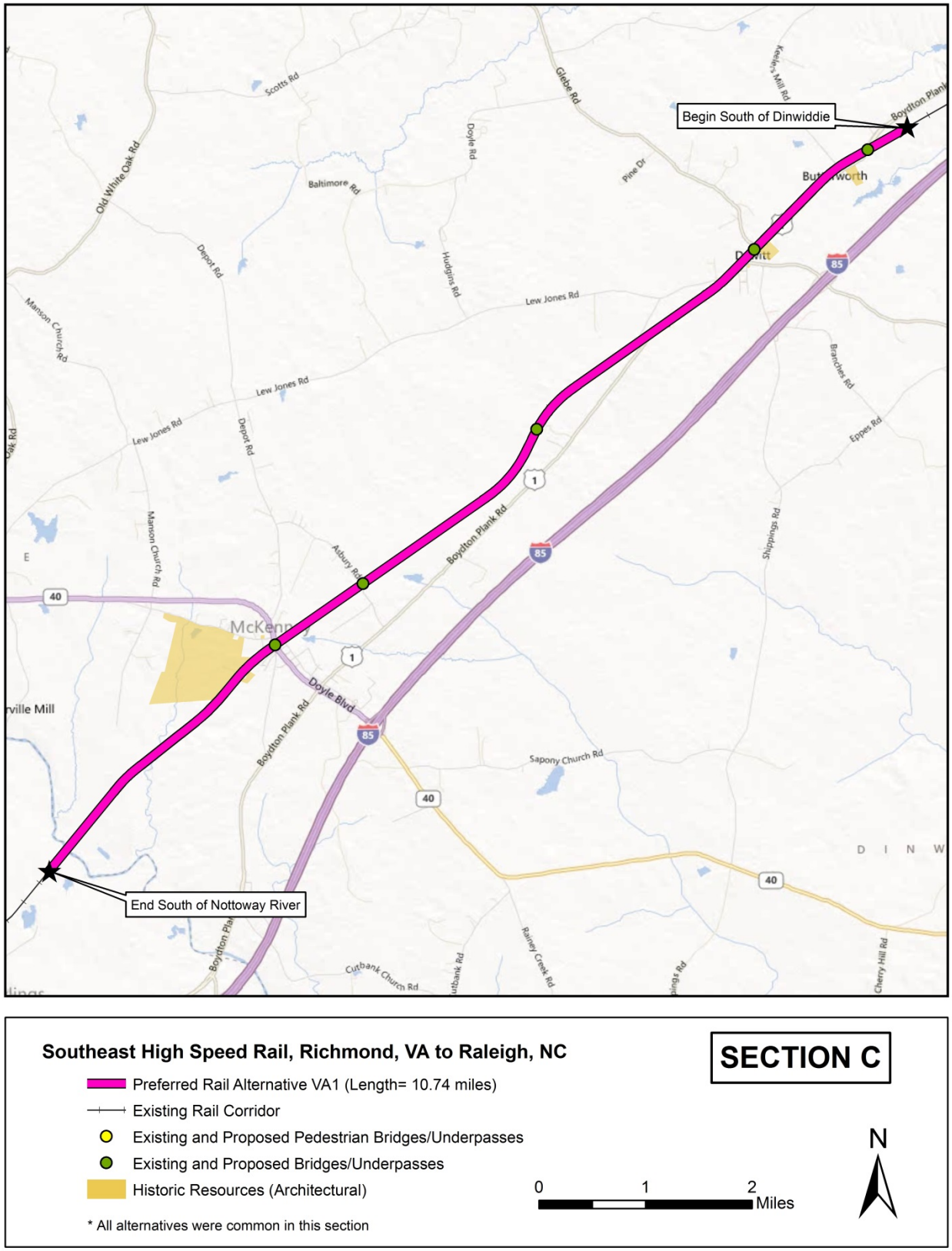
2.2.9.4 RIVER AND MAJOR CREEK BRIDGES

Nottoway River – Although the existing track has been removed throughout this area of the Project, the existing single-track Nottoway River Bridge remains intact. Under Preferred Alternative VA1 the Project intends to utilize the piers and substructure of the existing bridge; and to replace the superstructure (girders, decking and track).

2.2.9.5 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Keelers Mill Road – The road realignment shown in the Project Tier II DEIS was revised to avoid impacts to a family cemetery; the closure of the at-grade crossing is retained. As part of the new designs, a portion of the old road will be retained for property access. The new designs will result in additional impacts to approximately 271 feet of streams and 0.36 acres of wetlands, which are included in the revised totals in Table ES-5. Attempts were made to avoid these impacts; however, other options would cause substantial property impacts or would not serve the traffic pattern in this area. The change in design was coordinated with the USACE in April 2013.
- Rail Alignment in McKenney - The railroad alignment through McKenney, VA, was revised to shift slightly eastward, away from the NRHP boundary for the Zehmer Farm (referred to as Honeymoon Hill Farm in the Project Tier II DEIS), and further away from the Town's artesian well.
- Jack Zehmer Road Access Road - The new road shown in the Project Tier II DEIS to provide access to the portion of Jack Zehmer Road west of the railroad (which is cut off from the portion east of the railroad due to the closure of the existing at-grade crossing) was revised to minimize impacts to the Zehmer Farm historic resource; the new design intersects Sunnyside Road at the north end, near Sunnyside Elementary School, and then parallels the railroad south which will continue to provide access to the Town of McKenney's waste water treatment plant.

Figure 2-8



Southeast High Speed Rail, Richmond, VA to Raleigh, NC

SECTION C

- Preferred Rail Alternative VA1 (Length= 10.74 miles)
- Existing Rail Corridor
- Existing and Proposed Pedestrian Bridges/Underpasses
- Existing and Proposed Bridges/Underpasses
- Historic Resources (Architectural)

0 1 2 Miles

N

* All alternatives were common in this section

2.2.10 SECTION D

The section begins south of the Nottoway River at railroad MP S-51 and extends to north of Alberta, VA, at railroad MP S-57.5, a distance of 6.07 miles for Alternatives VA1 and VA3, which are on common alignment, and 6.41 miles for Alternative VA2. In response to agency comments, an additional alternative was subsequently developed for this section (Alternative VA4). The section is located within the Chowan River Basin and has no major river crossings. See Figure 2-9 for a map of Section D. Maps with greater detail can be found in Appendix R, maps 053-062.

2.2.10.1 SECTION D ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative VA1/VA3 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- The alternative is on new alignment east of the wide curve of the existing railroad ROW beginning at the north end of the section, and rejoins the existing ROW just south of Zero Road.
- The alternative would impact a population of a Federally-listed endangered plant species (Michaux's Sumac).
- The alternative would have an adverse effect on the Wynnhurst historic property under Section 106 of the NHPA and would also require a Section 4(f) use of Wynnhurst.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

Alternative VA2 has the following characteristics:

- The design objective is to maximize use of existing railroad ROW, and avoid impacts to the historic Wynnhurst property and the population of the endangered Michaux's Sumac.
- The alternative impacts more than 7 acres of wetlands and more than 500 feet of streams compared to Alternative VA1/VA3.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

2.2.10.2 SECTION D ALTERNATIVES DEVELOPED SUBSEQUENT TO THE DEIS

Alternative VA4 was developed after the completion of the public comment period for the Project Tier II DEIS, through coordination and consultation with the USACE, the Virginia Department of Historic Resources (VDHR), US Fish and Wildlife Service (USFWS), and the Virginia Division of Environmental Quality (VDEQ). During discussions with these agencies, it was determined that none of the existing alternatives would satisfy the conflicting concerns of the agencies (endangered species and historic resources on Alternative VA1/VA3 and wetland impacts on Alternative VA2).

Alternative VA4 was developed through coordination with the USACE, the VDHR, USFWS, and the VDEQ. None of the existing alternatives would satisfy the concerns of the agencies.

Alternative VA4 has the following characteristics:

- The design objectives are to reduce impacts to wetlands (compared to Alternative VA2), while avoiding a Section 4(f) use of Wynnhurst historic resource and impacts to the population of Michaux's Sumac.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

A Project update meeting was held in Alberta, VA, on July 14, 2011, to provide the public and local officials an opportunity to learn about VA4 in Section D (as well as a newly developed alternative VA4 in Section G). The public was informed that all alternatives were still under consideration, and they were asked to provide comments. Approximately 60 people attended the meeting. A meeting summary can be found in Appendix B.

2.2.10.3 SECTION D PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

Alternative VA4 does not require a Section 4(f) use of the Wynnhurst historic property, avoids impacts to the Michaux's Sumac, and minimizes wetland impacts.

The preferred alternative in Section D is Alternative VA4. Alternative VA4 does not require a Section 4(f) use of the Wynnhurst historic property, avoids impacts to the delineated population of the Michaux's Sumac, and minimizes wetland impacts (compared to Alternative VA2). This alternative was determined to be an acceptable preferred alternative by USACE, VDHR, USFWS, and VDEQ at an interagency meeting held on April 12, 2011.

Following the Project Tier II DEIS, six comments were received from the public expressing preference for an alternative: two were in favor of Alternative VA1/VA3 and four were in favor of Alternative VA2 (based on property impacts). Following the July 2011 Project update meeting where Alternative VA4 was introduced, six comments were submitted regarding a preference for an alternative: five comments were in favor of VA4 and one comment was in favor of VA1.

2.2.10.4 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- None

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Rawlings Road - roadway bridge over railroad; on-site detour
- Kress Road - roadway bridge over railroad; on-site detour
- Flat Rock Road - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes

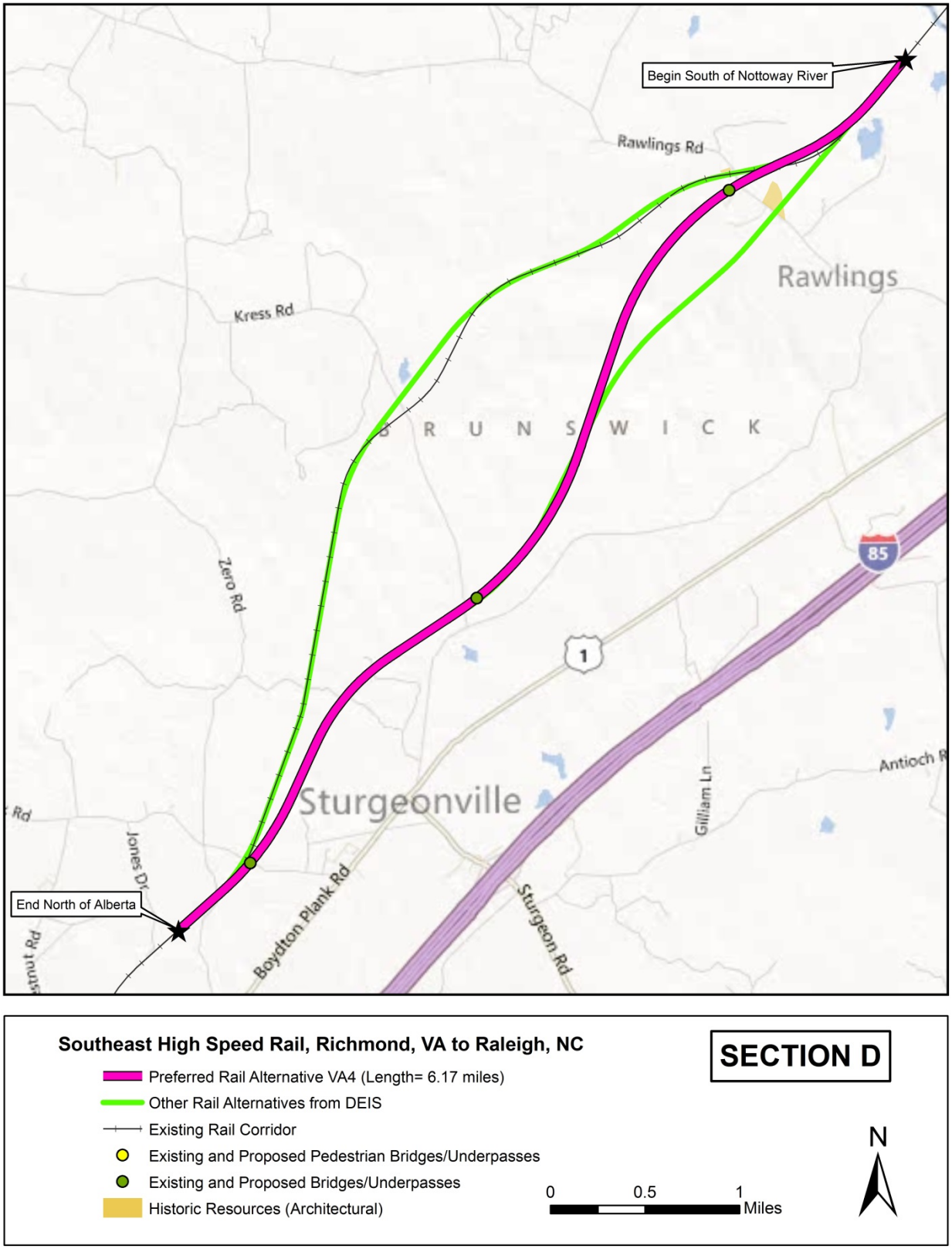
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Zero Road

2.2.10.5 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

The entire railroad alignment for Preferred Alternative VA4 and the associated road work was developed subsequent to publication of the Project Tier II DEIS. Detailed maps can be found in Appendix R, maps 053-062. No changes have been made to Alternative VA4 since the alternative was presented to the public at the Project update meeting in July 2011.

Figure 2-9


Begin South of Nottoway River
Rawlings Rd
Rawlings
Kress Rd
B R U N S W I C K
Zero Rd
85
1
Sturgeonville
Gilliam Ln
Antioch R
End North of Alberta
Boydton Plank Rd
Sturgeon Rd
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION D
Preferred Rail Alternative VA4 (Length= 6.17 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N

2.2.11 SECTION E

The section begins north of Alberta, VA, at railroad MP S-57.5 and extends to south of Alberta at railroad MP S-62, a distance of 4.21 miles for Alternatives VA1 and VA3, which are on common alignment, and 4.29 miles for Alternative VA2 (see Section E map, Figure 2-10). Alberta is the major population center for the section. The section is located within the Chowan River Basin and has no major river crossings. Detailed maps for this section can be found in Appendix R, maps 063-066.

2.2.11.1 SECTION E ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost.

Alternative VA1/VA3 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- The design flattens the curve in existing railroad ROW near Chestnut Road to a greater degree compared to Alternative VA2, then follows existing railroad ROW through the Town of Alberta, VA
- Limiting speed is 110 mph.
- The operability and constructability rating is positive.

Alternative VA2 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- The design also flattens the curve in existing railroad ROW near Chestnut Road, but requires more curvature and alignment length than VA1/VA3.
- The alternative is on common alignment with VA1/VA3 on existing railroad ROW through the Town of Alberta, VA.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

2.2.11.2 SECTION E PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

VA1 has fewer impacts compared to Alternative VA2, as well as a lower cost. It also has a better operability and constructability rating.

The preferred alternative in Section E is the common alignment of Alternative VA1/VA3. Henceforth, the preferred alternative for this section will be referred to as Alternative VA1. Table ES-5 shows that VA1 has fewer wetland and stream impacts, residential relocations, and vibration impacts when compared to Alternative VA2, as well as a lower cost. Alternative VA1 also has a better operability and constructability rating. There were no public comments expressing a preference for alternatives in this section; however, three comments from regulatory and resource agencies stated a preference for Alternative VA1.

2.2.11.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- Planned Tobacco Heritage Trail on the Old Virginian Railroad ROW – pedestrian underpass, railroad bridge over trail

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Chestnut Road - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Littlemont Road/Church Street - roadway bridge over railroad; on-site detour
- Second Avenue (existing crossing closed, road realigned to provide a new Grade Separated crossing located to the north) - roadway bridge over railroad; on-site detour
- Main Street - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes

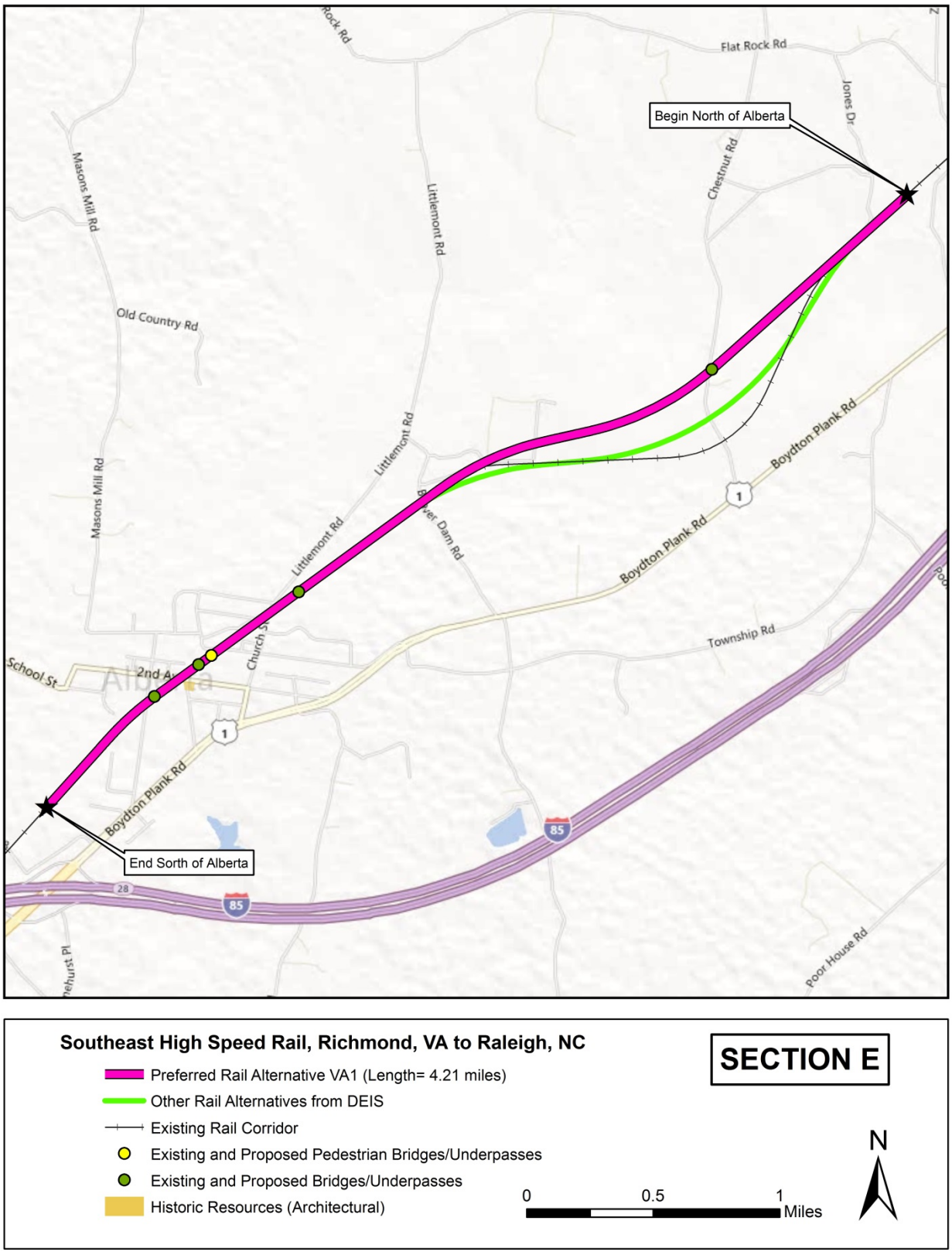
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Beaver Dam Road
- Virginia Avenue

2.2.11.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

No changes were made subsequent to the Project Tier II DEIS.

Figure 2-10


Begin North of Alberta
End Sorth of Alberta
Flat Rock Rd
Jones Dr
Chestnut Rd
Masons Mill Rd
Littlemont Rd
Old Country Rd
Boydton Plank Rd
Township Rd
School St
Church St
2nd Ave
Poor House Rd
85
1
28
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION E
Preferred Rail Alternative VA1 (Length= 4.21 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N

2.2.12 SECTION F

The section begins south of Alberta, VA, at railroad MP S-62 and ends south of Tower Road at railroad MP S-66.5, a distance of 4.28 miles (see Section F map, Figure 2-11). The greatest population density is located at the northern portion of the section in the vicinity of Alberta. The section is located in the Chowan River Basin and there are no major river crossings. Detailed maps for this section can be found in Appendix R, maps 067-070.

2.2.12.1 SECTION F ALTERNATIVES EVALUATED IN THE DEIS

All alternatives are on common alignment in this section. Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost.

Alternative VA1/VA2/VA3 has the following characteristics:

- The design objective is to maximize the use of existing railroad ROW.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

2.2.12.2 SECTION F PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section F is the common alignment of Alternatives VA1/VA2/VA3. Henceforth, the preferred alternative for this section will be referred to as Alternative VA1.

2.2.12.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- I-85 - roadway bridge over railroad
- Boydton Plank Road - (new roadway bridge over railroad to be constructed for realigned southbound lanes); on-site detour
- Christanna Highway - roadway bridge over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Rosebud Lane - roadway bridge over railroad; on-site detour
- Millville Road - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes

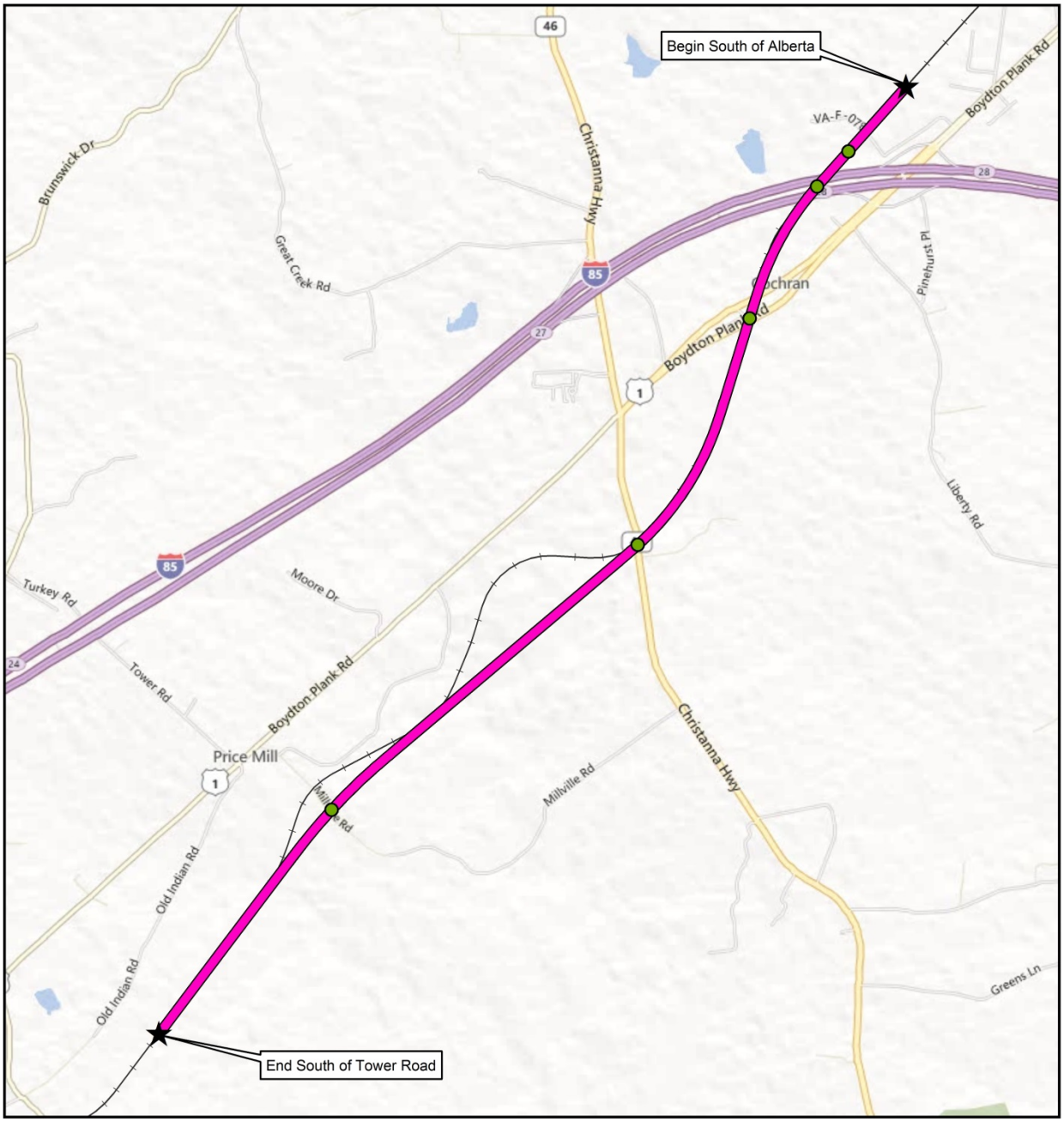
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- None

2.2.12.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

No changes were made subsequent to the Project Tier II DEIS.

Figure 2-11



Southeast High Speed Rail, Richmond, VA to Raleigh, NC

SECTION F

Preferred Rail Alternative VA1* (Length= 4.28 miles)

Existing Rail Corridor

Existing and Proposed Pedestrian Bridges/Underpasses

Existing and Proposed Bridges/Underpasses

Historic Resources (Architectural)

0 0.5 1 Miles

N

* All alternatives were common in this section

2.2.13 SECTION G

The section begins south of Tower Road at railroad MP S-66.5 and extends to the Meherrin River at railroad MP S-70, a distance of 3.61 miles for Alternatives VA1, 3.66 miles for Alternative VA2, and 3.55 miles for Alternative VA3. In response to agency comments and revised information regarding a historic resource, an additional alternative was developed for this section (Alternative VA4). A description of Alternative VA4 is provided below. The existing railroad ROW follows a series of sharp reverse (i.e., "S") curves through this section. The section is located within the Chowan River Basin and includes the Meherrin River crossing. See Figure 2-12 for a map of Section G. Maps with greater detail can be found in Appendix R, maps 071-074.

Alternative VA4 was developed in response to agency comments and revised information regarding a historic resource.

2.2.13.1 SECTION G ALTERNATIVES EVALUATED IN THE DEIS

Initially, Alternative VA1 and Alternative VA2 were developed to straighten the "S" curves through the section while generally following the existing inactive railroad ROW (with Alternative VA2 more closely following the railroad ROW than Alternative VA1). Subsequent cultural resource investigations determined that both alternatives would impact the Oak Shades historic resource, which is eligible for the NRHP. Alternative VA3 was developed in an attempt to avoid impacts to Oak Shades; however, an additional historic resource (the Tourist Guest House) was later identified along the VA3 alignment. Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost.

Alternative VA1 has the following characteristics and potential impacts and benefits:

- The design objectives are to improve train performance by straightening curves, but more closely follow the existing railroad ROW compared to Alternative VA3
- The alternative has no effect on the Tourist Guest under Section 106 of the NHPA, but has an adverse effect on the Oak Shades historic property and also requires a use of the Oak Shades resource under Section 4(f).
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

Alternative VA2 has the following characteristics and potential impacts and benefits:

- The design objective is to improve train performance by straightening curves.
- Of all the alternatives, it most closely follows the existing railroad ROW.
- The alternative has no effect on the Tourist Guest House historic property, but has an adverse effect on the Oak Shades historic property and also requires a use of the Oak Shades resource under Section 4(f).
- Limiting speed is 90 mph.
- The operability and constructability rating is negative due to a sharper curvature in the railroad alignment, which would likely result in increased long-term maintenance for the rails and train equipment, and a lower speed. This would cause deceleration and acceleration through the curves and lead to increased schedule time and fuel use.

Alternative VA3 has the following characteristics and potential impacts and benefits:

- The design objectives are to avoid impacts to the Oak Shades historic property and to improve train performance by straightening curves.

- The alternative is on new alignment west of the existing railroad ROW, providing the best train performance (compared to Alternative VA1 and Alternative VA2) because it has the straightest alignment through the section.
- The alternative has an adverse effect on the Tourist Guest House under Section 106 of the NHPA and would require a Section 4(f) use of the resource (the Tourist Guest House was identified as a historic resource eligible for the NRHP during the development of Alternative VA3).
- Limiting speed is 110 mph.
- The operability and constructability rating is positive.

2.2.13.2 SECTION G ALTERNATIVES DEVELOPED SUBSEQUENT TO THE DEIS

Alternative VA4 was developed after publication of the Project Tier II DEIS based on the impacts associated with the other three alternatives and input from the public and resource agencies. Four comments were received from the public expressing preference for an alternative presented in the Project Tier II DEIS: three people indicated a preference for Alternative VA1, and one person indicated a preference for Alternative VA2. However, at the July 15, 2010, public hearing in Alberta, VA, several members of the public expressed concerns about the property impacts associated with Alternative VA3. Although Alternative VA3 would not relocate any residences, it would require substantial ROW acquisition from several large family farms.

Alternative VA4 was developed based on the impacts of the other three alternatives and input from the public and resource agencies.

At a September 27, 2010, interagency meeting, USACE and VDEQ expressed concerns that Alternative VA2, which was presented in the Project Tier II DEIS as a possible Section 4(f) avoidance alternative for Section G, had the greatest stream and wetland impacts compared to Alternatives VA1 and VA3. Based on the discussion at this meeting VDHR requested additional research into the history of the Tourist Guest House to validate the appropriateness of the recommended NRHP-eligible boundary, which at that time encompassed the entire 55-acre tax parcel. On November 17, 2010, VDHR concurred with research completed by the Project team proposing a smaller eligible boundary for the Tourist Guest House that only encompasses the areas known to have been used during its period of historic significance. Based on this revised boundary, the Project team determined that a new alternative could potentially be developed to avoid a Section 4(f) use, minimize property impacts (compared to Alternative VA3), reduce stream and wetland impacts (compared to Alternative VA2), and provide similar train performance to Alternative VA3. Alternative VA4 was the result of this effort.

Alternative VA4 has the following characteristics and potential impacts and benefits:

- It provides similar train performance compared to Alternative VA3
- The design calls for construction of a new single-track, and potentially a second track for a passing siding if required through this location
- The alternative requires no Section 4(f) use of the Tourist Guest House or Oak Shades historic properties, and is favorably located closer to the rear of the properties it crosses compared to Alternative VA3; however, it would require a Section 4(f) use of the Orgain House (identified after the alternative was developed; see below).
- The alternative has the greatest amount of stream impacts of all of the alternatives
- Limiting speed is 110 mph.
- The operability and constructability rating is positive.

A Project update meeting was held in Alberta, VA, on July 14, 2011, to provide the public and local officials an opportunity to learn about VA4 in Section G (as well as the newly developed alternative VA4 in Section D). The public was informed that all alternatives were still under consideration, and they were asked to provide comments. Approximately 60 people attended the meeting. Following the meeting, four comments were submitted regarding a preference for an alternative: one was opposed to Alternative VA4, while three were in favor of Alternative VA4. Refer to Appendix B for a meeting summary.

In response to a comment about historic resources received at the Project update meeting, additional surveys were completed to ensure all resources eligible for the NRHP were identified within the Study Area in Section G. As a result of those surveys, a previously un-surveyed historic resource, the Orgain House, was identified as eligible for the NRHP. It was determined that Alternative VA4 would have an adverse effect on the Orgain House under Section 106 of the NHPA. It would also require a Section 4(f) use of the resource.

It should be noted that the Section 106 effect determination for the Oak Shades property was revised from "no adverse effect" as presented in the Project Tier II DEIS based on additional information and coordination with VDHR. During a review of all Project alternatives in October 2011, VDHR noted that although the railroad tracks for Alternative VA2 would be located down a steep escarpment from the Oak Shades main house, theVA2 alignment does not follow the historic location of the railroad and intrudes within the established NRHP-eligible boundary by approximately 100 feet, thus moving the railroad bed closer to the historic core of Oak Shades.

2.2.13.3 SECTION G PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section G is Alternative VA3. Through the development of Project alternatives, it was determined that there is no prudent and feasible alternative that can avoid a Section 4(f) use of all historic resources. Therefore, a "least overall harm" analysis was completed. This determination is made by balancing the factors listed in 23 CFR 774.3(c):

The preferred alternative is Alternative VA3. There is no alternative that can avoid a Section 4(f) use of all historic resources. Therefore, a "least overall harm" analysis was completed.

i. The ability to mitigate adverse impacts of each Section 4(f) property (including any measures that result in benefits to the property);

ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;

iii. The relative significance of each Section 4(f) property;

iv. The views of the official(s) with jurisdiction over each Section 4(f) property;

v. The degree to which each alternative meets the purpose and need for the Project;

vi. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and

vii. Substantial differences in costs among the alternatives.

The following factors were included in the "least overall harm" analysis:

- Alternative VA1 – Section 106 adverse effect and Section 4(f) use of Oak Shades; 654 feet of stream impacts; neutral rating for operability and constructability (operability is

related to the ability of the alternative to meet the purpose and need for the Project); total cost of $36.46 million

- Alternative VA2 – Section 106 adverse effect and Section 4(f) use of Oak Shades; 914 feet of stream impacts; negative rating for operability and constructability; total cost of $29.47 million
- Alternative VA3 – Section 106 adverse effect and Section 4(f) use of Tourist Guest House; 500 feet of stream impacts; positive rating for operability and constructability; total cost of $36.92 million
- Alternative VA4 – Section 106 adverse effect and Section 4(f) use of Orgain House; 1,095 feet of stream impacts; positive rating for operability and constructability; total cost of $40.73 million.

Input from the cultural and natural resource agencies was also used to evaluate the alternatives. In a discussion with VDHR on October 11, 2011, it was determined that:

- Alternative VA4 would have the most substantial impact to historic resources (because the main house on the Orgain property is within its construction limits)
- Alternative VA1 would have the second most substantial impact (because it would bring the railroad alignment within 50 feet of the main house on the Oak Shades property)
- The impacts of Alternative VA2 (to Oak Shades) and Alternative VA3 (to the Tourist Guest House) can be mitigated. Such mitigation could include landscaping to shield visual impacts.

From a water resources perspective, the resource agencies endorsed Alternative VA3. In a correspondence dated May 25, 2011, VDEQ noted that while they "recognize the problems associated with impacting the Tourist Guest House and/or Oak Shades," they identified Alternative VA3 as "the least environmentally damaging option that preserves the operational purpose of the Project, followed by VA1." Subsequently, in a letter dated June 29, 2011, USACE stated that they believe Alternative VA3 is the "least environmentally damaging practicable alternative" in Section G and noted that if another alternative was selected, "further avoidance and minimization will have to be incorporated into the Project to reduce the impacts to aquatic resources of the selected alternative to a level comparable to or less than those of VA3 in order for [them] to consider authorizing it."

The resource agencies endorsed Alternative VA3.

Based on the above, Alternative VA3 was selected as the preferred alternative in Section G because it is possible to mitigate the impacts to the Tourist Guest House; the impacts to historic resources are not as severe (compared to Alternative VA2 and VA4); it minimizes impacts to streams (of all alternatives); and it meets the purpose and need for the Project to the greatest degree (compared to Alternatives VA1 and VA2, which do not have positive operability and constructability).

Alternative VA3 is the preferred alternative because it is possible to mitigate the impacts to the Tourist Guest House; impacts to historic resources are not as severe; it minimizes impacts to streams; and it meets the purpose for the project the greatest degree.

2.2.13.4 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- Grandy Road - roadway bridge over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Old Indian Road at railroad MP S-68.5 - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Old Indian Road at railroad MP S-69.5 - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes

Public At-Grade Crossings to be Closed and Traffic Re-Routed

- None

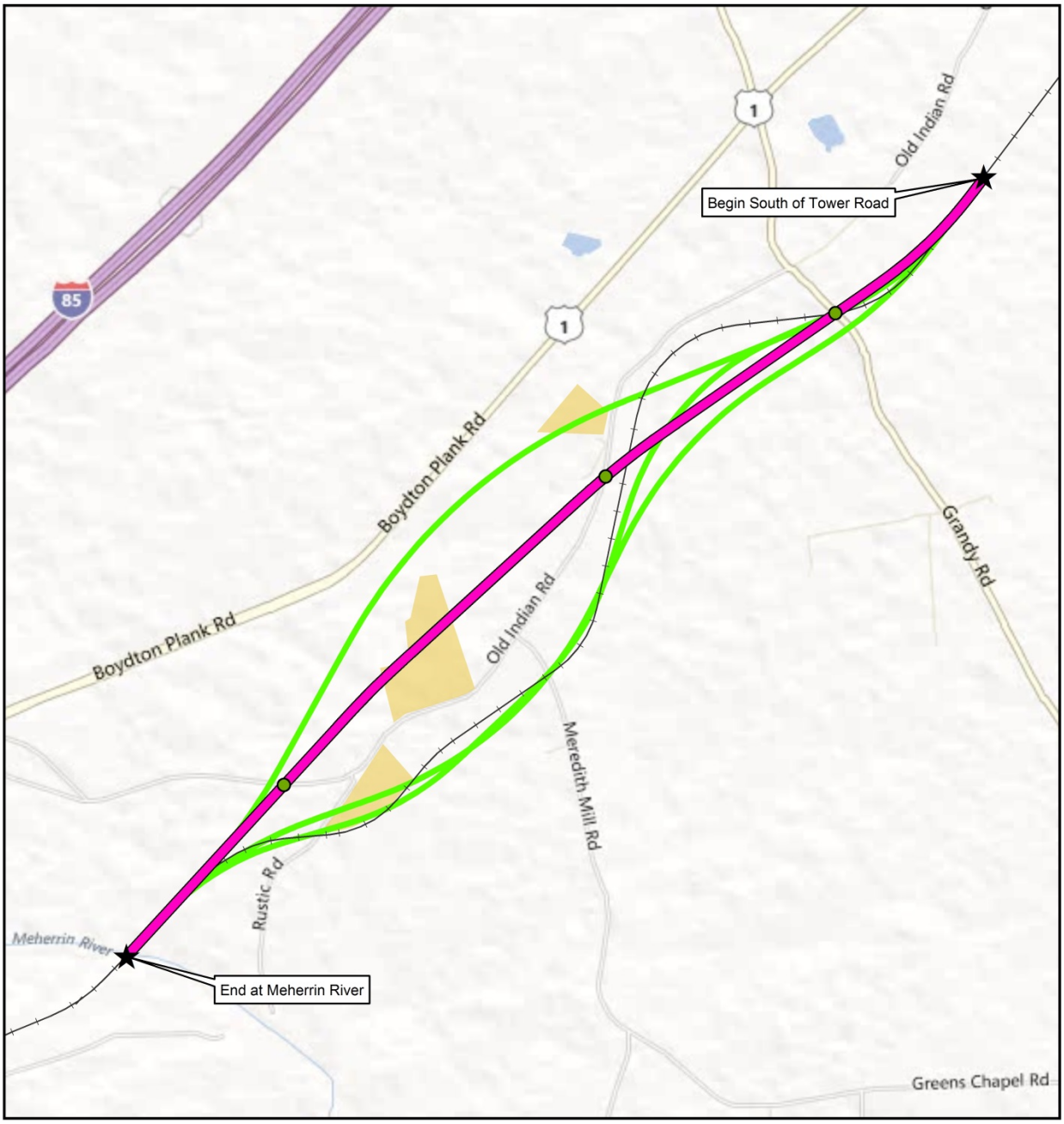
2.2.13.5 RIVER AND MAJOR CREEK BRIDGES

Meherrin River – Although the existing track has been removed throughout this area of the Project, the existing concrete ballast deck single-track bridge, built in 1975, is in good condition. Under Preferred Alternative VA3 the Project intends to utilize the piers and substructure of the existing bridge, as well as the superstructure (girders and decking).

2.2.13.6 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

No changes were made subsequent to the Project Tier II DEIS.

Figure 2-12



Southeast High Speed Rail, Richmond, VA to Raleigh, NC

SECTION G

- Preferred Rail Alternative VA3 (Length=3.55 miles)
- Other Rail Alternatives (from DEIS and Alternative Va4)
- Existing Rail Corridor
- Existing and Proposed Pedestrian Bridges/Underpasses
- Existing and Proposed Bridges/Underpasses
- Historic Resources (Architectural)

0 0.25 0.5 Miles

N

2.2.14 SECTION H

The section begins at the Meherrin River at railroad MP S-70 and extends to north of Wray Road at railroad MP S-76, a distance of 5.53 miles for Alternatives VA1 and VA3, which are on common alignment, and 5.58 miles for Alternative VA2 (see Section H map, Figure 2-13). The section is located within the Chowan River Basin and includes a portion of the Meherrin River crossing. Detailed maps for this section can be found in Appendix R, maps 075-080.

2.2.14.1 SECTION H ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative VA1/VA3 has the following characteristics:

- The design objectives are to improve train performance by straightening curves and provide a faster design speed compared to Alternative VA2.
- The alternative has a straighter alignment through the northern end of the section in Brunswick County compared to Alternative VA2.
- Limiting speed is 110 mph.
- The operability and constructability rating is positive.

Alternative VA2 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- The alternative is on common alignment with Alternative VA1/VA3 from near the Brunswick County/Mecklenburg County line, southward to the end of the section.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

2.2.14.2 SECTION H PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

Alternative VA1 has fewer impacts to streams, important farmland, and forested uplands; along with fewer noise and vibration impacts.

The preferred alternative in Section H is the common alignment of Alternative VA1/VA3. Henceforth, the preferred alternative for this section will be referred to as Alternative VA1. Alternative VA1 is the preferred alternative in Section H because it has fewer impacts to streams, prime and important farmland, and forested uplands; along with fewer noise and vibration impacts (Table ES-5). Although Alternative VA1 has a somewhat higher total cost, the long-term maintenance cost will be lower compared to Alternative VA2. This is due to the fact that the more abundant curves in the Alternative VA2 create a curvier and longer alignment, which would face greater wear and be more costly to maintain over time. This is reflected in the positive operability and constructability rating for Alternative VA1. There were no public comments indicating a preference for a particular alternative within this section.

2.2.14.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- None

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Tanner Town Road - underpass (road under railroad); on-site detour
- Wilson Road - roadway bridge over railroad; on-site detour

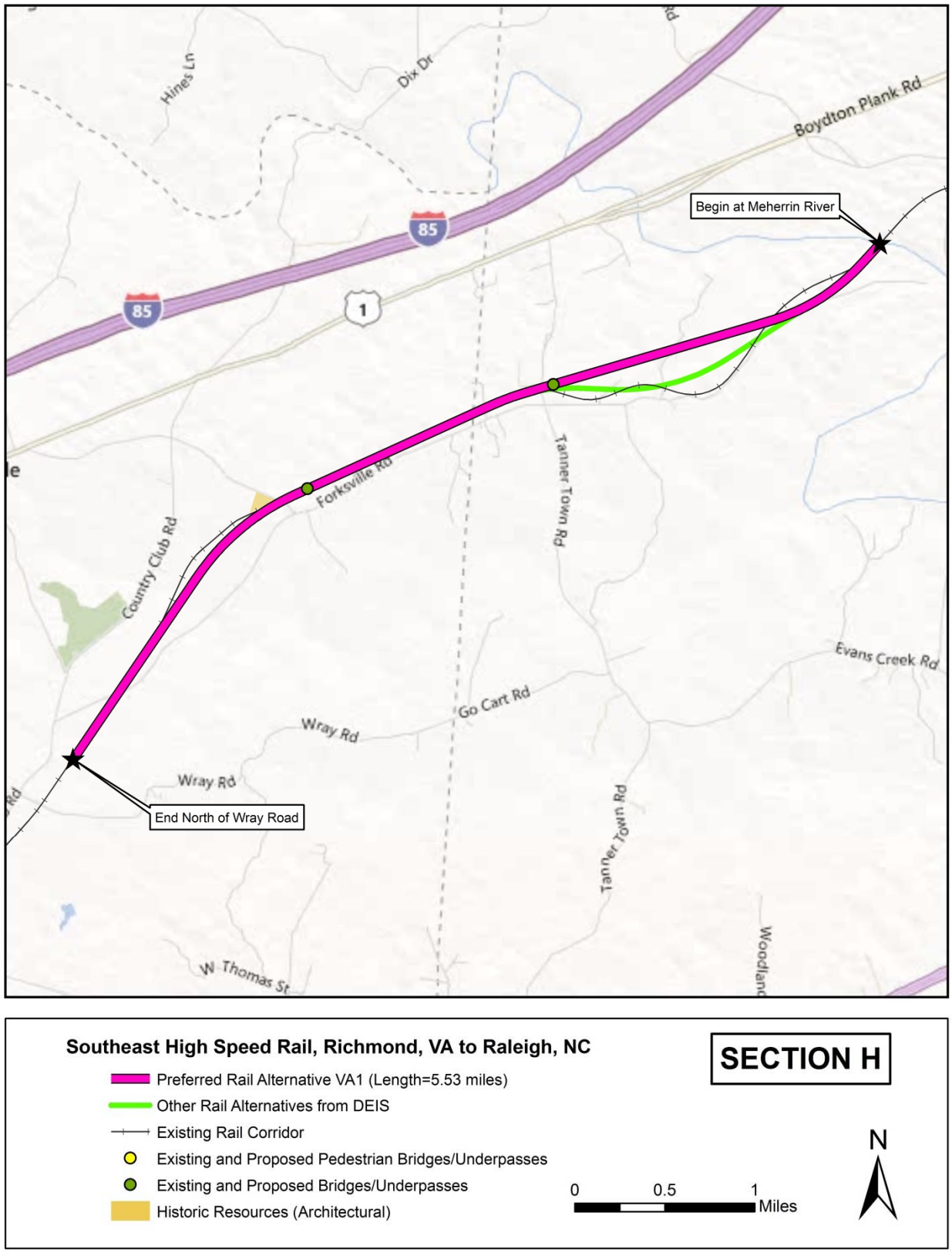
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Forksville Road

2.2.14.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

No changes were made subsequent to the Project Tier II DEIS.

Figure 2-13


Hines Ln
Dix Dr
Boydton Plank Rd
Begin at Meherrin River
85
85
1
Forksville Rd
Tanner Town Rd
Country Club Rd
Evans Creek Rd
Go Cart Rd
Wray Rd
Wray Rd
End North of Wray Road
Tanner Town Rd
W Thomas St
Woodland
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION H
Preferred Rail Alternative VA1 (Length=5.53 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N

2.2.15 SECTION I

The section begins north of Wray Road at railroad MP S-76 and extends to south of La Crosse, VA, at railroad MP S-80, a distance of 3.78 miles for all the alternatives (see Section I map, Figure 2-14). Alternatives VA1 and VA3 are on common alignment throughout the section. The section is located within the Chowan River Basin and the Roanoke River Basin and includes no major stream crossings. The Town of La Crosse, VA, is the major population center for the section. Detailed maps for this section can be found in Appendix R, maps 080-083.

2.2.15.1 SECTION I ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative VA1/VA3 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- The alternative follows a straighter line compared to Alternative VA2 to straighten a reverse (i.e., "S") curve in the existing railroad ROW.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

Alternative VA2 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- The alternative is on common alignment with Alternative VA1/VA3 except for north of La Crosse where different designs are used to straighten a reverse (i.e., "S") curve in the existing railroad ROW.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

2.2.15.2 SECTION I PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section I is the common alignment of Alternatives VA1/ VA3. Henceforth, the preferred alternative for this section will be referred to as Alternative VA1. Table ES-5 shows that Alternatives VA1 and VA2 have identical impacts to water resources with nominal stream impacts and no wetlands impacts. However, Alternative VA1 has fewer impacts to prime and important farmland and forested uplands and a lower cost. While Alternative VA1 has six more residential relocations compared to Alternative VA2, there appears to be comparable housing and vacant land available in the vicinity of the displaced residences, so it is anticipated that suitable relocation sites would be identified within the surrounding community. (Refer to Section 4.11 for more information on comparable housing.) There was one public comment in support of Alternative VA2, and one public comment in support of Alternative VA1/VA3.

Alternative VA1 has fewer impacts to important farmland and forested uplands and a lower cost. While Alternative VA1 has six more residential relocations compared to Alternative VA2, relocation sites would be identified within the surrounding community.

2.2.15.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- Wray Road - roadway bridge over railroad
- US-58 - roadway bridge over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- To Be Named (new roadway on new location, less than on quarter mile north of the existing Northington Road at-grade crossing) - underpass (road under railroad); construction on new location
- Planned Tobacco Heritage Trail - pedestrian underpass (pedestrian pathway under railroad)
- Marengo Road/Jones Street - underpass (road under railroad); on-site detour

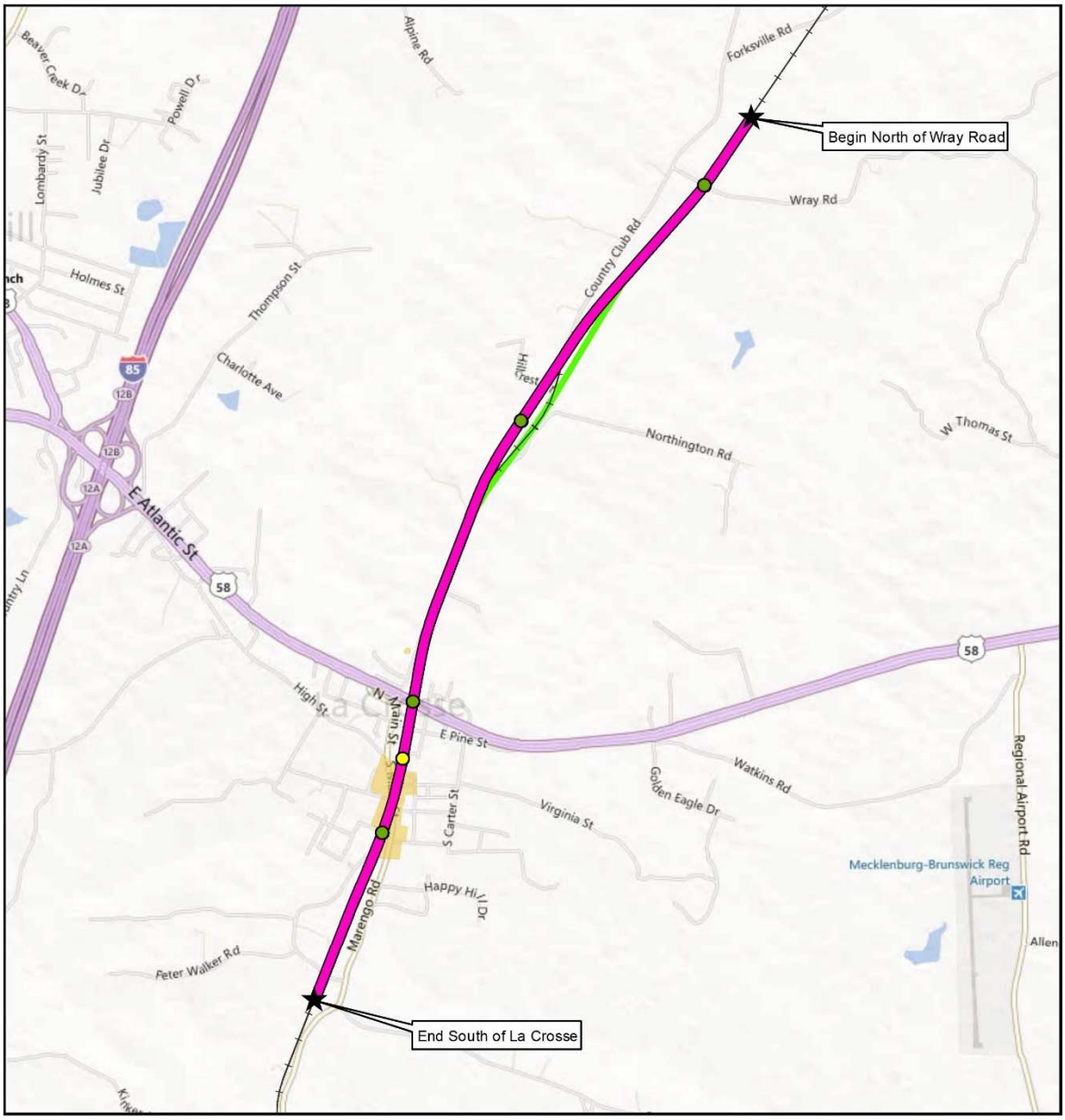
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Northington Road
- Pine Street
- Hillcrest Road
- Main Street
- Morris Town Circle

2.2.15.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Central Avenue - The alignment was shortened on the north end to avoid impacts to the La Crosse Hotel historic resource.
- Marengo Road – The road under the railroad was widened to three lanes, with curb and gutter, which will accommodate a sidewalk along the underpass.

Figure 2-14


Begin North of Wray Road
End South of La Crosse
Forksville Rd
Alpine Rd
Wray Rd
Country Club Rd
Northington Rd
W Thomas St
Thompson St
Holmes St
Charlotte Ave
E Atlantic St
N Main St
High St
E Pine St
Watkins Rd
Golden Eagle Dr
Virginia St
S Carter St
Marengo Rd
Happy Hi Vl Dr
Peter Walker Rd
Mecklenburg-Brunswick Reg Airport
Regional Airport Rd
Lombardy St
Jubilee Dr
Powell Dr
Beaver Creek Dr
85
58
12A
12B
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION I
Preferred Rail Alternative VA1 (Length=3.78 miles)
Other Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N

2.2.16 SECTION J

The section begins south of La Crosse, VA, at railroad MP S-80 and extends to north of Bracey, VA, at railroad MP S-84, a distance of 3.99 miles for Alternatives VA1 and VA3, which are on common alignment, and 4.10 miles for Alternative VA2 (see Section J map, Figure 2-15). The section is located within the Roanoke River Basin and includes no major stream crossings. Detailed maps for this section can be found in Appendix R, maps 084-087.

2.2.16.1 SECTION J ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative VA1/VA3 has the following characteristics:

- The design objectives are to improve train performance by straightening curves and provide a faster design compared to Alternative VA2.
- The alternative would have an adverse effect on the Wright Farmstead historic resource under Section 106 of the NHPA and would also require a Section 4(f) use of the property.
- Limiting speed is 110 mph.
- The operability and constructability rating is positive.

Alternative VA2 has the following characteristics:

- The design objectives are to improve train performance by straightening curves, and to avoid impacts to the Wright Farmstead historic property.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

Alternative VA2 is the Section 4(f) avoidance alternative and minimizes impacts to streams, prime and important farmlands, and forested uplands.

2.2.16.2 SECTION J PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section J is Alternative VA2. Alternative VA2 is the Section 4(f) avoidance alternative in this section and minimizes impacts to streams, prime and important farmlands, and forested uplands (see Table ES-5). Comments from the resource and regulatory agencies indicated a preference for Alternative VA2, while one individual indicated a preference for Alternative VA1/VA3.

2.2.16.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- None

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Bellfield Road - roadway bridge over railroad; on-site detour
- Marengo Road - roadway bridge over railroad; on-site detour
- Gaulding Road - roadway bridge over railroad; on-site detour

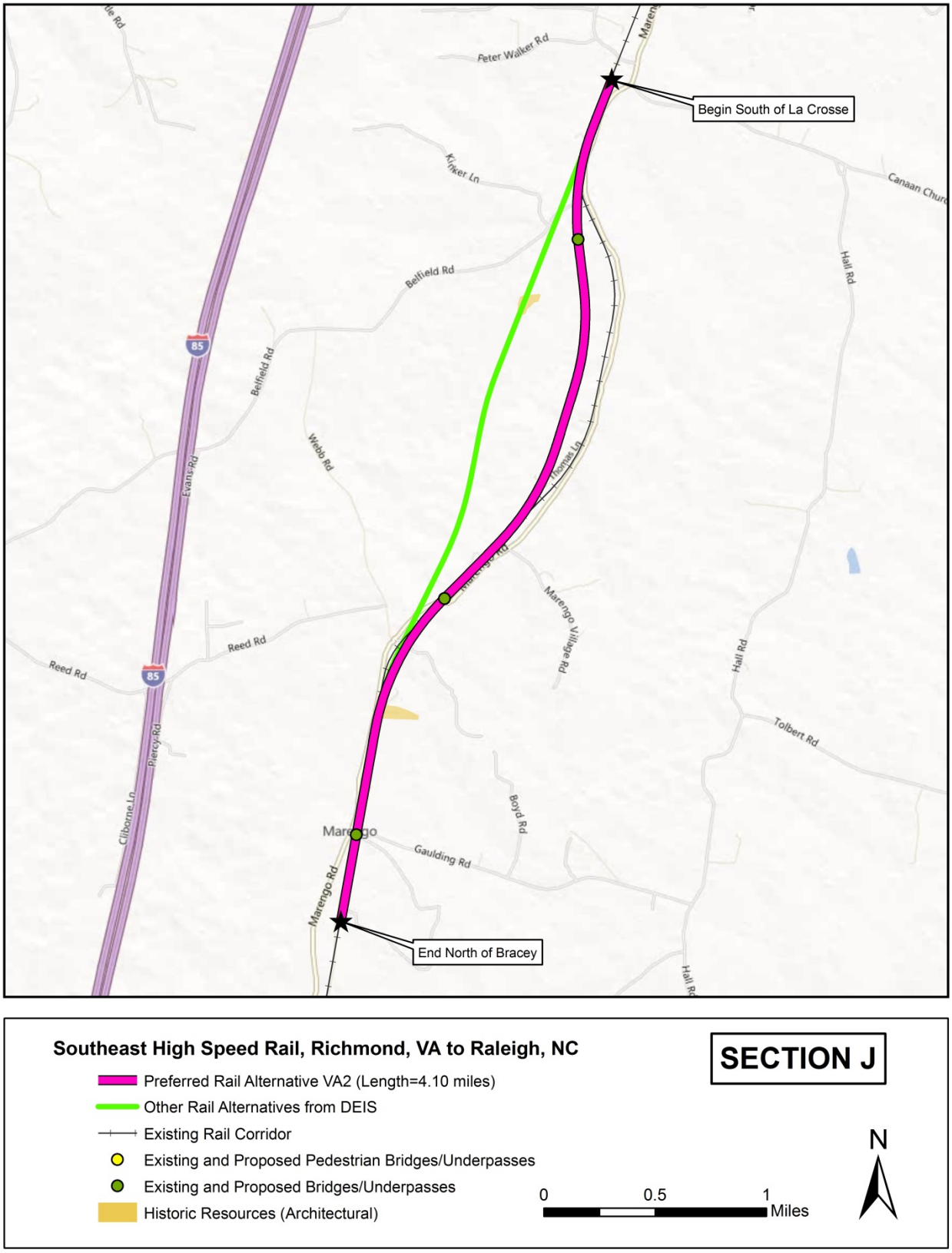
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- None

2.2.16.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Gaulding Road – The proposed road alignment with roadway bridge over the railroad was shifted approximately 100 feet north to allow traffic to be maintained on the existing road during construction.

Figure 2-15


Peter Walker Rd
Begin South of La Crosse
Kirker Ln
Belfield Rd
Hall Rd
Webb Rd
Evans Rd
Thomas Ln
Marengo Village Rd
Reed Rd
Tolbert Rd
Piercy Rd
Claiborne Ln
Boyd Rd
Gaulding Rd
Marengo Rd
End North of Bracey
85
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION J
Preferred Rail Alternative VA2 (Length=4.10 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N

2.2.17 SECTION K

The section begins north of Bracey, VA, at railroad MP S-84 and extends to the Roanoke River/Lake Gaston at railroad MP S-89, a distance of 4.96 miles for Alternatives VA1 and VA3, which are on common alignment, and 4.94 miles for Alternative VA2 (see Section K map, Figure 2-16). The section is located within the Roanoke River Basin and includes the crossing of the Roanoke River. Detailed maps for this section can be found in Appendix R, maps 087-091.

2.2.17.1 SECTION K ALTERNATIVES EVALUATED IN THE DEIS

The design objectives for all alternatives in this section are to improve train performance by straightening curves. All alternatives would also cross the Roanoke River/Lake Gaston in the location of the existing bridge and plans are to use the existing bridge piers (pending results of a detailed bridge investigation that would occur prior to final design). Table ES-5 displays information regarding impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative VA1/ VA3 has the following characteristics:

- The design provides a faster design speed compared to Alternative VA2.
- The alternative avoids impacts to the Bracey Historic District.
- Limiting speed is 110 mph.
- Has a neutral operability and constructability rating.

Alternative VA2 has the following characteristics:

- The design also straightens curves near Bracey to achieve improved design speed, but its use of the existing Highway 903 over the railroad results in a design that has a lower limiting speed.
- The alternative has an adverse effect on the Bracey Historic District under Section 106 of the NHPA and would require a Section 4(f) use of the resource.
- Limiting speed is 100 mph.
- The operability and constructability rating is negative due to a sharper curvature in the railroad alignment, likely resulting in increased long-term maintenance for the rails and train equipment, and a lower speed. This would cause deceleration and acceleration through the curves and lead to increased schedule time and fuel use.

2.2.17.2 SECTION K PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section K is the common alignment of Alternatives VA1/VA3. Henceforth, the preferred alternative for this section will be referred to as Alternative VA1. Alternative VA1 is the Section 4(f) avoidance alternative in Section K and minimizes impacts to streams, wetlands, and prime and important farmlands (see Table ES-5). Alternative VA1 also has a better operability and constructability rating, which would result in lower long-term maintenance for the rails and train equipment compared to Alternative VA2. There was one comment from an individual stating a preference for Alternative VA2.

Alternative VA1 is the Section 4(f) avoidance alternative that minimizes impacts to streams, wetlands, and important farmlands. It has a better operability and constructability rating, which would result in lower long-term maintenance.

2.2.17.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- Marengo Road - roadway bridge over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Highway 903 - roadway bridge over railroad; on-site detour

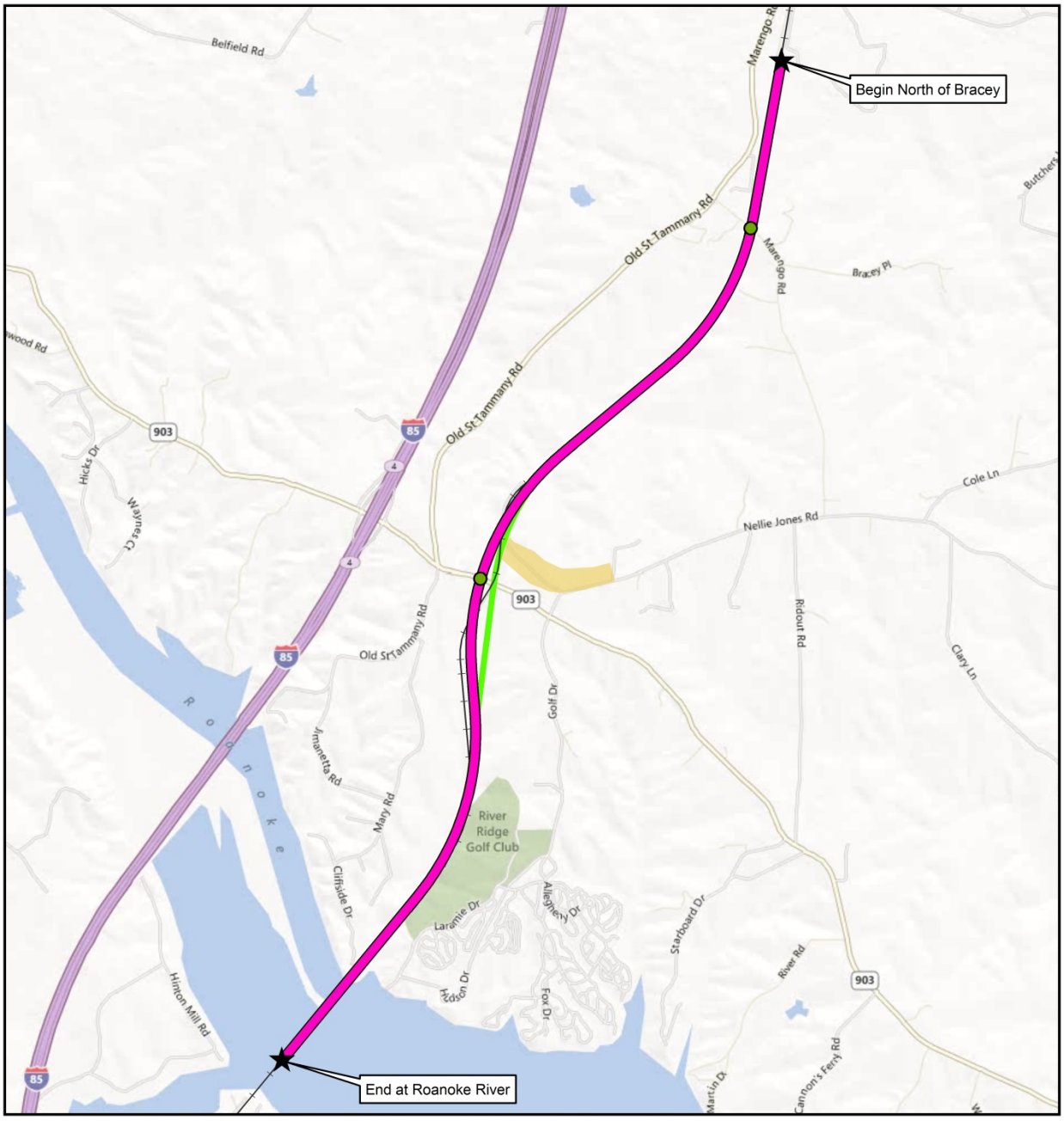
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- None

2.2.17.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

No changes were made subsequent to the Project Tier II DEIS.

Figure 2-16


Begin North of Bracey
End at Roanoke River
Belfield Rd
Old St Tammany Rd
Marengo Rd
Bracey Pl
Cole Ln
Nellie Jones Rd
Ridout Rd
Clary Ln
Golf Dr
Hicks Dr
Waynes Ct
Jmanetta Rd
Mary Rd
Cliffside Dr
Laramie Dr
Allegheny Dr
Starboard Dr
Fox Dr
River Rd
Hinton Mill Rd
Martin Dr
Cannon's Ferry Rd
River Ridge Golf Club
Roanoke
903
85
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION K
Preferred Rail Alternative VA1 (Length=4.96 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N

2.2.18 SECTION L

The section begins at the Roanoke River/Lake Gaston bridge (railroad MP S-89) and extends into North Carolina, ending north of Norlina, NC, at railroad MP S-95, a distance of 5.75 miles for Alternatives VA1/NC1 and VA3/NC3, which are on common alignment, and 5.96 miles for Alternative VA2/NC2 (see Figure 2-17). The section is located within the Roanoke River Basin and includes the crossing of the Roanoke River. Detailed maps for this section can be found in Appendix R, maps 091-095.

2.2.18.1 SECTION L ALTERNATIVES EVALUATED IN THE DEIS

The design objectives for all alternatives in this section are to improve train performance by straightening curves. Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative VA1/NC1/VA3/NC3 has the following characteristics and potential impacts and benefits:

- The design provides a faster design speed compared to Alternative VA2/NC2 by straightening the large eastward curve of the existing railroad that begins just north of the Virginia/North Carolina state line.
- The alternative avoids impacts to the Granite Hall/Fitts House historic property, which is located in Virginia just north of the North Carolina state line.
- The "new location" portion of the railroad alignment for this alternative crosses through a network of stream tributaries before rejoining the existing railroad ROW near Wise Five Forks Road.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

Alternative VA2/NC2 has the following characteristics and potential impacts and benefits:

- The design straightens curves, but to a lesser degree than Alternative VA1/VA3/NC1/NC3, by maximizing use of the existing railroad ROW.
- The alternative stays within existing railroad ROW near the Granite Hall/Fitts House historic resource. However, the proposed road realignment and bridge construction along Paschall Road would result in an adverse effect on the property under Section 106 of the NHPA and require a Section 4(f) use of the resource.
- Limiting speed is 100 mph.
- The operability and constructability rating is negative due to a sharper curvature in the railroad alignment, likely resulting in increased long-term maintenance for the rails and train equipment, and a lower speed and longer alignment. This would cause deceleration and acceleration through the curves and lead to increased schedule time and fuel use.

2.2.18.2 SECTION L PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section L is the common alignment of Alternatives VA1/NC1/VA3/NC3. Henceforth, the preferred alternative for this section will be referred to as Alternative VA1/NC1. Alternative VA1/NC1 is the Section 4(f) avoidance alternative in Section L. Table ES-5 shows that Alternative VA1/NC1 has greater stream and wetland impacts compared to VA2/NC2, but fewer impacts to prime and important farmlands, less residential relocation, fewer noise and vibration impacts, and a lower total cost. In addition, it has a neutral constructability and operability rating (compared to a negative rating for

Alternative VA2/NC2) and has better support from the public. Seven public comments indicated a preference for Alternative VA1/NC1 compared to two for Alternative VA2/NC2.

Alternative VA1/NC1 has greater impacts compared to VA2/NC2, but fewer impacts to prime and important farmlands, less residential relocation, fewer noise and vibration impacts, and a lower total cost.

During Project coordination, USACE expressed concerns regarding the greater stream and wetland impacts on Alternative VA1/NC1 (2,809 feet of stream impacts and 0.57 acres of wetland impacts compared to 1,422 feet of stream impacts and 0.01 acres of wetland impacts for Alternative VA2/NC2). In a letter to USACE dated January 6, 2011, the Project team explained the differences between the alternatives. Based on the information in the letter, as well as previously submitted related information, USACE stated on January 13, 2011, that if the Project team assessed that Alternative VA2/NC2 is "not practicable due to residential displacements, cost, and operability, then [USACE] can concur with your assessment based on the information submitted." Due to residential displacements, cost, and operability, as well as public sentiment, noise and vibration impacts, and impacts to prime and important farmlands, the Project team finds that Alternative VA2/NC2 is not practicable. The impacts to streams and wetlands will be fully mitigated, and the design work will include coordination with USACE.

2.2.18.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- None

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Paschall Road- roadway bridge over railroad; on-site detour
- Wise Five Forks Road- roadway bridge over railroad; on-site detour

Due to residential displacements, cost, and operability, as well as public sentiment, noise and vibration impacts, and impacts to prime and important farmlands, Alternative VA2/NC2 is not practicable. The impacts to streams and wetlands will be fully mitigated, and the design work will include coordination with USACE.

Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Felts Road
- Faulkner Quarter Road

2.2.18.4 RIVER AND MAJOR CREEK BRIDGES

Roanoke River/Lake Gaston – Although the existing track has been removed throughout this area of the Project, the existing single-track bridge remains intact. Under Preferred Alternative VA1/NC1 the Project intends to utilize the piers and substructure of the existing bridge, as well as the superstructure (girders and decking).

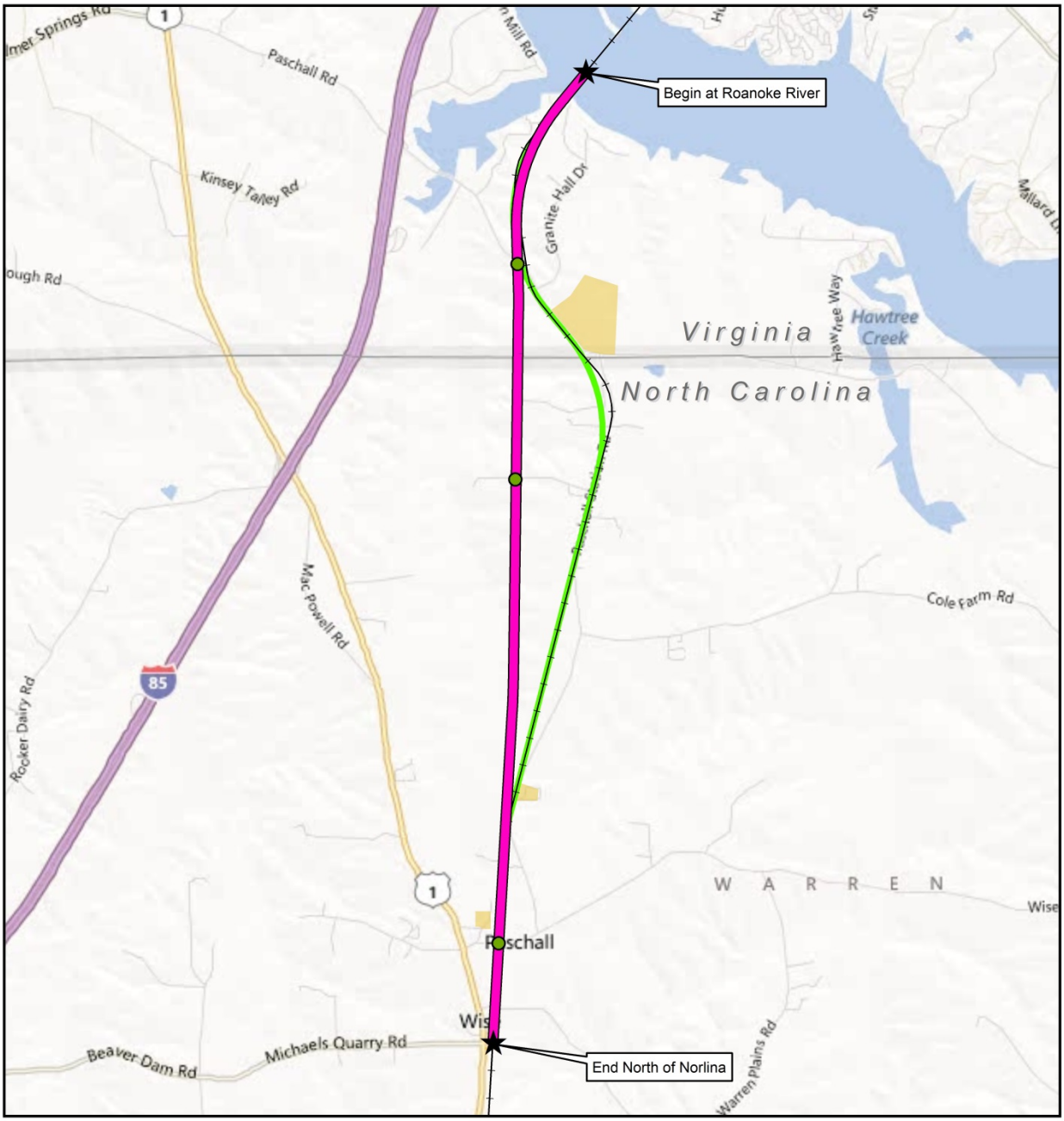
2.2.18.5 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Felts Road – The proposed roadway bridge over the railroad shown in the Project Tier II DEIS has been removed from the designs; the Project proposes to close this crossing, and construct a T-turn on the east side of the railroad. Additional evaluation subsequent to the Project Tier II DEIS led to a decision to eliminate the grade separation due to: low

traffic volumes, and the fact that properties on the west side of the railroad that that bridge was designed to serve would receive adequate access via the new access road (west of the railroad, connecting Felts Road at the north end to US1 at the south).

- New Access Road (west of the railroad, connecting Felts Road at the north end to US-1 at the south) – In response to comments, the alignment at the southern end was revised to reduce property impacts by shifting closer to an existing pathway, which moves the intersection further away from the intersection of US-1 and Carrie Dunn Road. In addition, the alignment was shifted slightly at the north end due to elimination of the proposed Felts Road bridge (described above).
- Faulkner Quarter Road - The Project Tier II DEIS designs showed changes to the elevation of Faulkner Quarter Road in order to connect to the proposed new access road parallel to, and east of, the railroad. In order to reduce property impacts along Faulkner Quarter Road, the elevation of the new access road was raised (as shown in the Richmond to Raleigh Tier II FEIS) such that changes to Faulkner Quarter Road are no longer required. Note, however, that the Faulkner Quarter Road existing at-grade railroad crossing is still proposed to be closed.

Figure 2-17



Southeast High Speed Rail, Richmond, VA to Raleigh, NC

SECTION L

- Preferred Rail Alternative VA1/NC1 (Length=5.75 miles)
- Other Rail Alternatives from DEIS
- Existing Rail Corridor
- Existing and Proposed Pedestrian Bridges/Underpasses
- Existing and Proposed Bridges/Underpasses
- Historic Resources (Architectural)

0 0.5 1 Miles

N

2.2.19 SECTION M

The section begins north of Norlina, NC, at railroad MP S-95 and extends to southwest of Norlina, NC at railroad MP S-101, a distance of 6.14 miles for Alternatives NC1 and NC3, which are on common alignment, and 5.97 miles for Alternative NC2 (see Section M map, Figure 2-18). From the Ridgeway community southward to Raleigh, NC, the CSX S-Line tracks remain in place and there is active freight service. The section is located within both the Roanoke River Basin and the Tar-Pamlico River Basin and includes no major stream crossings. Norlina, NC, is the major population center in this section. Detailed maps for this section can be found in Appendix R, maps 096-102.

2.2.19.1 SECTION M ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative NC1/NC3 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- The alignment provides better train performance due to a smoother curve in the approach to Norlina, NC at the north end of the section compared to Alternative NC2.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

Alternative NC2 has the following characteristics:

- The design objective is to maximize the use of existing railroad ROW, and more closely follow the existing curve in the approach to Norlina.
- Limiting speed is 80mph.
- The operability and constructability rating is negative due to a sharper curvature in the railroad alignment, which would likely result in increased long-term maintenance for the rails and train equipment, and a lower speed. This would cause deceleration and acceleration through the curves and lead to increased schedule time and fuel use.

2.2.19.2 SECTION M PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section M is the common alignment of Alternatives NC1 and NC3. Henceforth, the preferred alternative for this section will be referred to as Alternative NC1. Table ES-5 shows that Alternative NC1 minimizes stream impacts and has fewer impacts to forested uplands compared to Alternative NC2. Neither alternative would impact wetlands. Alternative NC1 also does not impact a repeater tower that is a contributing element to the Raleigh and Gaston Railroad Corridor (a historic resource protected by Section 106 of the NHPA), whereas Alternative NC2 would require its relocation. In addition, the limiting speed for Alternative NC1 (110 mph) is 30 mph faster than the limiting speed of Alternative NC2, and Alternative NC1 has a neutral operability and constructability rating compared to a negative rating for Alternative NC2.

Alternative NC1 minimizes stream impacts and has fewer impacts to forested uplands. Alternative NC1 does not impact a repeater tower. The limiting speed for Alternative NC1 is 30 mph faster than the limiting speed of Alternative NC2.

Compared to Alternative NC2, Alternative NC1 has the same number of business relocations, one additional residential relocation, and fewer potentially impacted noise receptors. However, Alternative NC1 has a greater number of severely impacted noise receptors and a slightly greater number of structures potentially impacted by vibration compared to Alternative NC2. There were 11 comments received from the public expressing preference for an alternative based on property impacts. Seven people preferred Alternative NC1 and four people preferred Alternative NC2.

2.2.19.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- US-158- replace existing bridge, construct new railroad bridge over roadway

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Warren Plains Road - roadway bridge over railroad; on-site detour
- Ridgeway Drewry Road - roadway bridge over railroad; on-site detour

Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Weldon Road (close at railroad located on new location)
- Town and Country east neighborhood entrance(close at railroad located on new location)
- Town and Country west neighborhood entrance (close at railroad located on new location)
- Ridgeway Warrenton Road

2.2.19.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

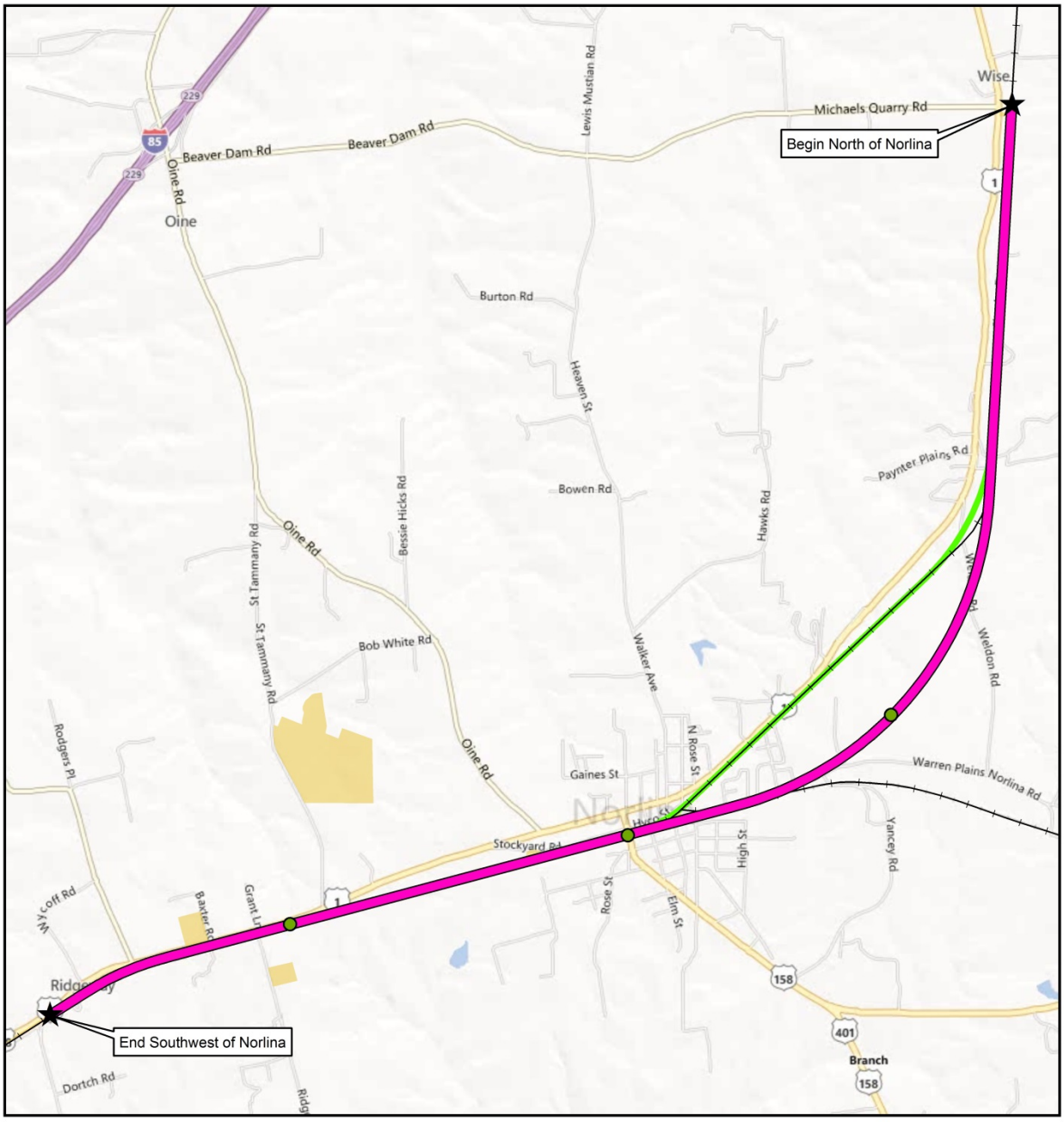
- Washington Street – In the Town of Norlina, a connection between Town and Country Road, and Washington Street has been added to the designs.

In response to comments, several modifications were made to the proposed roadwork for the area around the Ridgeway community (refer to Appendix R, map 102). The changes outlined below were made in coordination with Warren County, Kerr-Tar Council of Governments (the Rural Planning Organization) and the NCDOT Transportation Planning Branch to better serve the needs of both the local community and the county as a whole.

- St. Tammany Road/Ridgeway Warrenton Road - The Project Tier II DEIS designs, which showed closure of the existing Ridgeway Warrenton Road at-grade crossing and a realignment and roadway bridge over the railroad with a connection to St. Tammany Road on the north side of the railroad, have been eliminated. However, the existing at-grade crossing will still be closed under the current designs and traffic will be re-routed less than one half mile to the southwest to a new roadway bridge over the railroad for Ridgeway Drewry Road.
- Ridgeway Drewry Road - A roadway bridge over the railroad for Ridgeway Drewry Road has been added to the designs. The road will be shifted approximately 650 feet to the northeast to cross over US-1 and the railroad on a bridge, and will connect to a new alignment for Axtell Ridgway Road on the south side of the railroad. The existing intersection between US-1 and Ridgeway Drewry Road will be retained and a short section of the old road will be used to provide a connection between US-1 and the new road and bridge.

- Ridgeway Warrenton Road/Ed Petar Road/Axtell Ridgeway Road – The designs shown in the Project Tier II DEIS that were developed to provide a connection between Ridgeway Warrenton Road and Axtel Ridgeway Road have been revised. The new alignment retains connections to those roads on both ends, but is shifted away from the railroad in the middle section to accommodate an intersection with the new Ridgeway Drewry Road.

Figure 2-18



Southeast High Speed Rail, Richmond, VA to Raleigh, NC

SECTION M

- Preferred Rail Alternative NC1 (Length=6.14 miles)
- Other Rail Alternatives from DEIS
- Existing Rail Corridor
- Existing and Proposed Pedestrian Bridges/Underpasses
- Existing and Proposed Bridges/Underpasses
- Historic Resources (Architectural)

0 0.5 1 Miles

N

2.2.20 SECTION N

The section begins southwest of Norlina, NC, at railroad MP S-101 and extends to north of Middleburg, NC, at railroad MP 105, a distance of 3.71 miles for Alternatives NC1 and NC3, which are on common alignment, and 3.77 miles for Alternative NC2 (see Section N map, Figure 2-19). In all of Section N and southward to Raleigh, NC, the CSX S-Line tracks remain in place and there is active freight service. The section is located within both the Roanoke River Basin and the Tar-Pamlico River Basin and includes no major stream crossings. Detailed maps for this section can be found in Appendix R, maps 103-106.

2.2.20.1 SECTION N ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative NC1/NC3 has the following characteristics:

- The design objective is to improve train performance by straightening a series of curves in the railroad ROW beginning near Soul City Boulevard.
- Limiting speed of 110 mph.
- The operability and constructability rating is positive due to a faster design speed compared to Alternative NC2.

Alternative NC2 has the following characteristics:

- The design objective is to improve train performance by straightening the same series of curves in the railroad ROW beginning near Soul City Boulevard, but to a lesser degree than Alternative NC1/NC3, by maximizing use of the existing railroad ROW.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

2.2.20.2 SECTION N PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section N is the common alignment of Alternatives NC1 and NC3. Henceforth, the preferred alternative for this section will be referred to as Alternative NC1. Table ES-5 shows that Alternative NC1 minimizes impacts to streams, prime and important farmlands, and forested uplands compared to Alternative NC2. Alternative NC1 also has fewer residential relocations, fewer potentially impacted noise receptors, and a positive operability and constructability rating. There were no public comments expressing a preference for alternatives in this section.

Alternative NC1 minimizes impacts to streams, prime and important farmlands, and forested uplands. It has fewer residential relocations and potentially impacted noise receptors, and a positive operability and constructability rating.

2.2.20.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- None

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Soul City Boulevard - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of proposed detour routes
- Kimball Road - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of proposed detour routes

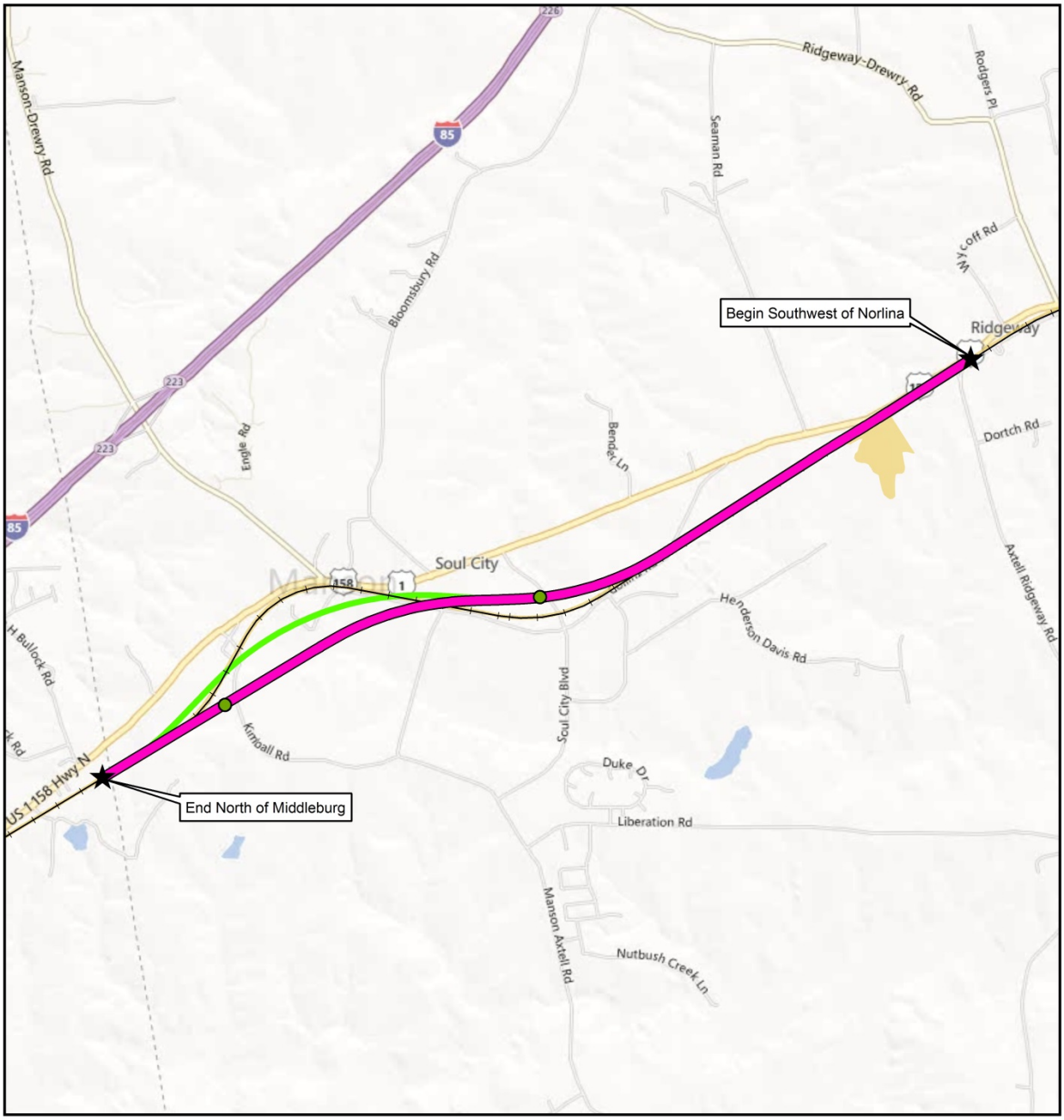
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Axtell Ridgeway Road
- Collins Road, east of Crescent Drive
- Collins Road, west of Manson Axtell Road (close road at railroad located on new location)

2.2.20.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Kimball Road - The designs in the Project Tier II DEIS for the preferred alternative showed that Kimball Road would cross the new railroad alignment on a bridge, and would include a small westward shift in the existing road alignment. In addition, a new access road on the south side of the railroad was designed to intersect Kimball Road approximately 700 feet south of the railroad. The Project Tier II FEIS shows a revision that was developed to allow access to the nearby Manson Baptist Church during construction of the new road and roadway bridge over the railroad.

Figure 2-19


Begin Southwest of Norlina
End North of Middleburg
Soul City
Ridgeway
Ridgeway-Drewry Rd
Manson-Drewry Rd
Bloomsbury Rd
Seaman Rd
Rodgers Pl
Dortch Rd
Axtell Ridgeway Rd
Henderson Davis Rd
Soul City Blvd
Kimball Rd
Duke Dr
Liberation Rd
Manson Axtell Rd
Nutbush Creek Ln
Engle Rd
Bender Ln
H Bullock Rd
US 1158 Hwy N
85
223
158
1
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION N
Preferred Rail Alternative NC1 (Length=3.71 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N

2.2.21 SECTION O

The section begins north of Middleburg, NC, at railroad MP S-105 and extends to the Greystone Quarry north of Henderson, NC, at railroad MP S-110; a distance of 5.09 miles for Alternative NC1, 5.16 miles for Alternative NC2, and 4.70 miles for Alternative NC3 (see Section O map, Figure 2-20). Middleburg is the major population center for this section. The section is located within both the Roanoke River Basin and the Tar-Pamlico River Basin and includes no major stream crossings. Detailed maps for this section can be found in Appendix R, maps 107-111.

2.2.21.1 SECTION O ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative NC1 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- Limiting speed is 90 mph.
- The alignment stays within existing railroad ROW through the Town of Middleburg, then swings east to straighten the large curves south of town.
- The alternative requires ROW from the Holloway Farm historic property, which is located to the east of the large curves south of Middleburg. As a result, Alternative NC1 would result in an adverse effect on the Holloway Farm under Section 106 of the NHPA and would require a Section 4(f) use of the resource.
- The alternative has a faster design speed than Alternative NC2, but a slower design speed than Alternative NC3 and a limiting speed of 90 mph.
- The operability and constructability rating is negative due to a sharper curvature in the railroad alignment, which would likely result in increased long-term maintenance for the rails and train equipment, and a lower speed. This would cause deceleration and acceleration through the curves and lead to increased schedule time and fuel use.

Alternative NC2 has the following characteristics:

- The design objective is also to improve train performance by straightening curves, but to a lesser degree than Alternative NC1. Alternative NC2 is on common alignment with Alternative NC1 through Middleburg and also shifts to the east to straighten the large curves in the existing railroad ROW south of town, but stays closer to the existing railroad ROW than Alternative NC1.
- Similar to Alternative NC1, Alternative NC2 would result in an adverse effect on the Holloway Farm under Section 106 of the NHPA and require a Section 4(f) use of the resource
- Limiting speed is 80 mph.
- The operability and constructability rating is negative due to a sharper curvature in the railroad alignment, which would likely result in increased long-term maintenance for the rails and train equipment, and a lower speed. This would cause deceleration and acceleration through the curves and lead to increased schedule time and fuel use.

Alternative NC3 has the following characteristics:

- The design objectives are to avoid impacts to the Holloway Farm historic property and improve train performance by straightening curves.
- Limiting speed is 110 mph.

- The alternative leaves the existing railroad ROW at the north end of the section, traversing to the east of Middleburg and east of the Holloway Farm historic property, before rejoining the existing railroad ROW just north of the Greystone Quarry.
- The operability and constructability rating is neutral.

2.2.21.2 SECTION O PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

Alternative NC3 minimizes wetland, noise, and vibration impacts and has the fewest residential relocations.

The preferred alternative in Section O is Alternative NC3, which is the Section 4(f) avoidance alternative in this section. Table ES-5 shows that this alternative also minimizes wetland, noise, and vibration impacts, and has the fewest residential relocations. It does have greater stream and riparian buffer impacts, but those impacts will be fully mitigated, and the design work will include coordination with USACE. Alternative NC3 also had greater public support. Seven people indicated a preference for Alternative NC3, three people preferred Alternative NC1, and one person preferred Alternative NC2.

2.2.21.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- None

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Carol Street - roadway bridge over railroad; on-site detour
- Brookston Road - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Greystone Road - roadway bridge over railroad; on-site detour

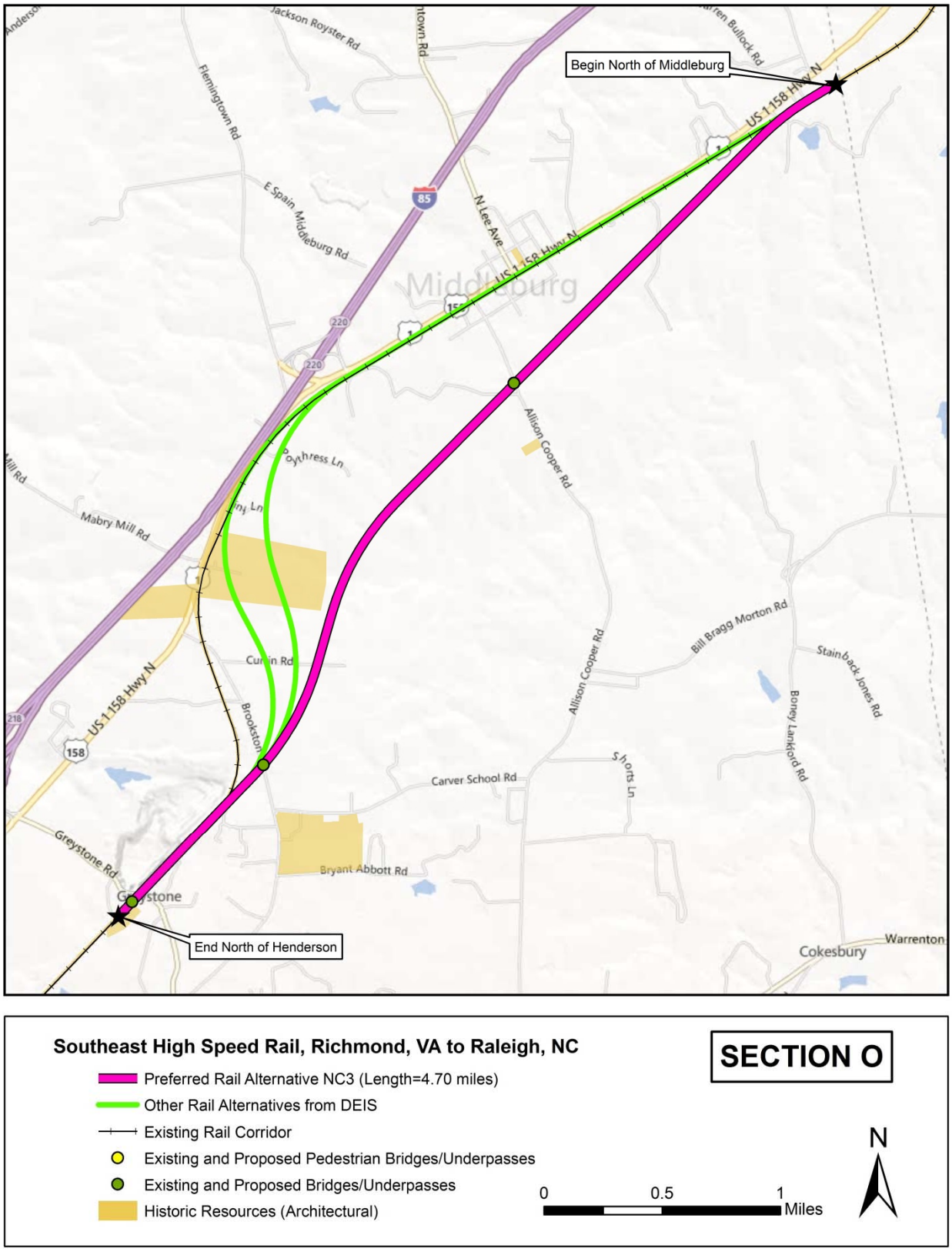
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Currin Road (close at railroad located on new location)

2.2.21.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

No changes were made subsequent to the Project Tier II DEIS.

Figure 2-20


Begin North of Middleburg
End North of Henderson
Middleburg
Greystone
Cokesbury
Warrenton
Jackson Royster Rd
Flemingtown Rd
E Spain Middleburg Rd
N Lee Ave
US 1158 Hwy N
Allison Cooper Rd
Mabry Mill Rd
Curtin Rd
Brookston
Carver School Rd
Bryant Abbott Rd
Greystone Rd
Bill Bragg Morton Rd
Stainback Jones Rd
Barney Lankford Rd
Shorts Ln
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION O
Preferred Rail Alternative NC3 (Length=4.70 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N

2.2.22 SECTION P

The section begins north of Henderson, NC, at railroad MP S-110 and ends north of Kittrell, NC, at railroad MP S-118, a distance of 7.99 miles (see Section P map, Figure 2-21). The City of Henderson is the major population center in this section. The section is located within both the Roanoke River Basin and the Tar-Pamlico River Basin and there are no major river crossings. Detailed maps for this section can be found in Appendix R, maps 111-118.

2.2.22.1 SECTION P ALTERNATIVES EVALUATED IN THE DEIS

All alternatives are on common alignment in this section. Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost.

Alternative NC1/NC2/NC3 has the following characteristics:

- The design objective is to maximize the use of existing railroad ROW through Henderson.
- The limiting speed is 80 mph.
- The operability and constructability rating is neutral.

2.2.22.2 SECTION P PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section P is the common alignment of Alternatives NC1/NC2/NC3. Henceforth, the preferred alternative for this section will be referred to as Alternative NC1.

2.2.22.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- US-1 Bypass (north end) - roadway bridge over railroad
- Charles Street- underpass, railroad bridge over roadway
- US-1 Bypass (south end) - roadway bridge over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Warrenton Road- underpass (road under railroad); on-site detour.
- Main Street - underpass (road under railroad); off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Andrews Avenue - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Peachtree Street - pedestrian underpass (pedestrian pathway under railroad)
- Alexander Avenue - roadway bridge over railroad; construction on new location
- JP Taylor Road - roadway bridge over railroad; on-site detour
- Bear Pond Road - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes

Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Oliver Drive
- Harris Street
- Unnamed crossing south of Crozier Street
- Rock Spring Street

- Montgomery Street
- Winder Street
- Orange Street
- East Spring Street
- Chavasse Avenue
- Miriam Avenue/St. Matthews Street
- Welcome Avenue
- East Minerals Road

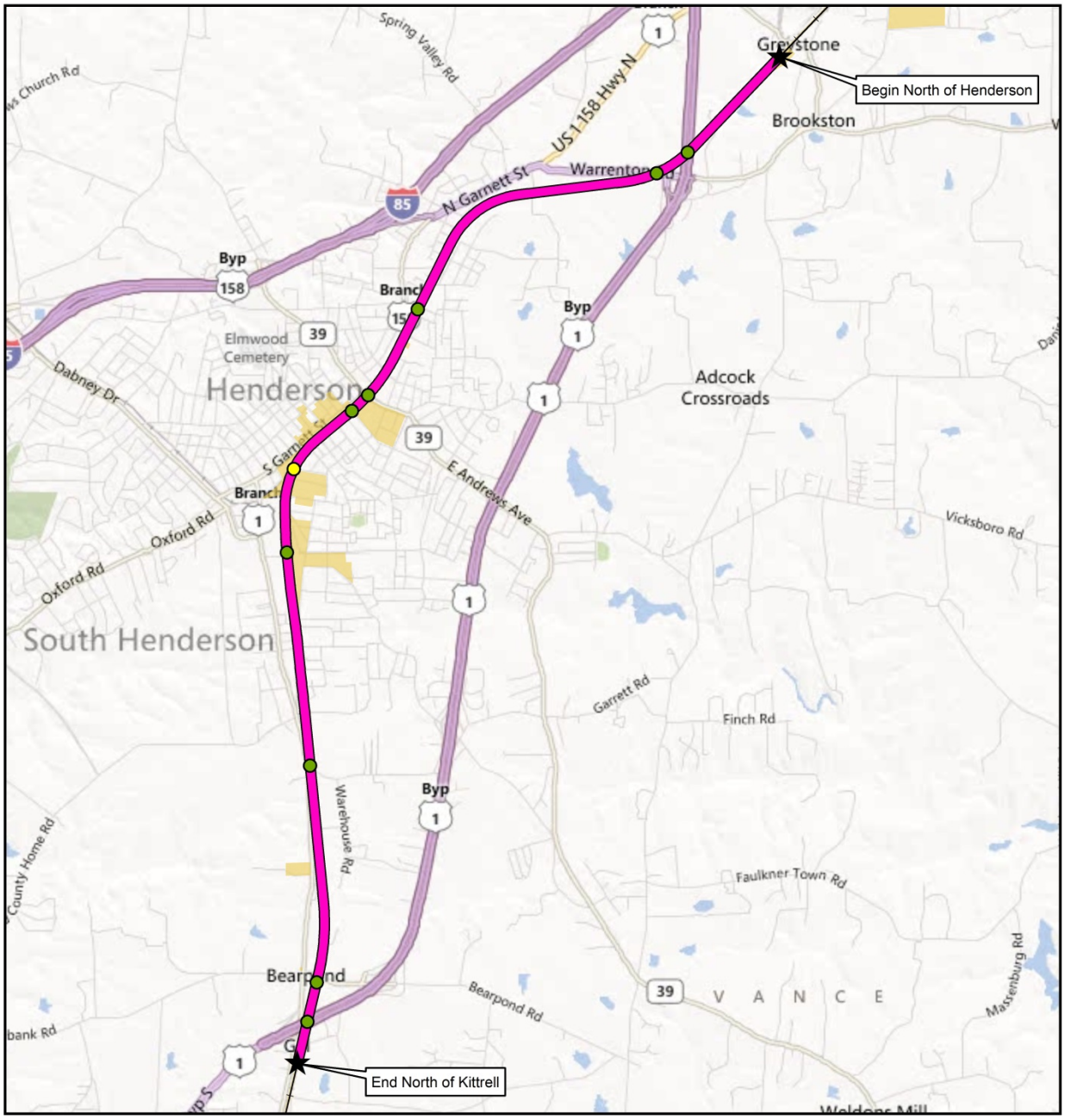
2.2.22.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

In response to comments from the City of Henderson on the Project Tier II DEIS, several changes were made to the road work designs and are presented in the Richmond to Raleigh Tier II FEIS. The revisions are to road work only, and did not affect selection of the preferred railroad alternative. A Project update meeting was held in Henderson, on September 11, 2012, to provide the public an opportunity to learn about the road work revisions and provide comments. Attendance at the meeting was 110 and 16 written comments were received; refer to Appendix B for a summary of comments. No changes were made to the revisions subsequent to the Project update meeting. The revisions presented in the Project Tier II FEIS are outlined below.

- New roundabout in Downtown Henderson - In response to comments on the Project Tier II DEIS from the public and from the City of Henderson, a new roundabout was developed for the downtown area west of the railroad tracks. As was shown for the Project Tier II DEIS, an underpass will be constructed for Main Street (the railroad will cross over the road on a bridge). However, with the revision, Main Street and N. Beckford Drive will connect to the roundabout and provide east-west connectivity; N. Chestnut Street and N. Garnett Street will connect to the roundabout and provide north-south connectivity. In addition, the new designs eliminate the need for the revisions to John's Street that were shown in the Project Tier II DEIS.
- Andrews Avenue - The designs were revised on the west side of the railroad such that the proposed retaining walls were shortened and associated new access roads on the north side of Andrews Avenue were eliminated. Designs in this area are constrained by the close proximity of the surrounding development situated on small lots. The longer retaining walls shown in the Project Tier II DEIS protected more properties from fill dirt associated with the approach to the roadway bridge over the railroad; however, driveway access along Andrews Avenue was not retained. Instead, alternative new access from the rear of the properties was included for the properties on the north side of Andrews Avenue. Analysis subsequent to the Project Tier II DEIS showed that similar new rear access will need to be developed for the properties on the south side of Andrews Avenue. Based on the additional costs associated with constructing the longer retaining walls and the potentially unfavorable property impacts to the properties on both sides of Andrews Avenue that the retaining walls were attempting to protect, it was determined that the retraining walls should be shortened and the residential properties assumed to be potential relocations. Additionally, in response to comments from the City of Henderson, an eastbound left turn lane was added to Andrews Avenue at Rowland Street.
- Alexander Avenue - In response to comments from the City and from the public, the Alexander Avenue design was revised to allow Nicholas Street to connect on the east side of the railroad, thereby retaining existing north-south connectivity.

- J P Taylor Road - In response to comments on the Project Tier II DEIS received from the City and nearby businesses regarding impacts to the existing road network, revisions were made to the J P Taylor Road design and several other nearby roads. The alignment for JP Taylor Road was shifted to provide a less expensive way for traffic to be maintained during construction. Nicholas Street on the east side and parallel to the railroad was extended southward to connect to J P Taylor Road across from Warehouse Road, providing north-south connectivity. These new designs eliminated the need for the King Street and Welcome Avenue extensions proposed in the Project Tier II DEIS.
- Raleigh Road at Belmont Drive and Belmont Drive - In response to comments from the City, these roads were widened to accommodate turn lanes.
- Raleigh Road at Bear Pond Road - Raleigh Road was widened to accommodate turn lanes; this design was shown on the Project Tier II DEIS public hearing maps, but did not appear in the Project Tier II DEIS Appendix R Map Book.

Figure 2-21



Southeast High Speed Rail, Richmond, VA to Raleigh, NC

SECTION P

- Preferred Rail Alternative NC1* (Length=7.99 miles)
- Existing Rail Corridor
- Existing and Proposed Pedestrian Bridges/Underpasses
- Existing and Proposed Bridges/Underpasses
- Historic Resources (Architectural)

0 0.5 1 Miles

N

* All alternatives were common in this section

2.2.23 SECTION Q

The section begins north of Kittrell, NC, at railroad MP S-118 and extends to the Tar River at railroad MP S-125.75, a distance of 7.70 miles for Alternatives NC1 and NC3, which are on common alignment, and 7.73 miles for Alternative NC2 (see Section Q map, Figure 2-22). The Town of Kittrell is the major population center in this section. The section is located in the Tar-Pamlico River Basin and includes the Tar River crossing. Detailed maps for this section can be found in Appendix R, maps 118-124.

2.2.23.1 SECTION Q ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative NC1/NC3 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- The alternative is on common alignment with Alternative NC2, except south of Kittrell, where the alignment shifts east to flatten a curve in the existing railroad ROW.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

Alternative NC2 has the following characteristics:

- The design objective is to maximize the use of existing railroad ROW.
- The alternative is on common alignment with Alternative NC1/NC3, except south of Kittrell, where alignment follows the curve of the existing railroad, compared to Alternative NC1/NC3, which shifts eastward to flatten the curve.
- Limiting speed is 90 mph.
- The operability and constructability rating is negative due to a sharper curvature in the railroad alignment, which would likely result in increased long-term maintenance for the rails and train equipment, and a lower speed. This would cause deceleration and acceleration through the curves and lead to increased schedule time and fuel use.

2.2.23.2 SECTION Q PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section Q is the common alignment of Alternatives NC1 and NC3. Henceforth, the preferred alternative for this section will be referred to as Alternative NC1.

Alternative NC1 has greater impacts to important farmland and forested uplands and more residential relocations. Based on the lower limiting speed and negative rating for operability and constructability for Alternative NC2, Alternative NC1 is the preferred alternative.

Table ES-5 shows that Alternative NC1 has slightly greater impacts to prime and important farmland and forested uplands, and three more residential relocations compared to Alternative NC2, but otherwise the impacts are comparable between alternatives. Based on the lower limiting speed and negative rating for operability and constructability for Alternative NC2, Alternative NC1 is the preferred alternative. There were no public comments expressing a preference for alternatives in this section.

2.2.23.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- S. Chavis Road - underpass, railroad over roadway

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Wildlife Lane - underpass (road under railroad); construction on new location
- Edwards Road (Extension) - underpass (road under railroad); construction on new location
- McClannahan Street/To Be Named - roadway bridge over railroad; construction on new location
- Oak Ridge Church Road - underpass (road under railroad); on-site detour

Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Peter Gill Road
- Chavis Road
- Main Street
- Beechtree Trail

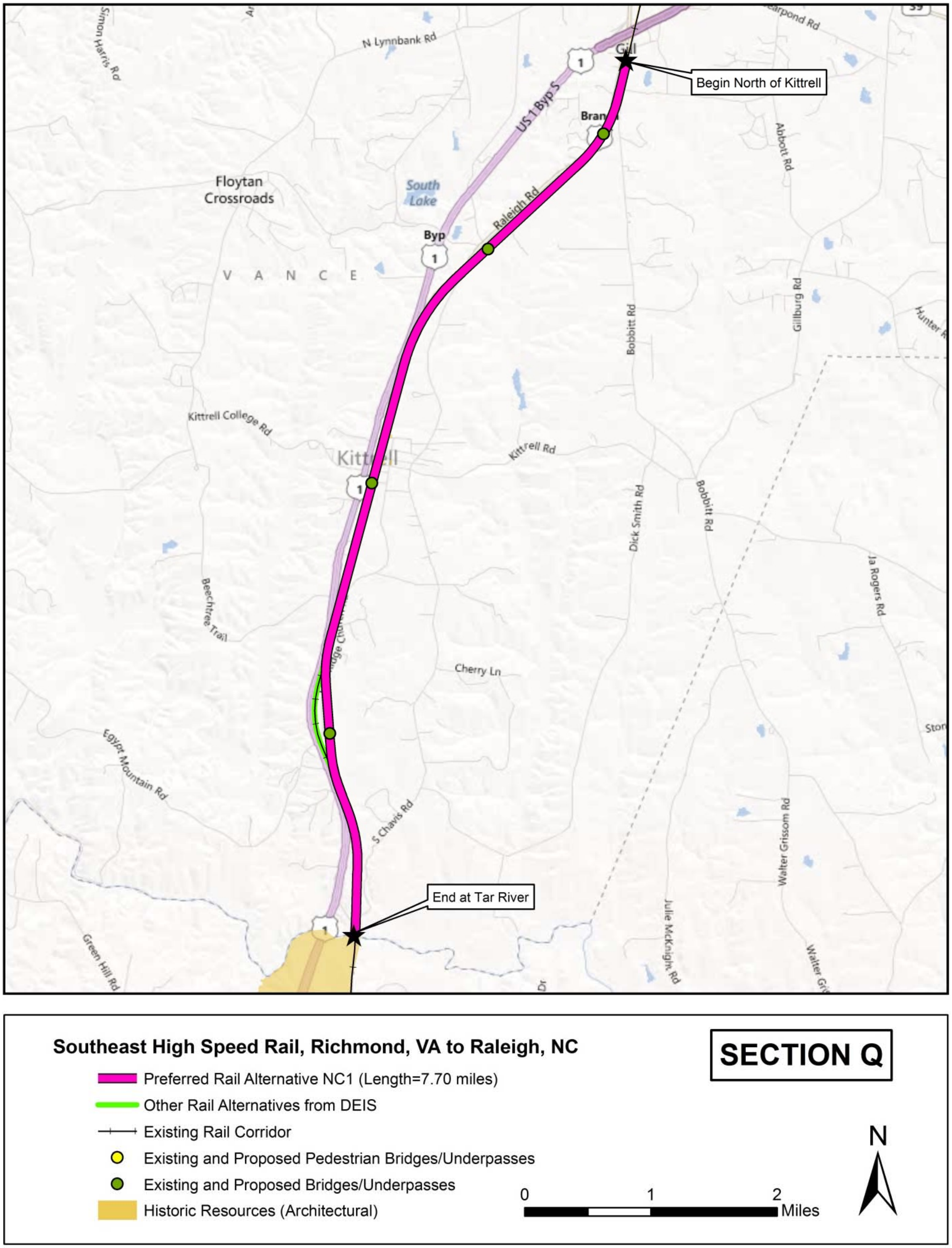
2.2.23.4 RIVER AND MAJOR CREEK BRIDGES

Tar River - Under Preferred Alternative NC1 the Project intends to utilize the piers and substructure of the existing single-track bridge, as well as the superstructure (girders, and decking). There is active freight service in this location, and the existing concrete ballast single-track bridge built in 1975 is in good condition. There will be no impact to the historic Raleigh and Gaston Railroad bridge piers which are located in close proximity to the existing railroad bridge, but are no longer in use.

2.2.23.5 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Extension of North Chavis Road (north of Kittrell) - In response to a property owner request, the public road will terminate approximately 250 feet south of the location presented in the Project Tier II DEIS; private driveway access will be determined during ROW acquisition.
- Downtown Kittrell - Based on a request from the Town of Kittrell, the design shown in the Project Tier II DEIS for an extension of Church Street and roadway bridge over the railroad, and realignment of Williams Road, was eliminated and replaced with a design for a roadway bridge over the railroad further south at a realigned McClannahan Street. The new designs call for the road to be extended south to Kittrell Vance Avenue on the west side of the railroad, and extended north to Main Street on the east side of the railroad. In addition, Raleigh Road has been widened to accommodate turn lanes at the intersection with the new McClannahan Street extension.

Figure 2-22


Begin North of Kittrell
End at Tar River
Floytan Crossroads
South Lake
VANCE
Kittrell
N Lynnbank Rd
US 1 Byp S
Raleigh Rd
Kittrell College Rd
Kittrell Rd
Bobbitt Rd
Dick Smith Rd
Gillburg Rd
Abbott Rd
Cherry Ln
S Chavis Rd
Egypt Mountain Rd
Beechtree Trail
Green Hill Rd
Walter Grissom Rd
Julie McKnight Rd
Simon Harris Rd
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION Q
Preferred Rail Alternative NC1 (Length=7.70 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
1
2
Miles
N

2.2.24 SECTION R

The section begins at the Tar River at railroad MP S-125.75 and extends to north of Franklinton, NC, at railroad MP S-129, a distance of 3.21 miles for Alternatives NC1 and NC3, which are on common alignment, and 3.23 miles for Alternative NC2 (see Section R map Figure 2-23). The section is located in the Tar-Pamlico River Basin and includes the Tar River crossing. Detailed maps for this section can be found in Appendix R, maps 124-126.

2.2.24.1 SECTION R ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative NC1/NC3 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- The alignment follows a straighter line east of the curve in the existing railroad ROW near Winston Street compared to Alternative NC2.
- Limiting speed is 110 mph.
- The operability and constructability rating is positive.

Alternative NC2 has the following characteristics:

- The design objective is to maximize the use of existing railroad ROW.
- The alignment also straightens the curve in the railroad near Winston Street, but follows the existing railroad ROW more closely.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

2.2.24.2 SECTION R PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The recommendation is based on the more favorable operability and constructability rating, coupled with a similar degree of impacts to the environment

The preferred alternative in Section R is the common alignment of Alternatives NC1 and NC3. Henceforth, the preferred alternative for this section will be referred to as Alternative NC1. The recommendation is based on the more favorable operability and constructability rating, coupled with a similar degree of impacts to the human and natural environment compared to Alternative NC2. As shown in Table ES-5, Alternative NC1 will impact approximately 500 fewer feet of streams than Alternative NC2, but will impact more than 10 acres of additional forested uplands and prime and important farmland. There was no difference in public support between alternatives.

It should be noted that Table ES-5 shows no residential relocations for NC1. However, in straightening the existing railroad curve, the railroad alignment shown in the Project Tier II DEIS crossed properties on Cornerstone Drive in a subdivision that was developed after the ROW and relocation reports for the Project Tier II DEIS were completed in 2008. As described below, these impacts were avoided by a shift in the railroad alignment near Cornerstone Drive that was developed subsequent to the Project Tier II DEIS.

The rail alignment crossed properties on Cornerstone Drive. These impacts were avoided by a shift in the rail alignment near Cornerstone Drive.

2.2.24.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- None

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- To be Named (new road located approximately 0.3 miles north of Eric Medlin Road, connecting US-1 to Montgomery Road) - roadway bridge over railroad; construction on new location

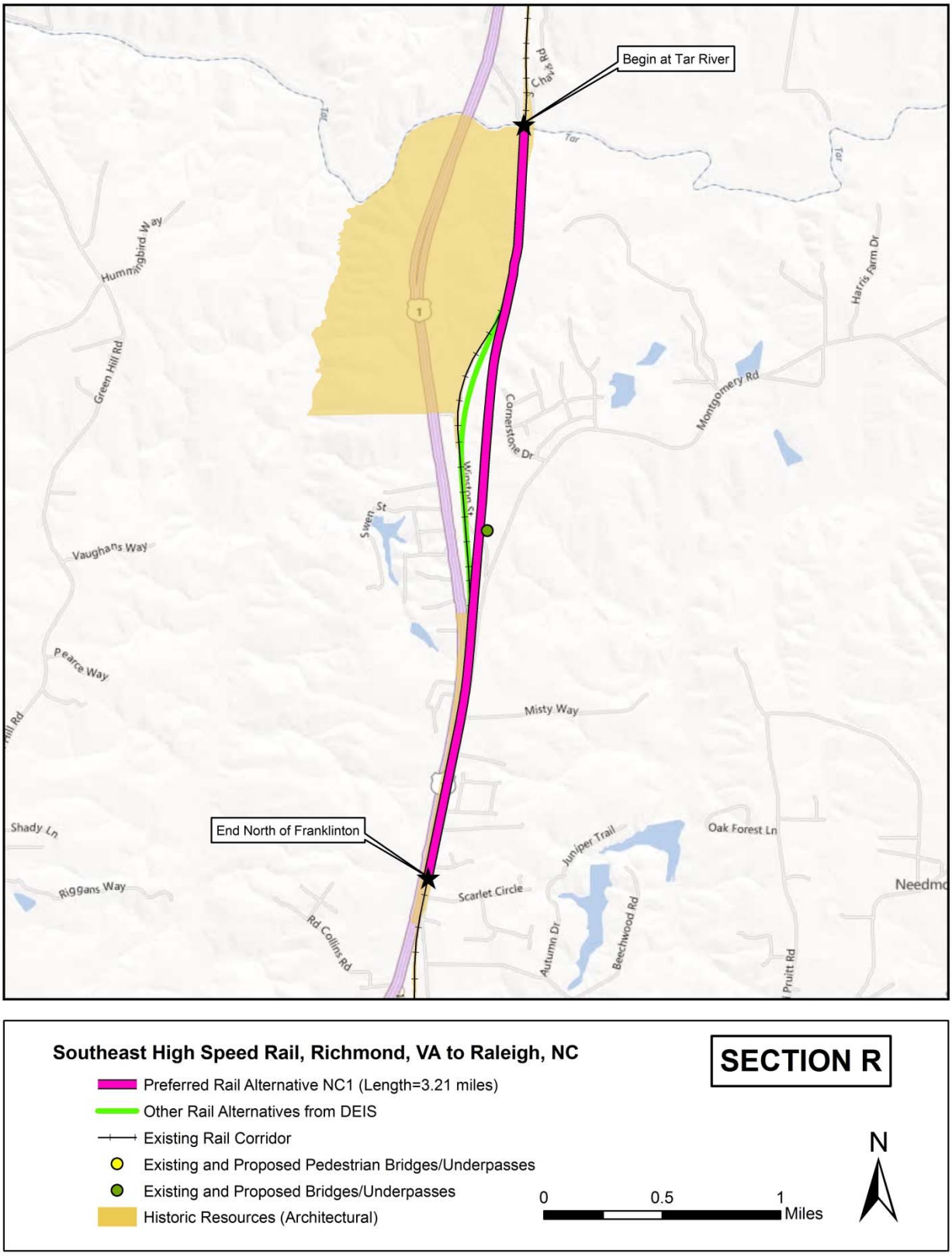
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Winston Street (close at railroad located on new location)
- Eric Medlin Road

2.2.24.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Rail Alignment near Cornerstone Drive - The railroad alignment was shifted slightly westward to reduce impacts to a residential development that was constructed after the designs presented in the Project Tier II DEIS had been developed.
- To be named (new road located north of Eric Medlin Road) - The bridge location was shifted to the west due to the revised railroad alignment described above.

Figure 2-23


Begin at Tar River
End North of Franklinton
Tar
Hummingbird Way
Green Hill Rd
Cornerstone Dr
Montgomery Rd
Harris Farm Dr
Swen St
Vaughans Way
Pearce Way
Misty Way
Shady Ln
Riggans Way
Scarlet Circle
Juniper Trail
Oak Forest Ln
Autumn Dr
Beechwood Rd
Pruitt Rd
Rd Collins Rd
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION R
Preferred Rail Alternative NC1 (Length=3.21 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N

2.2.25 SECTION S

The section begins north of Franklinton, NC, at railroad MP S-129 and extends to north of Youngsville, NC, at railroad MP S-136, a distance of 6.88 miles for Alternatives NC1 and NC3, which are on common alignment, and 6.71 miles for Alternative NC2 (see Section S map, Figure 2-24). The Town of Franklinton is the major population center of this section. The existing railroad ROW follows a series of reverse (i.e., "S") curves south of Franklinton. The section is located in the Tar-Pamlico River Basin and includes a crossing of Cedar Creek. Detailed maps for this section can be found in Appendix R, maps 126-132.

2.2.25.1 SECTION S ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative NC1/NC3 has the following characteristics:

- The design objective is to improve train performance by straightening curves throughout the section
- South of Franklinton, the alignment flattens a series of reverse (i.e., "S") curves and crosses Cedar Creek on a new bridge east of the existing railroad bridge.
- Limiting speed is 95 mph.
- The operability and constructability rating is neutral.

Alternative NC2 has the following characteristics:

- The design objectives are to improve train performance by straightening curves throughout the section, utilizing a faster design speed than Alternatives NC1/NC3.
- The alternative is on common alignment with Alternative NC1/NC3 through the Town of Franklinton, then south of town the alignment provides an alternative approach to flattening a series of reverse (i.e., "S") curves compared to Alternative NC1/NC3, and crosses Cedar Creek on a new bridge on the other side (west side) of the existing bridge.
- Limiting speed is 95 mph.
- The operability and constructability rating is neutral.

2.2.25.2 SECTION S PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section S is the common alignment of Alternatives NC1 and NC3. Henceforth, the preferred alternative for this section will be referred to as Alternative NC1. The recommendation is based on strong public support (267 for Alternative NC1 compared to 3 for Alternative NC2) and a smaller impact to streams. Table ES-5 shows that overall the alternatives have a similar degree of impacts to the human and natural environment.

The recommendation is based on public support and a smaller impact to streams.

2.2.25.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- Green Street- replace existing railroad bridge over roadway; off-site detour, refer to Appendix G for a map of temporary proposed detour routes

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- To Be Named (new road on new location north of Franklinton Town Limits) - underpass (road under railroad); construction on new location
- Mason Street - pedestrian underpass with ramp and stair access (pedestrian pathway under railroad)
- College Street - pedestrian underpass (pedestrian pathway under railroad)
- New pedestrian crossing near Hawkins Street - pedestrian underpass (pedestrian pathway under railroad)
- Cedar Creek Road - roadway bridge over railroad; on-site detour
- Bert Winston Road - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of proposed roads
- Future NC 96 Bypass - roadway bridge over railroad; construction on new location

Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Pearce Street
- Joyner Street
- Mason Street
- College Street
- Hawkins Street
- Northbrook Drive (close at railroad located on new location)

2.2.25.4 RIVER AND MAJOR CREEK BRIDGES

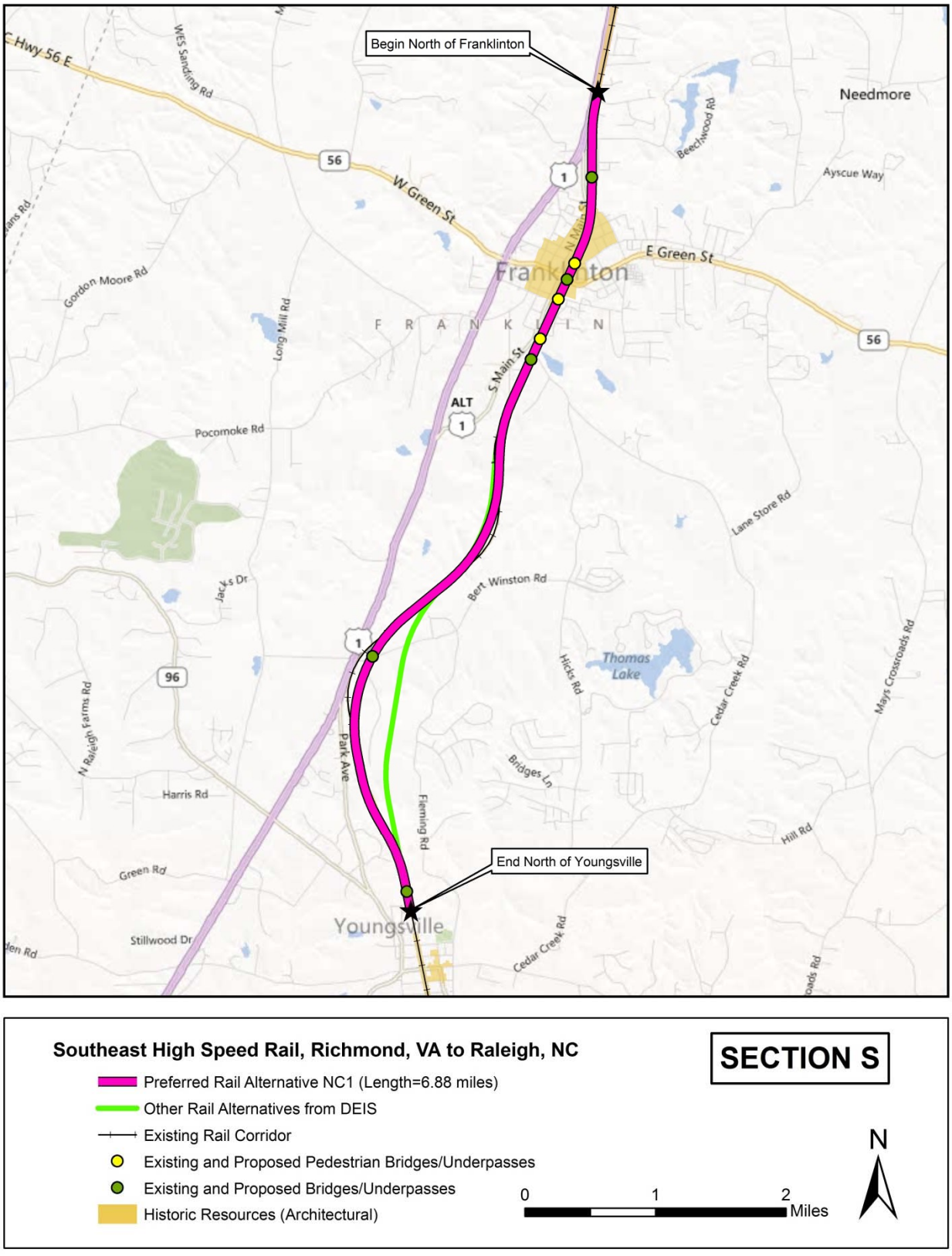
Cedar Creek – There is active freight service in this location, however all alternatives presented in the Project Tier II DEIS require construction of a new roadway bridge over the creek in order to straighten a series of "s" curves in the existing railroad alignment.

Under Preferred Alternative NC1, the Project will require construction of a new bridge on new piers east of the existing bridge. The historic Cedar Creek Railroad Bridge and Raleigh and Gaston Railroad bridge piers lie within the existing railroad ROW, but will not be impacted by the proposed Project alternatives.

2.2.25.5 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Tanyard Street - In response to comments from the public, the proposed improvements to Tanyard Street were removed from the Project designs. An alternative design was developed for a north-south connection between East Green Street and East College Street near the eastern boundary of the Sterling Mill historic resource.
- Mason Street - As a result of continued coordination with the Town of Franklinton, and the Capital Area Metropolitan Planning Organization (CAMPO), and in consultation with the North Carolina State Historic Preservation Office (NC-HPO), the design for a pedestrian bridge with towers that was shown in the Project Tier II DEIS was revised to provide a pedestrian underpass with ramps and stairs.
- Northbrook Drive- In response to new information, the alignment was shifted to reduce impacts to the existing industrial development on Northbrook Drive.
- Future NC 96 Bypass - The alignment of this new location road was shortened in conjunction with revisions made to Cross Street, described below in Section T.

Figure 2-24


Begin North of Franklinton
End North of Youngsville
Needmore
Franklinton
Youngsville
Thomas Lake
W Green St
E Green St
S Main St
N Main St
Pocomoke Rd
Bert Winston Rd
Lane Store Rd
Hicks Rd
Cedar Creek Rd
Park Ave
Fleming Rd
Bridges Ln
Harris Rd
Green Rd
Stillwood Dr
Hill Rd
Mays Crossroads Rd
Gordon Moore Rd
Long Mill Rd
N Raleigh Farms Rd
Beechwood Rd
Ayscue Way
Jacks Dr
56
96
1
ALT
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION S
Preferred Rail Alternative NC1 (Length=6.88 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
1
2
Miles
N

2.2.26 SECTION T

The section begins north of Youngsville, NC, at railroad MP S-136 and extends to north of Wake Forest, NC, at railroad MP S-139, a distance of 2.83 miles for Alternatives NC1 and NC3, which are on common alignment, and 2.96 miles for Alternative NC2 (see Section T map, Figure 2-25). The Town of Youngsville is the major population center of this section. The section is located in both the Tar-Pamlico River Basin and the Neuse River Basin, and includes no major stream crossings. Detailed maps for this section can be found in Appendix R, maps 132-134.

2.2.26.1 SECTION T ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives.

Alternative NC1/NC3 has the following characteristics:

- The design objective is to improve train performance by straightening curves.
- The alignment follows the existing railroad ROW through the center of Youngsville, NC, where the grade of the railroad would be lowered through town. South of town, the alignment flattens the wide curve of the existing railroad ROW near the industrial development at Nomaco Drive by following a straighter line on new ROW to the west.
- Limiting speed is 110 mph.
- The operability and constructability rating is neutral.

Alternative NC2 has the following characteristics:

- The design objectives are to improve train performance by straightening curves, but use more existing railroad ROW than Alternatives NC1/NC3.
- The alternative is on common alignment with Alternatives NC1/NC3 through the center of Youngsville where the railroad grade would be lowered; south of town the alignment provides some improvement to the wide curve in the existing railroad ROW, but stays more closely aligned with the existing rail.
- Limiting speed is 95 mph.
- The operability and constructability rating is negative due to a sharper curvature in the railroad alignment, which would likely result in increased long-term maintenance for the rails and train equipment, and a lower speed. This would cause deceleration and acceleration through the curves and lead to increased schedule time and fuel use.

2.2.26.2 SECTION T PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

Alternative NC2 has slightly fewer impacts to streams, riparian buffers, wetlands, farmland, and forested uplands.

The preferred alternative in Section T is the common alignment of Alternatives NC1 and NC3. Henceforth, the preferred alternative for this section will be referred to as Alternative NC1.

Alternative NC2 has a lower limiting speed and a negative rating for operability and constructability. Alternative NC1 is the preferred alternative.

Table ES-5 shows that Alternative NC2 has slightly fewer impacts to streams, riparian buffers, wetlands, farmland and forested uplands than Alternative NC1. However, Alternative NC2 has a lower limiting speed and a negative rating for operability and constructability. Based upon these considerations, Alternative NC1 is the preferred alternative. It should be noted that the greater stream and wetland impacts for Alternative NC1 (approximately 300 feet of stream and less than 0.1 acre of wetlands) are not significant in light of the entire Project and will be fully mitigated. Further, there would likely be 100 feet more stream impacts associated with Alternative NC2 as a result of a railroad detour route required during construction, so the effective difference in stream impacts is closer to 200 feet. Alternative NC1 also had greater public support: three people indicated a preference for NC1, while one person preferred NC2.

2.2.26.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- None

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Franklin Street Extension - pedestrian bridge with ramp access over rail
- Main Street - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Pine Street - pedestrian bridge over railroad with ramp access

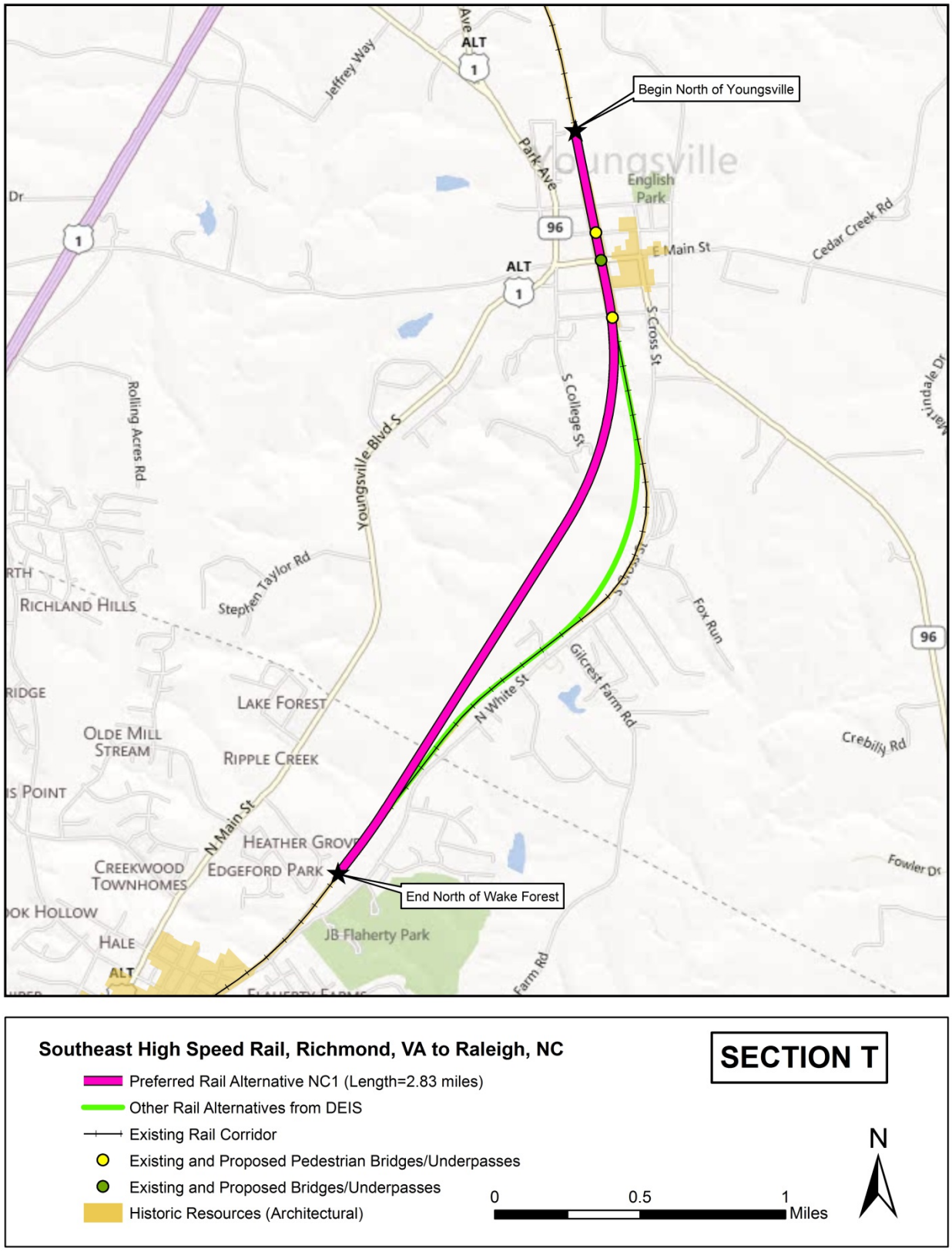
Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Winston Street
- Pine Street

2.2.26.4 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

- Cross Street - In response to comments from the public and from the Town of Youngsville, the improvements to Nassau Street shown in the Project Tier II DEIS have been eliminated. Instead, Cross Street will be extended northward to intersect the Future NC 96 Bypass alignment, and will be used for the detour route during construction of the Main Street roadway bridge over the railroad.
- Pine Street - The Project Tier II DEIS showed a closure of the at-grade crossing at Pine Street. In response to comments from the public and from the Town of Youngsville, a pedestrian bridge with ramps has been added to the designs at this location.

Figure 2-25


Begin North of Youngsville
End North of Wake Forest
Youngsville
English Park
E Main St
Park Ave
Cedar Creek Rd
S College St
S Cross St
Youngsville Blvd S
Rolling Acres Rd
Stephen Taylor Rd
Richland Hills
Lake Forest
Olde Mill Stream
Ripple Creek
N Main St
Heather Grove
Edgeford Park
Creekwood Townhomes
Hale
JB Flaherty Park
N White St
Gilcrest Farm Rd
Fox Run
Crebilly Rd
Fowler Dr
Jeffrey Way
ALT
1
96
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION T
Preferred Rail Alternative NC1 (Length=2.83 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
0.5
1
Miles
N

2.2.27 SECTION U

The section begins north of Wake Forest, NC, at railroad MP S-139 and extends to north Raleigh, NC (near Gresham Lake), at railroad MP S-148, a distance of 8.88 miles for Alternative NC1, 8.89 miles for Alternative NC2, and 8.88 miles for Alternative NC3 (see Section U map, Figure 2-26). Wake Forest is the major population center of this section, but the section also includes a populated area of North Raleigh. The section is located in the Neuse River Basin and includes a crossing of the Neuse River. Detailed maps for this section can be found in Appendix R, maps 135-142.

2.2.27.1 SECTION U ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives. The alternatives are on common alignment through Downtown Wake Forest, primarily on existing railroad ROW.

South of downtown the existing railroad follows a series of reverse (i.e., "S") curves. All three alternatives improve train performance by straightening these curves; however, they differ in the way they impact dual constraints posed by the Thales Academy, a one-building private K-12 school, to the east, and baseball fields associated with The Factory, an extensive private multi-sports complex, to the west.

Alternative NC1 has the following characteristics:

- The design objectives are to improve train performance by straightening curves while minimizing impacts to the private baseball fields to the greatest extent possible (i.e., provide the needed reduction in railroad curvature but without fully avoiding impacts to the private school).
- Limiting speed is 85 mph.
- The operability and constructability rating is neutral.

Alternative NC2 has the following characteristics:

- The design objectives are to improve train performance by straightening curves while minimizing impacts to both the private school and the private baseball fields (requiring ROW from both properties).
- Limiting speed is 80 mph.
- The operability and constructability rating is negative due to a sharper curvature in the railroad alignment, which would likely result in increased long-term maintenance for the rails and train equipment, and a lower speed. This would cause deceleration and acceleration through the curves and lead to increased schedule time and fuel use.

Alternative NC3 has the following characteristics:

- The design objectives are to improve train performance by straightening curves and to avoid impacts to the private school to the greatest extent possible, but allow greater impacts to the private baseball fields compared to Alternative NC2.
- Limiting speed is 85 mph.
- The operability and constructability rating is neutral.

2.2.27.2 SECTION U PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section U is Alternative NC1 based primarily on balancing the degree of impacts to The Factory and the Thales Academy private school. While all three

alternatives have some degree of impact on the baseball complex, Alternative NC1 will be least harmful to its operation. Although The Factory is a private facility, its construction costs were defrayed by a grant from Wake County, NC, in recognition of the financial contributions of visitors attending annual tournaments. The facility is required to host baseball and softball tournaments throughout each year as a condition of the grant. Additionally, Alternative NC1 will avoid impacts to a large planned apartment complex located along Rogers Road. It is assumed the Thales Academy will be able to relocate within the community; no comments were received following the Project Tier II DEIS public hearings from the Town of Wake Forest, the school, or the public requesting that the Project avoid impacts to the school.

The preferred alternative is Alternative NC1, based on balancing the impacts to The Factory and the Thales Academy private school.

Table ES-5 shows that, overall, the three alternatives have a similar level of impacts to the natural and human environment. Although Alternative NC2 minimizes impacts to streams (by approximately 460 feet), as well as to riparian buffers, the impacts for Alternative NC1 are not significant in light of the entire Project and will be fully mitigated. Alternative NC1 also has a higher limiting speed and operability and constructability rating compared to Alternative NC2 (and the same as Alternative NC3). There were five public comments on the Project Tier II DEIS that indicated a preference for an alternative in this section: two favored Alternative NC1 and three favored Alternative NC2.

Comments about the preferred alternative were received at a Project update meeting that was held on May 15, 2012, to provide the public an opportunity to learn about revisions that had been made to road work in Section U subsequent to the Project Tier II DEIS. Eleven people were opposed to impacts to Thales Academy brought about by NC1, while four comments were provided in support of NC1. The meeting is described in greater detail below in 2.2.27.5.

2.2.27.3 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- Roosevelt Avenue- underpass, railroad over roadway
- NC 98 Bypass – roadway bridge over railroad
- Capital Boulevard/US-1 – roadway bridge over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Pedestrian Crossing near Cedar Avenue - pedestrian bridge over railroad with ramp access
- Elm Avenue - pedestrian bridge over railroad
- Holding Avenue - underpass (road under railroad); off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Rogers Road - roadway bridge over railroad; on-site detour
- Ligon Mill Road - roadway bridge over railroad; on-site detour
- Durant Road - roadway bridge over railroad; on-site detour

Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Brick Street
- Elm Avenue

- Friendship Chapel Road
- Seawell Drive

2.2.27.4 RIVER AND MAJOR CREEK BRIDGES

Neuse River - There is active freight service in this location, and the existing single-track bridge with concrete ballast deck built in the early 1970s is in good condition. Under Preferred Alternative NC1, the Project intends to utilize the piers and substructure of the existing bridge, as well as the superstructure (girders and decking). The proposed work will not impact the historic Raleigh and Gaston Railroad bridge piers which are located in close proximity to the existing Neuse River railroad bridge, but are no longer in use.

2.2.27.5 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

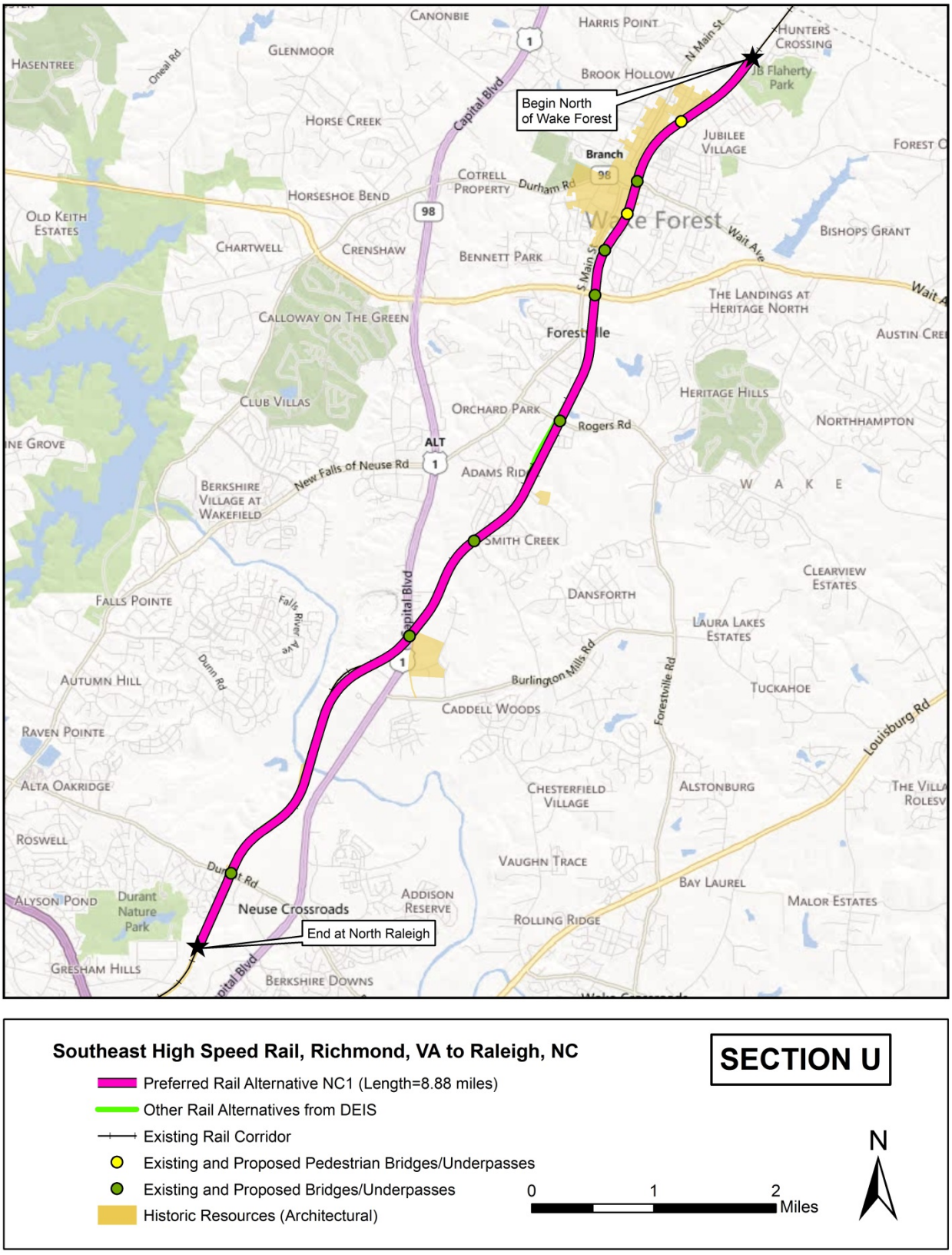
A Project update meeting was held in North Raleigh, on May 15, 2012, to provide the public an opportunity to learn about revisions that had been made to road work in Wake Forest and North Raleigh subsequent to the Project Tier II DEIS, and to provide comments. Attendance at the meeting was 166, and 49 written comments were received. Refer to Appendix B for a summary of the meeting. All of the design changes discussed below were presented at the Project update meeting, except for Elm Avenue in Wake Forest where subsequent design changes were made in response to comments provided at the meeting.

- Elm Avenue - The area around Elm Avenue presents several design constraints including topography, dense development, and the surrounding Downtown Wake Forest Historic District. The Project Tier II DEIS called for the existing at-grade crossing at Elm Avenue to be closed. Comments on the Project Tier II DEIS from the public and the Town of Wake Forest indicated a strong desire to maintain access across the railroad at Elm Avenue, if not vehicular, at least pedestrian. This led to the design of a pedestrian underpass, developed in coordination with the Town and the NC-HPO. The new design also included development of alternative access for properties on the northwest side that will lose the existing illegal access off of Elm Avenue along Railroad Street which lies within the railroad ROW. The new designs were presented at the May 2012 Project update meeting. Strong opposition to the property impacts associated with the designs led to their elimination. Following the update meeting, additional coordination with the Town and the NC-HPO led to the development of a design for a pedestrian bridge with stairs. Additional design and analysis is needed to coordinate the implementation of an Americans with Disabilities Act (ADA) compliant pedestrian crossing of the railroad in this location. The Project Team will coordinate the designs and selected access alternatives (e.g., elevators, ramps, or tunnel) with the Town of Wake Forest and NC-HPO (regarding potential impacts to the Downtown Wake Forest Historic District). Refer to the Project Commitments for additional information.
  As part of the consultation with the NC-HPO, it was determined that although the Project will not necessarily prevent access with the pedestrian bridge nor require enforcement of the railroad ROW, loss of access to Railroad Street is a foreseeable consequence of the Project ; therefore, the Project will need to address access to Railroad Street. The pedestrian bridge and associated new access to the properties on Railroad Street are included in the Project designs.
- Rogers Road – The designs have been revised to show a connection to Rogers Road for Grandmark Street and Heritage Brand Road.
- Steeple Run Drive - In response to requests from property owners, the road was redesigned. The road alignment was shifted westward, closer to the railroad to minimize

property impacts and minimize impacts to a family cemetery. Adjustments to property access at the northern end will be handled during the ROW phase of the Project.

- New Access from Ligon Mill Road into the Smith Creek Neighborhood - In response to public comments on the Project Tier II DEIS, an alternative design for access into the neighborhood was developed.
- Rail Alignment South of the Neuse River - A slight shift in the railroad alignment was made to ensure adequate industrial access.
- Durant Road - In response to comments from the public and local officials, a revised bridge and road alignment was designed for this location. The road alignment and roadway bridge over the railroad has been shifted to the north, away from the residential and commercial development on the south side of Durant Road. This northward shift will take the road alignment through City of Raleigh property where Raleigh Fire Station No. 22 is located, requiring the fire station to be relocated. This design revision has been coordinated with the City of Raleigh.

Figure 2-26


Begin North of Wake Forest
End at North Raleigh
Canonbie
Harris Point
Hunters Crossing
Glenmoor
Hasentree
Oneal Rd
Brook Hollow
JB Flaherty Park
N Main St
Capital Blvd
Horse Creek
Jubilee Village
Branch
Cotrell Property
Durham Rd
Horseshoe Bend
Old Keith Estates
Chartwell
Crenshaw
Bennett Park
S Main St
Wait Ave
Bishops Grant
The Landings at Heritage North
Calloway on The Green
Austin Creek
Club Villas
Orchard Park
Rogers Rd
Heritage Hills
Northhampton
ALT
New Falls of Neuse Rd
Adams Ridge
Berkshire Village at Wakefield
Smith Creek
W A K E
Clearview Estates
Falls Pointe
Falls River Ave
Dansforth
Laura Lakes Estates
Dunn Rd
Autumn Hill
Burlington Mills Rd
Forestville Rd
Tuckahoe
Caddell Woods
Raven Pointe
Louisburg Rd
Alta Oakridge
Chesterfield Village
Alstonburg
Roswell
Vaughn Trace
Bay Laurel
Alyson Pond
Durant Nature Park
Neuse Crossroads
Addison Reserve
Malor Estates
Rolling Ridge
Gresham Hills
Berkshire Downs
Southeast High Speed Rail, Richmond, VA to Raleigh, NC
SECTION U
Preferred Rail Alternative NC1 (Length=8.88 miles)
Other Rail Alternatives from DEIS
Existing Rail Corridor
Existing and Proposed Pedestrian Bridges/Underpasses
Existing and Proposed Bridges/Underpasses
Historic Resources (Architectural)
0
1
2
Miles
N

2.2.28 SECTION V

The section begins in north Raleigh, NC, near Gresham Lake at railroad MP S-148 and extends to the Boylan Wye in Downtown Raleigh at railroad MP S-157.5, a distance of 9.89 miles for Alternative NC1, 9.91 miles for Alternative NC2, 9.97 miles for Alternative NC3, and 9.92 miles for Alternative NC5. (A "wye" is a triangle-shaped arrangement of railroad tracks with a switch at each corner that allows for trains to pass from one line to another or can be used for trains to reverse direction.) In response to the many comments received for Section V following publication of the Project Tier II DEIS, a new railroad alternative, Alternative NC5, was subsequently developed to provide an alternative alignment for the downtown area. Raleigh is the major population center of this section. The section is located in the Neuse River Basin and includes a crossing of Crabtree Creek. See Figure 2-27 for a map of Section V. Maps with greater detail can be found in Appendix R, maps 142-151.

A new railroad alternative, Alternative NC5, was developed to provide an alignment for the downtown area.

2.2.28.1 SECTION V ALTERNATIVES EVALUATED IN THE DEIS

Table ES-5 displays information regarding potential impacts to the human and natural environment, as well as information about operability, constructability, and cost for the alternatives presented in the Project Tier II DEIS (NC1, NC2, and NC3) for the entire section. All alternatives are on common alignment from the beginning of the section south to Whittaker Mill Road in Downtown Raleigh. The differences in impacts in Section V are between Whittaker Mill Road and the Boylan Wye. Table ES-5 displays the same categories of information for this area for all the alternatives, including the newly developed alternative NC5.

Alternatives NC1 and NC2 have the following characteristics:

- The design objectives for Alternatives NC1 and NC2 are to maximize the use of existing CSX railroad ROW through Downtown Raleigh.
- There are minor differences between the NC1 and NC2 road and railroad alignments near the Boylan Wye. The differences reflect alternative approaches to facilitating the movement of freight traffic through the wye.
- Limiting speed is 45 mph.
- Both NC1 and NC2 have a negative operability and constructability rating. The negative rating is due to the fact that the designs create a permanent at-grade crossing between passenger and freight operations at Edgeton (near Whittaker Mill Road) and require SEHSR Corridor passenger trains to share tracks with active freight yard switching. Such at-grade crossings and shared use in the vicinity of the yard are not desirable because significant delays can occur to the freight and passenger trains due to overlapping operations. In addition, Alternatives NC1 and NC2 require a reconfiguration of the CSX Capital Yard to avoid conflicts with proposed Triangle Transit light rail tracks on the east.

Alternative NC3 has the following characteristics:

- The design objectives for Alternative NC3 are to respond to a request by the City of Raleigh to minimize disruption of traffic and pedestrian patterns in the congested area around Jones Street and Glenwood South presented by Alternatives NC1 and NC2.
- The alternative is common with Alternatives NC1, NC2, and NC5 north of downtown. Through downtown, Alternative NC3 uses both NS ROW (from south of Whitaker Mill Road to Jones Street) and CSX ROW (south of Jones Street).

- Limiting speed is 45 mph.
- The operability and constructability rating is positive.

2.2.28.2 SECTION V ALTERNATIVES DEVELOPED SUBSEQUENT TO THE DEIS

Following the Project Tier II DEIS and public hearing, there were 320 comments received from the public expressing preference for an alternative in Section V: 188 preferred Alternative NC1; 57 preferred Alternative NC2; and 75 preferred Alternative NC3. Additionally, an iterative series of alternative design proposals (dubbed "NC4" and "hybrid") were submitted by citizens during the public comment period. The intent was to find a way to combine aspects of Alternatives NC1, NC2, and NC3 in a way that would minimize impacts to neighborhoods, the downtown area, and the freight railroad yards. Based on concerns expressed by members of the public, community organizations, and NS about the potential impacts of Alternative NC3, the Raleigh City Council held a public hearing on September 1, 2010, to hear from the public and ask additional questions of the Project team. The hearing was attended by more than 200 people. Afterward, the City Council requested that NCDOT analyze the possibility of developing a "hybrid" approach through Downtown Raleigh.

The "hybrid" designs were given careful consideration, but were not feasible from an engineering perspective. The general concept led to the development of Alternative NC5.

The "hybrid" designs proposed by the public were given careful consideration, but were not feasible from an engineering perspective. However, the general concept of these proposals led to the development of Alternative NC5.

Alternative NC5 has the following characteristics:

- Alternative NC5 is common with Alternatives NC1, NC2, and NC3 north of downtown, then follows CSX ROW from Whitaker Mill Road southward (similar to Alternatives NC1 and NC2, but with the SEHSR Corridor railroad on the west side of the existing CSX tracks, further from residential areas, and grade separated with NS). The alternative crosses Capital Boulevard on a new bridge (near Wade Avenue) and then continues south to Jones Street adjacent to the NS tracks but on separate ROW (similar to Alternative NC3, but with the SEHSR Corridor railroad on the east side of the existing NS tracks, further from residential areas). South of Jones Street, Alternative NC5 follows CSX ROW similar to the other Project alternatives.
- Alternative NC5 provides the benefit of avoiding both the CSX Capital Yard and the NS Glenwood Yard, which minimizes impacts to freight operations in Downtown Raleigh. It also avoids impacts to the Raleigh Electric Company Power House and Carolina Power and Light Company Car Barn historic properties (which would be impacted by Alternatives NC1 and NC2) and the Roanoke Park Historic District (which would be impacted by Alternative NC3).
- Limiting speed is 45 mph.
- The operability and constructability rating is positive.

A Project update meeting was held in Raleigh, NC, on September 27, 2011, to provide the public an opportunity to learn about NC5 in Downtown Raleigh between Whitaker Mill Road and the Boylan Wye. Because all alternatives are on common alignment through Section V north of Whitaker Mill Road, the review was limited to the changes through Downtown Raleigh. In the weeks preceding the Project update meeting, a preliminary review of NC5 was provided to members of the City of Raleigh's Passenger Rail Task Force, the City Council, and state legislators representing the area. Local government officials and members

of the public were informed that all alternatives were still under consideration, and they were asked to provide comments. Approximately 212 people attended the Project update meeting.

2.2.28.3 SECTION V PREFERRED ALTERNATIVE AND BASIS FOR SELECTION

The preferred alternative in Section V is Alternative NC5. This decision is based on the fact that it minimizes impacts to neighborhoods, freight operations, and historic resources, and was endorsed by the Raleigh City Council on October 4, 2011. Table ES-5 shows that NC5 has the least impacts to streams, no residential relocations, fewer business relocations compared to NC3 (but greater than NC1 and NC2), and only one severely impacted noise receptor (compared to 40 for the other alternatives). Additionally, apart from the impact to the historic Raleigh and Gaston Railroad Corridor that is common among all alternatives, Alternative NC5 has no additional impacts to historic resources. Each of the other alternatives (NC1, NC2, and NC3) would have an adverse effect on at least one resource protected under Section 106 of the NHPA, and also require a Section 4(f) use of those properties.

Alternative NC5 minimizes impacts to neighborhoods, freight operations, and historic resources, and was endorsed by the Raleigh City Council.

NC5 is also favored by the public. Following the Project update meeting, 61 comments were submitted by the public expressing preference for an alternative: three were in favor of NC1 (with no specific reason stated); three were in favor of NC2 (based partially upon cost considerations); three were in favor of NC3 (based upon railroad designs, interaction with freight railroads, and downtown connectivity); while 52 expressed a preference for NC5 (based primarily upon minimized impacts to neighborhoods, freight operations, and historic resources).

2.2.28.4 PUBLIC ROAD/RAIL CROSSINGS

Public Roads with Existing Grade Separated Crossings (Bridges or Underpasses will be Retained, Expanded or Replaced)

- I-540 - roadway bridge over railroad
- Old Wake Forest Road - roadway bridge over railroad
- Spring Forest Road - railroad bridge over roadway
- Atlantic Avenue - railroad bridge over roadway
- I-440 - roadway bridge over railroad
- Six Forks Road - railroad bridge over roadway
- Hodges Street – railroad bridge over roadway
- Peace Street - a new separate parallel railroad bridge will be built east of existing NS railroad bridges, to span Peace Street, W. Johnson Street, Tucker Street, and North Street
- W. Johnson Street a new separate parallel railroad bridge will be built east of existing NS railroad bridges, to span Peace Street, W. Johnson Street, Tucker Street, and North Street
- Tucker Street a new separate parallel railroad bridge will be built east of existing NS railroad bridges, to span Peace Street, W. Johnson Street, Tucker Street, and North Street
- North Street a new separate parallel railroad bridge will be built east of existing NS railroad bridges, to span Peace Street, W. Johnson Street, Tucker Street, and North Street

- Hillsborough Street- roadway bridge over railroad
- Morgan Street - replacement/expansion of the existing roadway bridge over the railroad will utilize an offsite detour; refer to Appendix G for a map of temporary proposed detour routes
- Boylan Avenue - roadway over railroad

Public Roads with New Grade Separated Crossings (Bridges or Underpasses)

- Gresham Lake Road - roadway bridge over railroad; off-site detour utilizing a temporary new at- grade crossing, refer to Appendix G for a map of temporary proposed detour routes
- Millbrook Road - underpass (road under railroad); off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- New Hope Church Road - roadway bridge over railroad; on-site detour with staged construction
- Wolfpack Lane - roadway bridge over railroad and Atlantic Ave; on-site detour
- Whitaker Mill Road - roadway bridge over railroad; off-site detour, refer to Appendix G for a map of temporary proposed detour routes
- Capital Boulevard - underpass (road under railroad)
- Old Williamson Road - underpass (road under railroad)
- Capital Boulevard - underpass (road under railroad bridge that will span both Capital Boulevard and West Street)
- West Street - underpass (road under railroad bridge that will span both West Street and Capital Boulevard)
- Jones Street - pedestrian bridge over railroad with elevator access

Public At-Grade Crossings to be Closed and Traffic Re-Routed

- Jones Street
- Hargett Street

2.2.28.5 RIVER AND MAJOR CREEK BRIDGES

Crabtree Creek - There is active freight service in this location utilizing an existing single-track bridge with a concrete ballast deck that was built in the early 1970's and is in good condition. A new bridge is proposed to be constructed adjacent to the existing single-track bridge. The new structure will span (but not touch) the historic Raleigh and Gaston bridge pier that lies within the drip line of the existing bridge.

2.2.28.6 CHANGES TO PREFERRED ALTERNATIVE SUBSEQUENT TO THE TIER II DEIS

As discussed above, a Project update meeting was held in Raleigh, on May 15, 2012, to provide the public an opportunity to learn about and comment on revisions that had been made to road work in Wake Forest, NC, and north Raleigh, NC (north of Whittaker Mill Road) subsequent to the Project Tier II DEIS. Two alternative designs were presented for the New Hope Church Road area and Wolfpack Lane. The alternatives were developed to address numerous public comments requesting a grade separated crossing (for the sake of accessibility for neighborhoods on the east side of the railroad), or a bicycle/pedestrian crossing at Wolfpack Lane. Both alternatives included a small southward shift for New Hope Church Road, to allow more lanes of traffic to remain open during construction and to provide room for bike lanes.

Alternative A included a realignment and roadway bridge over the railroad at Wolfpack Lane, along with associated changes to the surrounding roads.

Alternative B retained the closure of Wolfpack Lane that was shown in the Project Tier II DEIS, but included improvements for traffic mitigation. These improvements consisted of additional turn lanes at the intersection of Atlantic Avenue and New Hope Church Road, and realignment of Saint Albans Drive across from Craftsman Drive to allow an intersection with full traffic movements.

Attendance at the meeting was 166 and 49 written comments were received. Of the 21 comments that indicated a preference at Wolfpack Lane, 17 were in favor of Alternative A, and 4 were in favor of Alternative B. Refer to Appendix B for a summary of the meeting.

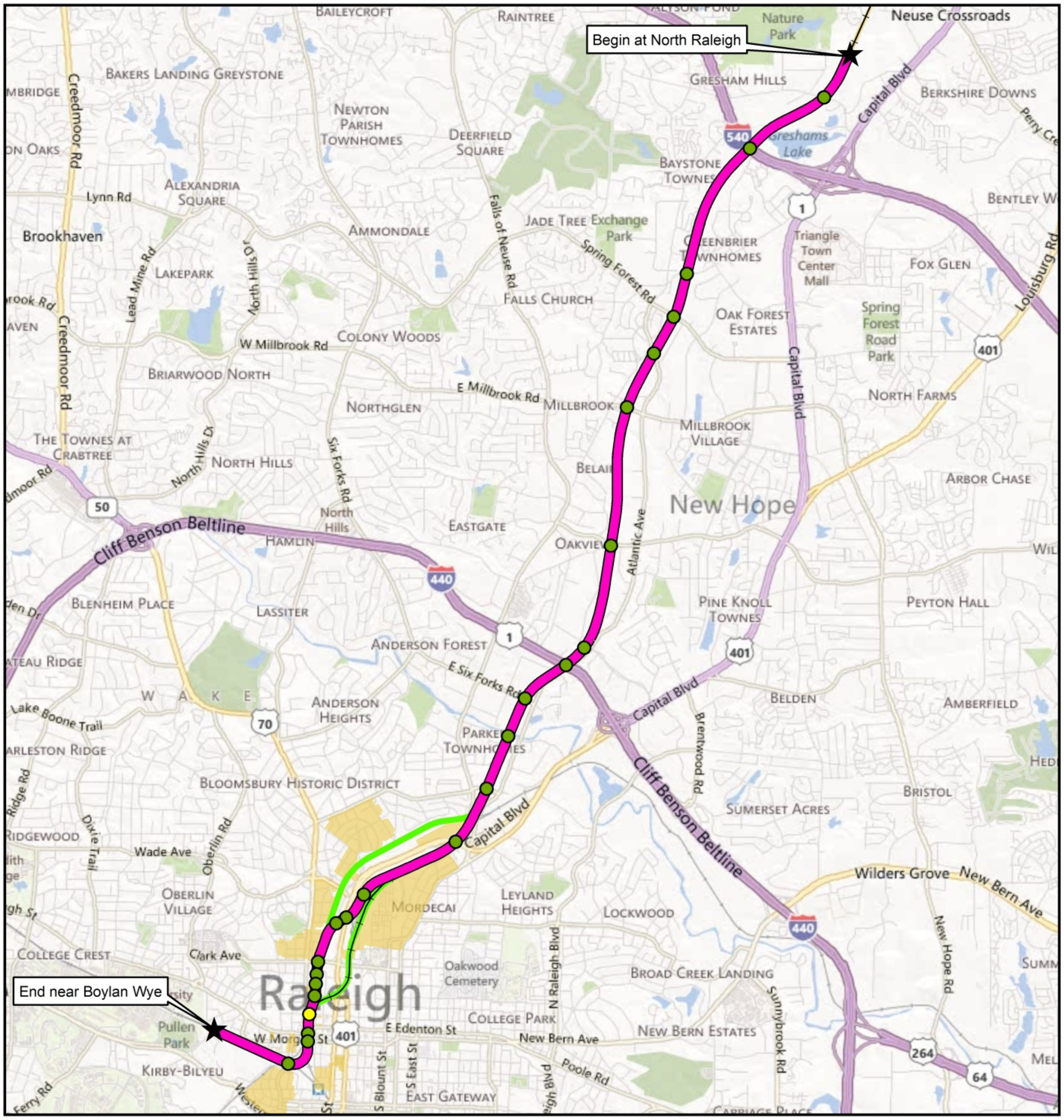
Based on favorable response from the public and from the City of Raleigh, Alternative A was selected and has been included in the designs presented in the Richmond to Raleigh Tier II FEIS.

Lacy Street - In addition to the changes contained in the two alternatives described above, a small change was made to the Lacy Street intersection with Millbrook Road. The designs presented in the Project Tier II DEIS mistakenly, did not show a connection to Lacy Street on the north side or that the south side connection to Lacy Street will be eliminated. The designs shown in the Richmond to Raleigh Tier II FEIS have been corrected.

Gresham Lake Road – In response to comments received from the City of Raleigh, the designs for this road have been modified to provide curb and gutter on one side. This will allow the bridge to be widened in the future in accordance with the City's plans for this road.

Downtown Raleigh - The entire railroad alignment south of Whittaker Mill Road and associated road work for Preferred Alternative NC5 was developed subsequent to publication of the Project Tier II DEIS, as described above. Detailed maps can be found in Appendix R, maps 148-151. No changes were made to Alternative NC5 since the alternative was presented to the public at the Project update meeting in September 2011.

Figure 2-27



Southeast High Speed Rail, Richmond, VA to Raleigh, NC

SECTION V

- Preferred Rail Alternative NC5 (Length=9.92 miles)
- Other Rail Alternatives from DEIS
- Existing Rail Corridor
- Existing and Proposed Pedestrian Bridges/Underpasses
- Existing and Proposed Bridges/Underpasses
- Historic Resources (Architectural)

0 1 2 Miles

N

2.3 ALTERNATIVES CONSIDERED, BUT NOT CARRIED FORWARD

The Project Tier II DEIS described three other alternative alignments that were considered, but subsequently excluded from further analysis (Figure 2-28). These alternatives and the reasons they were not carried forward are summarized in the sections below. For more detailed information, refer to Section 2.2.2 and Appendix G of the Project Tier II DEIS.

It should also be noted that advanced HSR (where operating speeds average 185 to 200 mph), as well as electric trains as options for the SEHSR Corridor, were evaluated and dismissed in the SEHSR Corridor Tier I EIS. Many comments received from the public on the Project Tier II DEIS asked why these alternatives were not still under consideration. Advanced high speed trains were dismissed because they require the construction of an entirely new separate railroad system that cannot be shared with freight (which would not meet the need of the Project to connect major urban centers), they would involve substantially higher costs and longer implementation time, and they would cause substantially greater community and environmental impacts. Electrified systems were dismissed because they have substantial initial costs (both monetary and environmental) that made them infeasible at this time, relative to the ridership/revenue projections for the SEHSR Corridor.

2.3.1 ABANDONED S-LINE, FROM NEAR CENTRALIA TO LYNCH

In the Chester, VA, area, the portion of the Seaboard Air Line Railway S-line from near Centralia (MP S-12.3) through Lynch (MP S-20) was considered as a possible alternative to the CSX A-Line (Figure 2-28) in the early feasibility studies for the overall SEHSR Corridor. In this area, the railroad ROW is no longer intact and extensive development has taken place within the old ROW, including the Chester Linear Park. Based on relocation impacts, impacts to a public park, and lack of compatibility with county plans, the alternative was dropped from further consideration.

2.3.2 S-LINE, FROM APPOMATTOX RIVER TO BURGESS

In Petersburg, VA, the former S-line south of the Appomattox River (MP S-24) to Burgess (MP S-30) was considered as an alternative based on previous studies by both FRA and the states of Virginia and North Carolina (Figure 2-28). Early field work and public involvement revealed considerable issues with this alternative, notably impacts to two properties. The alignment would impact the Chaparral Steel processing plant in Dinwiddie County, VA. Chaparral Steel is the largest employer in Dinwiddie County with approximately 450 employees. The alignment would also impact the Petersburg Breakthrough Battlefield Historic District at Pamplin Historic Park, which is listed on the NRHP, and is both a Virginia Historic Landmark and a National Historic Landmark. In a joint letter dated June 23, 2006, the National Park Service Petersburg National Battlefield, Pamplin Historical Park, Civil War Preservation Trust, Chaparral Steel, and Dinwiddie County, recommended that the SEHSR Corridor should not be built using the former CSX S-Line ROW. The letter stated they anticipated “devastating impacts on historic resources,” as well as economic, safety, cultural, and environmental repercussions. They argued that the presence of HSR would “grossly compromise the battlefield’s historic integrity.” Based on the reasons outlined above, the alternative using the former CSX S-Line from south of Ettrick Station (MP S-24) to Burgess (MP S-30) was dropped from further consideration.

2.3.3 ALTERNATIVES SERVING OLD UNION STATION IN PETERSBURG

Early planning efforts by FRA developed railroad alignments that would serve old Union Station in Downtown Petersburg, VA. The routing used the former CSX AAP-line (Appomattox Lead) from Dunlop through Colonial Heights, VA, into Petersburg, VA (Figure 2-28). Two versions of the concept were developed; both crossed the Appomattox River near old Union Station on the

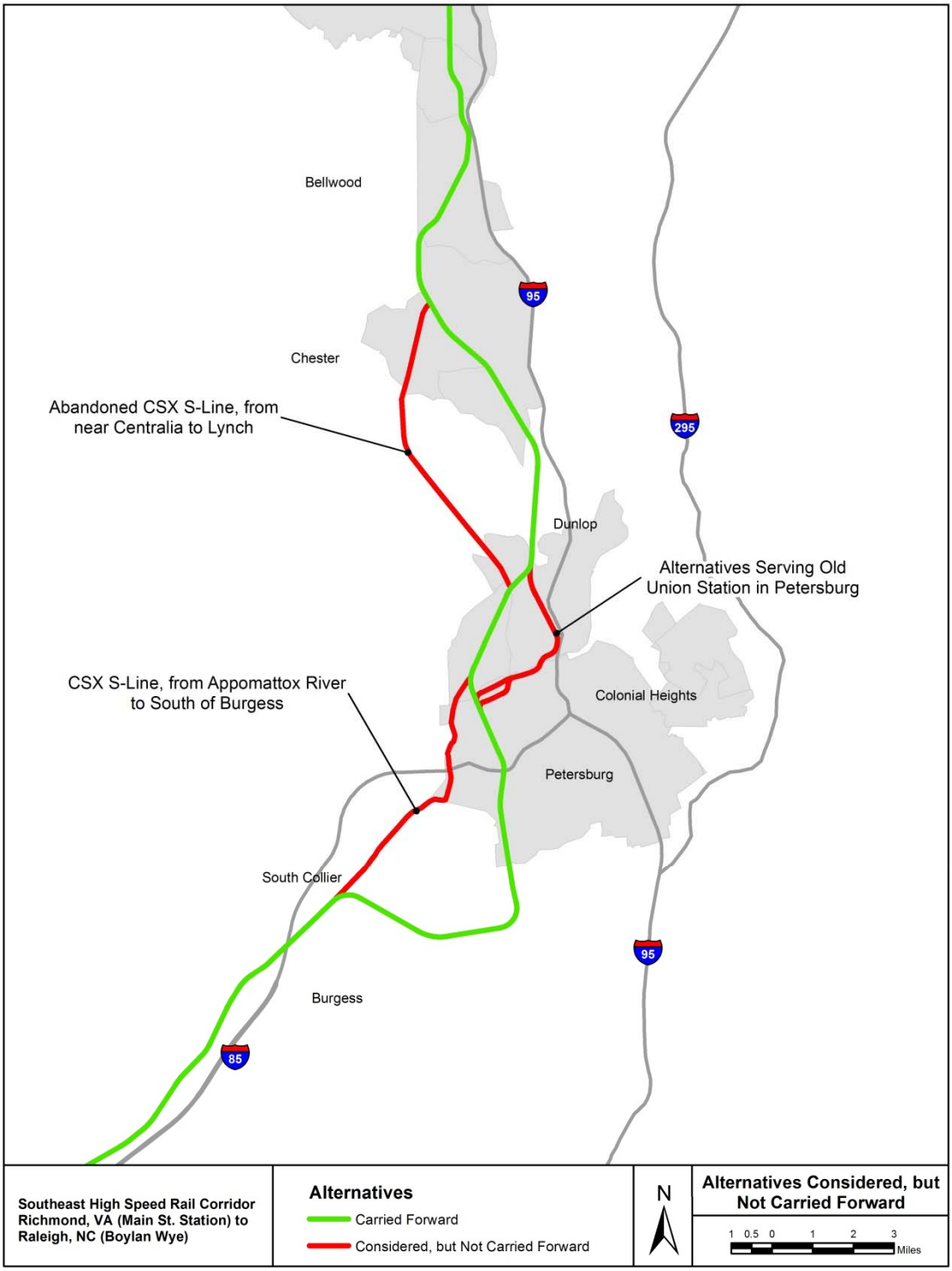
east side of Petersburg, then paralleled the Appomattox River to the west and rejoined the CSX A-Line near Washington Street in Petersburg, VA. The alignments varied on the south side of the Appomattox River. One used the NS N-line ROW until curving south on a bridge to re-connect with the CSX A-Line. The other followed the NS N-line ROW until reaching the inactive CSX S-Line, where it crossed over the NS N-line on a bridge to follow the CSX S-Line ROW (past old Commerce Street Station) before re-connecting with the CSX A-Line.

Design efforts, environmental evaluation, and public involvement identified the following issues associated with the alignments serving old Union Station:

- Conformity with Local Plans/Local Support - Coordination with local officials from the cities of Colonial Heights and Petersburg, VA, indicated that the alternatives serving old Union Station would be in conflict with development plans in the region and face local opposition (refer to Appendix G of the Project Tier II DEIS).
- Cultural Resources - The alternatives serving old Union Station would have adversely impacted several cultural resources protected under Section 4(f) of the Department of Transportation Act of 1966. These resources include the Battersea plantation, North Battersea/Pride's Field Historic District, and Petersburg Old Town Historic District.
- Residential and Business Relocations - Due to the sale of the former CSX AAP-line ROW and subsequent redevelopment, there would have been a significant number of relocations along this route.
- Travel Time - The additional length of the route through Downtown Petersburg (a distance of approximately one mile), combined with the reduced train speed due to the curves in this area, would increase travel time compared to other Project alternatives.
- Engineering Issues and Cost - The alternatives serving old Union Station were also identified to have significant construction issues due to constraints through Downtown Petersburg. These constraints include historic properties and districts, utilities (e.g., a substation), and the Appomattox River. As a result, the alternatives would require the use of retaining walls, additional service roads, and bridges, which add extra expense, ROW requirements, and construction complexity.

As a result of these issues, the alternatives serving old Union Station in Petersburg, VA, were excluded from further consideration.

Figure 2-28


Bellwood
95
Chester
Abandoned CSX S-Line, from near Centralia to Lynch
295
Dunlop
Alternatives Serving Old Union Station in Petersburg
CSX S-Line, from Appomattox River to South of Burgess
Colonial Heights
Petersburg
South Collier
95
Burgess
85
Southeast High Speed Rail Corridor Richmond, VA (Main St. Station) to Raleigh, NC (Boylan Wye)
Alternatives
Carried Forward
Considered, but Not Carried Forward
N
Alternatives Considered, but Not Carried Forward
1 0.5 0 1 2 3
Miles

2.4 NO BUILD ALTERNATIVE

The No Build Alternative was evaluated in the Tier I EIS. This alternative consisted of the existing transportation network in the Southeast travel corridor. Included in this alternative were:

- Major highways that make up the roadway network
- Air travel
- Existing conventional passenger rail service (Amtrak)
- Intercity bus services
- Local public transit services
- Commuter rail services
- Freight railroad services

The No Build Alternative also included existing and committed highway, rail, and airport improvements.

The SEHSR Corridor Tier I Record of Decision (ROD) rejected the No Build Alternative because it did not meet the purpose and need of the proposed action. It did not account for growth or alleviate congestion; it did not improve travel times, connectivity, energy efficiency, or air quality; and it did not improve safety within the preferred SEHSR Corridor. The SEHSR Corridor Tier I ROD found that under the No Build scenario, commuter and freight traffic would face increased delays; planned improvements to air facilities and major highways would not meet projected increases in demand; safety concerns would continue along areas of railway that lacked grade separations; and there would be an increase in congestion and air pollution concerns in Study Area of the SEHSR Corridor.

It was concluded that the No Build Alternative did not meet the purpose and need of the SEHSR Corridor project; therefore the No Build Alternative is not carried through in the Tier II EIS. However, "no-build" conditions are evaluated for comparison in numerous resource areas, such as air quality, noise, and traffic.

2.5 GREENWAY CORRIDOR PLAN

The process of developing environmental documentation for greenway has changed. FRA, FHWA, and the states of VA and NC have determined that the greenway project is more suitable for a pre-NEPA Greenway Corridor Plan.

Section 2.4 of the Project Tier II DEIS was titled "Multiuse Greenway Concept" and included discussion of conceptual planning for a greenway located parallel to the Project from Dinwiddie, VA, to the Neuse River (just north of Raleigh, NC). The discussion noted that potential impacts associated with the Greenway Concept would be documented in the Project Tier II FEIS. The rationale for including the greenway in the Project Tier II FEIS was to allow the necessary environmental documentation for the greenway to be prepared so that local municipalities could more quickly pursue the construction of the greenway in their jurisdictions. The construction of the greenway was never intended to be funded as part of the Project because FRA (the source of Federal funding for HSR projects) does not have a mechanism to provide funding for greenways. Although the parallel greenway is still being studied along with the Project, the process of developing the environmental documentation for greenway has changed since publication of the Project Tier II DEIS. FRA, FHWA, and the states of Virginia and North Carolina have jointly determined that the greenway project is more suitable for a pre-NEPA Greenway Corridor Plan, rather than it being included in the Richmond to Raleigh Tier II FEIS, as previously considered. This is primarily to give the local jurisdictions who will ultimately construct the greenway greater flexibility to pursue various funding types over time rather than limiting them to a particular funding agency's NEPA requirements. The details for the greenway will, therefore, not be contained within the Project Tier II FEIS, but rather in

a separate Greenway Corridor Plan. This document is currently under development by DRPT and NCDOT, with completion anticipated at the time of the ROD for this Project Tier II FEIS. The SEHSR website will provide additional details on this separate plan and opportunities for its public review and comment.

The details for the greenway will not be contained within this FEIS, but in a separate Greenway Corridor Plan.