CHAPTER 3
ADDITIONAL INFORMATION

D.C. TO RICHMOND SOUTHEAST HIGH SPEED RAIL

3 ADDITIONAL INFORMATION

The additional information provided in this chapter summarizes the ongoing coordination and documentation that the Federal Railroad Administration (FRA) and the Virginia Department of Rail and Public Transportation (DRPT) have conducted since the publication of the Draft Environmental Impact Statement (EIS), in support of the selection process for the Preferred Alternative. The Preferred Alternative is presented separately in Chapter 4 of this Final EIS.

Each section of this chapter covers a separate topic area that was relevant to the selection of the Preferred Alternative: clarifying historical context for communities within the corridor based on comments received on the Draft EIS and ongoing cultural resource coordination (Section 3.1); documentation of refined operations modeling performed after the publication of the Draft EIS (Section 3.2); and summary of community group, agency, and stakeholder considerations in the decision-making process (Sections 3.3 through 3.5).

Note that due to the numerous sources that are provided to the reader in this additional information section, detailed technical references to other data sources are provided as footnotes at the end of this chapter in lieu of standard page footnotes.

3.1 COMMUNITY/CORRIDOR HISTORICAL CONTEXT

This section presents expanded discussions of three areas within the Project corridor: Fredericksburg, Ashland, and Richmond. These discussions expand on the historical context of these areas and the relation of the history of these areas to the rail system and the DC2RVA Project. The discussions also demonstrate that full understanding of the historical context of these areas was taken into consideration in the selection of the Preferred Alternative, as detailed in Chapter 4 of this Final EIS.

Effects of the Preferred Alternative on historic properties are presented separately within this Final EIS: Section 5.13 for impacts to archaeological and above-ground cultural and historic resources, and Chapter 6 for Section 4(f) implications of the Preferred Alternative. Future work to mitigate unavoidable impacts is outlined in a Section 106 Memorandum of Agreement (MOA) for the Project, a draft of which is Appendix K of this Final EIS.

Background. The 123-mile long Project corridor traverses numerous localities, many of which have been thriving communities for centuries. This history has resulted in a densely populated corridor that also contains an extensive number of historic buildings, structures, objects, districts, and archaeological sites. Rail has been a distinct component in the establishment of "place" throughout this development—a backbone of the area economy and culture. The prominence of the rail in area heritage was at the forefront of the myriad of studies conducted as part of the environmental process for the DC2RVA Project. In addition to meeting state and federal

requirements during the study process, additional work was completed beyond the legal requirements to ensure that areas of historical significance were taken into consideration during all phases of Project planning.

While every community along the corridor has a story, Fredericksburg, Ashland, and Richmond have a specific, unique tie to the rail system physically and socially. The rail corridor is located in the center of each of these urbanized areas. The establishment of the rail system was, in large part, a distinct component of the development of each of these areas, and the railway continues to be a notable factor in area planning and daily life. All aspects of the tangible and intangible historical fabric of these localities were taken into consideration during Project planning.

Content of this Section. The following information is presented for Fredericksburg (Section 3.1.1), Ashland (Section 3.1.2), and Richmond (Section 3.1.3):

1. An abbreviated history of each locale
2. Background review and summary of previous cultural resource studies that have been conducted within and adjacent to the rail corridor
3. Discussion of in-depth review and subsequent analysis of Project alternatives in relation to history of the area, recorded resources, and public concerns, including:
    a. The parameters of all Project construction alternatives under consideration
    b. Comments from those with a vested interest in each area regarding Project plans and their points of concerns
4. Summary of efforts to avoid areas of concern to assure preservation in place and, if avoidance was not possible, minimize any potential impacts to cultural resources
5. Potential future studies (i.e., separate from the DC2RVA Project) that can shed more light on the significant elements of each place

As previously stated, it is important to note that effects of the Preferred Alternative on historic properties are presented separately in Chapters 5 and 6 of this Final EIS.

Data Sources. The community and historic contexts presented in the following sections relied in part on the cultural resources studies conducted as part of the DC2RVA Project. DRPT has been conducting Phase I-level cultural resource studies for the entire 123-mile DC2RVA corridor since December 2014. These include Phase IA and Phase IB archaeological surveys, reconnaissance-level architectural studies, and intensive-level architectural investigations. The findings have been detailed in two Phase IA cultural resource reports,[1] three archaeology reports,[2] 15 architectural reports reconnaissance-level architectural reports,[3] and three intensive-level architectural reports.[4] These technical reports resulted in the recordation of over 3,000 resources, and the technical studies are presented in their entirely in Appendix R of the Draft EIS and Appendix D of this Final EIS.

3.1.1 Fredericksburg Area

3.1.1.1 Abbreviated History of Fredericksburg

The Fredericksburg portion of the DC2RVA corridor was highlighted as an area of 'cultural resource sensitivity'. In order to understand the history of this region and lay a framework for further discussion of the resources present in the area, a brief history of Fredericksburg is presented here, including its connection with the railroad. This cursory synopsis of the town's

history is not meant to be comprehensive; more in-depth studies of the historical framework of Fredericksburg should be consulted for greater detail.[5]

The future site of Fredericksburg was granted to John Buckner and Thomas Royston in 1671. Upon granting, they immediately leased the land to William and Sukey Livingston, which is how the area became known as The Leaseland from the 1670s through the 1720s.[6] The community remained a small river enclave, situated at the falls along the Rappahannock River, through the first two decades of the eighteenth century. The county seat of Spotsylvania officially moved to Fredericksburg on October 1, 1732 for the convenience of citizens and county officials. A courthouse was built in town, as well as a church, prison, and other governmental and commercial structures.[7] The town wharfs also provided the first public river docks in the area. Numerous warehouses developed around the Fredericksburg waterfront in the mid-eighteenth century to accommodate the new business, most of which were concentrated around what are today Sophia and Wolfe Streets.

The period from the 1780s through the 1820s was marked by a dramatic increase in the shipping and milling industry in Fredericksburg and the nearby town of Falmouth. Whereas early shipping primarily concentrated on tobacco, by the end of the eighteenth century, soils in the area were depleted. Farmers turned to new crops to sustain the family plantations, primarily wheat. Grain mills and merchants' warehouses were erected along the Rappahannock River, and the Fredericksburg Canal carried the water necessary to propel the mills' waterwheels. The warehouses held flour, tobacco, and later cotton awaiting shipment as well as imported consumer and other goods, and farmers, haulers, and watermen took use of the town's inns and taverns.[8] Although flour export decreased after 1820, Fredericksburg continued to prosper as a port town. In 1822, it was made a postal center for distribution of all United States mail to five states, and goods from surrounding counties continued to be shipped from the busy wharves.[9]

Due to this growth and its proximity halfway between Richmond and Washington, D.C., Fredericksburg was selected as a stop along the new Richmond, Fredericksburg and Potomac Railroad (RF&P) when it was established in the mid-1830s. On January 23, 1837, the first passenger train stopped in Fredericksburg, ushering in a new age of transportation.[10] This was the temporary northern terminus of the RF&P, as the route north of Fredericksburg was not completed for five years. Although trains stopped in town, Fredericksburg did not have a depot at that time. Passengers waited on an open platform with no shelter for people or goods. A small, one-story wood-framed structure was eventually built in the mid-1850s to function as an anchor to the train service in this area. Rail traffic was soon disrupted, though, by one of the most significant events in our nation: the Civil War.

Numerous major Civil War battles occurred within and around Fredericksburg, including the First and Second Battles of Fredericksburg, as well as the Battle of Salem Church. The Civil War decimated the physical and cultural fabric of the Fredericksburg area. The rail bridge crossing the Rappahannock was destroyed, and large segments of tracks were pulled up. Despite the destruction, area inhabitants remained in town and were determined to rebuild their lives and their homes. Rail traffic was not fully restored until after 1870.

The population of Fredericksburg grew greatly in the years just after the war. Emancipated slaves moved into town looking for employment, and white farmers looked to the area factories and commercial businesses for jobs after their farms were destroyed by Federal and Confederate troops. The town grew rapidly, becoming the City of Fredericksburg in 1879.[11] Traffic along the

RF&P was prolific. A new rail station was erected in 1888, and commerce continued to increase throughout the remainder of the nineteenth century.

By 1900, Fredericksburg was a city of 5,068 people.[12] The community prospered as industrial businesses and schools were opened in the downtown area. This growth once again outpaced the antiquated rail facilities. A new station was built in 1910, approximately one block east and one block north of the old station, closer to the core of commercial development.

With the introduction of the automobile, Fredericksburg became an important stop along what became Route 1 when the north-south interstate roadway was established. The increase in road traffic, combined with a proliferation of rail service, led to numerous accidents and incidents along the at-grade tracks through town. It was determined that a raised system of rail tracks would expedite rail service and provide a safer environment for residents.[13]

Fredericksburg continued to thrive until the mid-1950s when Interstate 95 was built, bypassing downtown. The development of the Spotsylvania mall in the 1970s, as well as an increase in personal auto usage in the second half of the twentieth century, brought hardships to Fredericksburg. The train station closed, and stores were shuttered. It was not until the development of the Virginia Rail Express (VRE) in the early 1990s that downtown was once again populated. Travelers returned to the rail, and numerous buildings were rehabilitated in the downtown core.

3.1.1.2 Background Review/Summary of Previous Cultural Resource Studies

Given its unique geographic location along the Fall Line of a major river, the Fredericksburg area was an appealing location for both prehistoric and historic peoples. As such, the area is rich with above- and below-ground cultural resources. Studies of the above-ground resources that constitute Fredericksburg as well as formal and amateur archaeological excavations have been occurring in and around the downtown area for decades.

In 1970, the Fredericksburg Historic District (111-0132), located along the banks of the Rappahannock River, was nominated for NRHP listing. As noted on the NRHP form, the district "encompasses an important assemblage of eighteenth, nineteenth, and early-twentieth century architectural styles".[14] The district is a 200-acre area that comprises the city's downtown commercial area, adjacent industrial area, and some of the surrounding residential blocks. The Fredericksburg Historic District was listed in the Virginia Landmarks Register (VLR) on March 2, 1971 and the NRHP on September 22 of the same year; it currently has a period of significance of 1727 to 1927. Numerous buildings within the district are individually eligible for, or listed in, the NRHP.

Early investigations of Fredericksburg's archaeological resources were conducted by the prolific advocational archaeologist, Mr. Roy Butler. Mr. Butler recorded and excavated numerous historic sites in the Fredericksburg Historic District in the 1970s and 1980s. Unfortunately, few formal reports or project notes exist from his excavations, including details on excavation methodologies and artifact analysis from the numerous collections that he unearthed over his amateur career. Regardless, Mr. Butler was able to record several sites that were to be destroyed by development, thus saving at least the location and site typology data for future researchers.

Formal archaeological inquiries began in the city in the late 1970s. In 1979, Kimberly Snyder conducted a preliminary archaeological investigation of the "Chimneys" House in the Fredericksburg Historic District (111-0132). Although historic archaeological remains were

recovered from the project area, no further cultural resources work was recommended, and the location was not recorded as an archaeological site with the Virginia Department of Historic Resources (DHR).[15]

In 1981, under contract from the City of Fredericksburg, Charles Troup conducted limited archival research and a pedestrian reconnaissance to ascertain the potential for intact archaeological sites along the Rappahannock River, notably within two areas referred to as the Riverfront and the City Dock.[16] The project's goal was to ascertain the amount of flooding and fill deposits in these areas and make recommendations on the need for additional archaeological study prior to any development. A total of 81 shovel tests and augurs were excavated in both areas, leading Mr. Troup to record the entire area bounded by Sophia Street and the Rappahannock River, between Charlotte Street on the south and Lewis Street on the North, as an archaeological site: 44SP0069. He suggested that historic remains may be present, but that fill was deep along the river's edge.

Subsequent archaeological work in Fredericksburg in the 1980s and 1990s was conducted and sponsored by four sources: Mary Washington College (now the University of Mary Washington [UMW]), the National Park Service (NPS), The George Washington Foundation (previously known as both The Kenmore Foundation and George Washington's Fredericksburg Foundation), and Harrison and Associates, a local Cultural Resource Management (CRM) group. The Center for Historic Preservation at UMW conducted excavations at numerous Fredericksburg locales prior to area improvements, including investigations surrounding the masonry wall at the Masonic Cemetery in 1992, limited research into the parking lot adjacent to the Visitor's Center on Caroline Street in the late-1980s, and excavations in Market Square and in the square alley on and off throughout the 1990s.

In 1992, UMW archaeologists and historians explored the historical and physical fabric of Blocks 48 and 49 just south of the railroad tracks in preparation for developments associated with parking areas for the new VRE service.[17] Recovered artifacts ranged from Archaic-period lithic tools to mid-twentieth century domestic debris. The two most prominent occupations were late-eighteenth century domestic and commercial activity and nineteenth century industrial occupation.[18] Like other large tracts of land in this area, the lots had been virtually abandoned by the 1950s when rail travel was on the decline in favor of the automobile.

From 1995 through 1997, archaeologists from Harrison and Associates, aided by numerous volunteers, excavated inside the basement of the Old Stone Warehouse on Sophia Street, however no formal report exists summarizing these investigations. The original purpose was to excavate soils in areas where new floor supports were to be installed. The archaeologists found that over 2 feet of silt had accumulated over the original flooring due to two hundred years of flooding along the Rappahannock River. Most of the vertical wood supports had completely rotted through. As such, the entire basement was excavated to create a stable surface upon which to rebuild the flooring supports in the building. Within the many micro-thin strata, archaeologists recovered thousands of artifacts that had been washed in with flood waters, including ceramics, glass, and metal such as barrel hoops.

Concurrently to these archaeological projects, the NPS has been sponsoring excavations at Chatham and throughout the Fredericksburg-Spotsylvania National Military Park. Excavations have been conducted by NPS staff, various CRM firms, and state universities on both large-scale research projects and smaller area development plans. For example, excavations at Willis Hill have been conducted by James Madison University, on and off since 2000. Led by archaeologist

Clarence Geier, students and professors from the University have been exploring the history and occupation of Willis Plantation and parts of Sunken Road, with a special emphasis on the place of the plantation and roadbed during the Civil War.[19] Other NPS-sponsored projects include limited archaeology on the Innis House on Sunken Road and several small, utility-based projects in the Chancellorsville, Wilderness, Salem Church and Fredericksburg battlefields.

In 1999, the Center for Historic Preservation at Mary Washington College completed archaeological excavations at the "Fielding Lewis Store" (111-0132-0033) at 1200 Caroline Street.[20] Investigations focused on determining the building's date of construction and understanding the sequence of alterations to the structure. No secure archaeological context was found that could firmly indicate the date of construction; however, artifacts and construction materials indicated it was built between 1740 and 1770. Various building features and materials recovered from excavations helped to understand the sequence of construction and provided clues as to the interpretation of the uses of the Fielding Lewis Store.

Cultural Resources, Inc. (CRI) conducted a Phase I survey of the 29.3-acre Cobblestone Square Apartments south of Lafayette Boulevard within the Fredericksburg Historic District (111-0009).[21] The investigation identified one archaeological site, 44SP0451, which was defined as an ephemeral lithic scatter and was recommended not eligible for NRHP listing.

In 2006, archaeologists from Dovetail Cultural Resource Group (Dovetail) conducted Phase I—Phase III large-scale investigations at the proposed Marriott hotel site at the corner of Caroline and Charlotte Streets. The work involved extensive archival research, historic map overlays, several months of archaeological fieldwork, and the production of a report on the investigations. In sum, the team uncovered the remains of Roger Dixon's store (mid-eighteenth century), the Indian Queen Tavern (1771–1832), a likely slave quarter (1830s), and post-1830s domestic residences. In addition, the group collected tens of thousands of artifacts that spanned Fredericksburg's entire occupation, from prehistoric inhabitants to today's residents.[22]

On behalf of DHR, Dovetail conducted a metal detector survey of the proposed UMW—Lee Hall addition site in Fredericksburg, Virginia in March 2006.[23] The survey included an examination of approximately 24,000 square feet through a pedestrian survey, surface observation and metal detecting. The metal detector survey did not locate any historic artifacts. In addition, no artifacts or features were noted on the surface.

The William and Mary Center for Archaeological Research (WMCAR) conducted a reconnaissance-level architectural, cost-share survey sponsored by the City of Fredericksburg in partnership with DHR in 2008.[24] The survey concentrated on the historic district and adjacent areas, and its purpose was to provide information and a NRHP eligibility recommendation for the existing listed historic district (Fredericksburg Historic District, 111-0132). Over a two-year period when the agreement between the City and DHR was established, a total of 1,000 resources were identified and surveyed. These resources included domestic, commercial, industrial, religious, social, governmental, and many more types of resources "related to the Settlement to Society Period through the New Dominion Period".[25] Nine hundred forty-two resources were recommended to be contributing to the Fredericksburg Historic District Extension (111-0009) under Criterion A for their overall contribution to the broad patterns of history and Criterion C for their contribution to the architectural integrity of the district. WMCAR recommended that a number of commercial blocks within the historic district expansion could benefit from state and federal rehabilitation tax credits.

In 2011, History Matters, LLC and Thunderbird Archeology conducted a Phase I cultural resource investigation of the 3.5-mile Virginia Central Railroad Trail project located within the City of Fredericksburg and Spotsylvania County.[26] During this survey, 23 historic resources were identified within the indirect APE, 11 of which are contributing resources to the historic and architectural integrity of the Fredericksburg Historic District Extension (111-0009). Among these resources within the indirect and direct APE for this project was the Virginia Central Railroad Historic District (VCRHD) (088-5346), a potentially eligible historic district under NRHP Criterion A for contribution to the broad patterns of history within Fredericksburg. Ten historic resources were identified within the direct APE and are contributing resource to the VCRHD, including archaeological sites and several structures related to the railroad. Two of the four archaeological sites are historic, previously recorded sites (44SP0142 and 44SP0159) contain culverts and piers related to the rail bed and are considered potentially eligible for listing on the NRHP. One site (44SP0211) has no eligibility determination but also contains a portion of the extant rail bed. During this project, they also recorded one newly recorded archaeological site (44SP0639), a multi-component site that extends across the VCRHD.

Dovetail, HFFI, the City of Fredericksburg, Silver Companies, CRI, and the Fredericksburg Area Museum and Cultural Center joined together to perform a volunteer dig at the site of the Ellis-Bell Stoneware Kiln, which culminated in a 2014 report summarizing the results of the excavation.[27] Based on archaeological work done by Dovetail in 2007 at the Fredericksburg Hardware Site, archaeologists conducted salvage archaeology in a previously inaccessible area of the hardware store lot to uncover the remains of an 1820s stoneware kiln. Although it was discovered that the kiln itself had been destroyed when a warehouse was built on the lot in 1849, the team gathered thousands of waster fragments of stoneware to highlight the antebellum ceramic industry in Fredericksburg.[28]

Over the course of three separate investigations carried out on behalf of the City of Fredericksburg from 2013 to 2017, Dovetail conducted archival research and archaeological investigations on a portion of the former Prince Hall Lodge site (44SP0069-0001), located within the proposed Riverfront Park in Fredericksburg. In August 2013, the City commenced cultural resource studies of the entire proposed Riverfront Park, located along Sophia Street in downtown Fredericksburg.[29] As part of this work, Dovetail conducted archival research and an intensive Phase I-level survey of the 3.5-acre park area, including the Prince Hall Lodge site. During the archaeological survey, 12 backhoe trenches and four test units were excavated within the project area to ascertain the integrity of subsurface deposits. The results proved that the project area contains numerous sections that are highly archaeologically sensitive, as well as several areas that are disturbed or covered in extensive fill. In 2015, Fredericksburg City Council approved demolition of the Prince Hall Masonic Lodge at 609 Sophia Street, the only extant building within the proposed Riverfront Park. The Lodge, constructed in 1921, sat atop a mound. The mound was once located in the rear yard of the Rowe-Goolrick House, which became the site of 609 Sophia Street. The mound was a natural landscape feature and was utilized by historic residents (and Civil War soldiers) for its topographic vantage point. Demolition of the building in September 2015 resulted in a void in the earthen mound left by the building's basement. Construction activities associated with the building demolition and filling of the basement resulted in the unexpected removal of a substantial portion of the earthen mound itself—an area partially deemed archaeologically sensitive during the Phase I survey and containing numerous archaeological features. Salvage archaeology was thus conducted on the site, where the team

identified eight truncated archaeological features and recovered over 5,000 artifacts spanning all periods of the site's occupation from prehistoric times through the late-nineteenth century.[30]

Finally, as aforementioned, DRPT conducted Phase I and Phase II cultural resource studies in the Fredericksburg area as part of the current rail Project. Archaeological studies included Phase IA and Phase IB surveys of the DC2RVA corridor, which included background review, historic research, GIS-based predictive modelling, and field investigations.[31] These studies noted the presence of three previously recorded resources within the APE within Fredericksburg: 44SP0187, 44SP0687, and 44SP0688.[32] DC2RVA architectural studies in Fredericksburg included a Phase I investigation that encompassed a portion of the corridor from Dahlgren to Fredericksburg.[33] In this portion of the APE, the team surveyed 271 historic architectural resources, of which 146 were previously recorded and 125 were newly recorded historic resources. These resources included battlefields, historic districts, sites, and individual properties. Based on this Phase I study and updates to the APE following the Draft EIS, Phase II architectural evaluations were completed and included 12 resources within Fredericksburg.[34]

3.1.1.3 Discussion of In-Depth Review and Subsequent Analysis of Project Alternatives in Relation to History of the Area, Recorded Resources, and Public Concerns

Potential impacts to cultural resources were considered at various stages in the alternatives development and selection process for the DC2RVA Project. Starting at the inception of the environmental study in 2014, cultural resources were at the forefront of the Project dialogue. The Project was initiated with DHR in November 2014 through a formal letter and a kick-off meeting. Since that time, almost 20 in-person meetings and dozens of phone calls have occurred between DHR, Advisory Council on Historic Preservation (ACHP), FRA, and DRPT. All aspects of the Project design have been through thorough review to assure that cultural resources have been recorded and considered during Project planning through open and ongoing dialogues between cultural resource specialists and engineers to ensure that design plans accommodate cultural resource concerns.

Details on the Project have also been shared repeatedly with the public through a series of general Project public meetings and articles (refer to Appendix E for documentation). Specific to cultural resources, numerous consulting parties in the area were invited to participate in the process: NPS (Fredericksburg), City of Fredericksburg, Historic Fredericksburg Foundation, Inc., and Central Virginia Battlefield Trust, as well as groups whose interests span the Commonwealth like American Battlefield Protection Program, Civil War Trust, National Trust for Historic Preservation, and Preservation Virginia. Adjacent localities were also invited to participate as the rail ties these communities together. The goal of this outreach was to collect information on significant historic properties in the area to assure they were considered during Project design.

Beyond formal consulting party coordination, DRPT has also given several public talks specifically associated with the Project to inform residents of the Project and learn about issues they consider important (refer to Appendix E for specific documentation). This includes a 2015 meeting in Mayfield, a 2016 presentation at the annual meeting of the Historic Fredericksburg Foundation, Inc., and several presentations on area archaeology focusing on the history of Sophia Street and the rail corridor in 2016 and 2017. These meetings allowed DRPT to garner details from the public on the resources the community considered most important.

Based on this coordination, DRPT conducted the following technical studies in Fredericksburg to aid in the analysis of alternatives in relation to the history of the area, recorded resources, and public concerns:

- Archaeological predictive modelling on the corridor to identify locations with the high potential to un-recorded archaeological resources;[35]
- In-depth historic document and map review with georeferenced overlays to identify potential historic resources;[36]
- Phase I cultural resource surveys to identify above- and below-ground resources within the Preferred Alternative (see previous section for citations) resulting in the recordation of over 100 architectural resources and a dozen archaeological sites in the area of potential effect in Fredericksburg;
- Intensive-level architectural studies on 20 resources within the city including archival research, architectural analysis, and evaluation of NRHP eligibility with determinations on resource boundaries; and
- Integrated Project mapping and analysis to allow cultural resource specialists to provide input into engineering design based on the results of survey and historic map/document review to avoid and minimize impacts.

3.1.1.4 Summary of Efforts to Avoid Areas of Concern to Assure Preservation in Place and, if Avoidance Was Not Possible, Minimize Any Potential Impacts to Cultural Resources

Care was taken by DRPT to avoid areas of historic sensitivity in the Fredericksburg area as identified through cultural resource studies, historic document/map analysis, and public comment. The Phase IA archaeological study of the Project corridor aimed to predict areas of archaeological sensitivity and areas to be avoided based on a variety of cultural and environmental factors.[37] This study was used to guide two Phase IB archaeological studies that included on the ground testing of areas within the archaeological APE to identify archaeological sites. Boundaries were created for each site and approved by DHR; these site boundaries were then shared with the environmental and engineering teams to determine potential avoidance and minimization of impacts in these areas.

Phase I and II architectural studies identified and evaluated above-ground resources within the architectural APE. Studies included determinations on the boundaries of each resource as well as noting significant viewsheds that contribute to the eligibility of the resource. Upon approval by DHR, numerous in-person meetings were held between involved agencies and DRPT to compare the locations, character-defining elements of each resource, key viewsheds, and Project plans including side-by-side comparisons of the property and plans (see Appendix E for roster of meetings). As possible, plans were altered to avoid and minimize impacts on resources that were both individually eligible for the NRHP and contribute to the Fredericksburg Historic District, Fredericksburg District Expansion, and Civil War battlefields. Combined, these studies identified numerous cultural resources within Fredericksburg (see Figure 3.1-1 and 3.1-2 for historic overlap maps). The locations/boundaries of these resources were taken into consideration at various stages of the design/engineering process and each resource was examined to assure avoidance, as possible. In areas where avoidance in its entirety could not be achieved, DRPT and agencies worked together to minimize impacts that would adversely affect each resource. Additional details on Project effect can be found in Chapter 5.

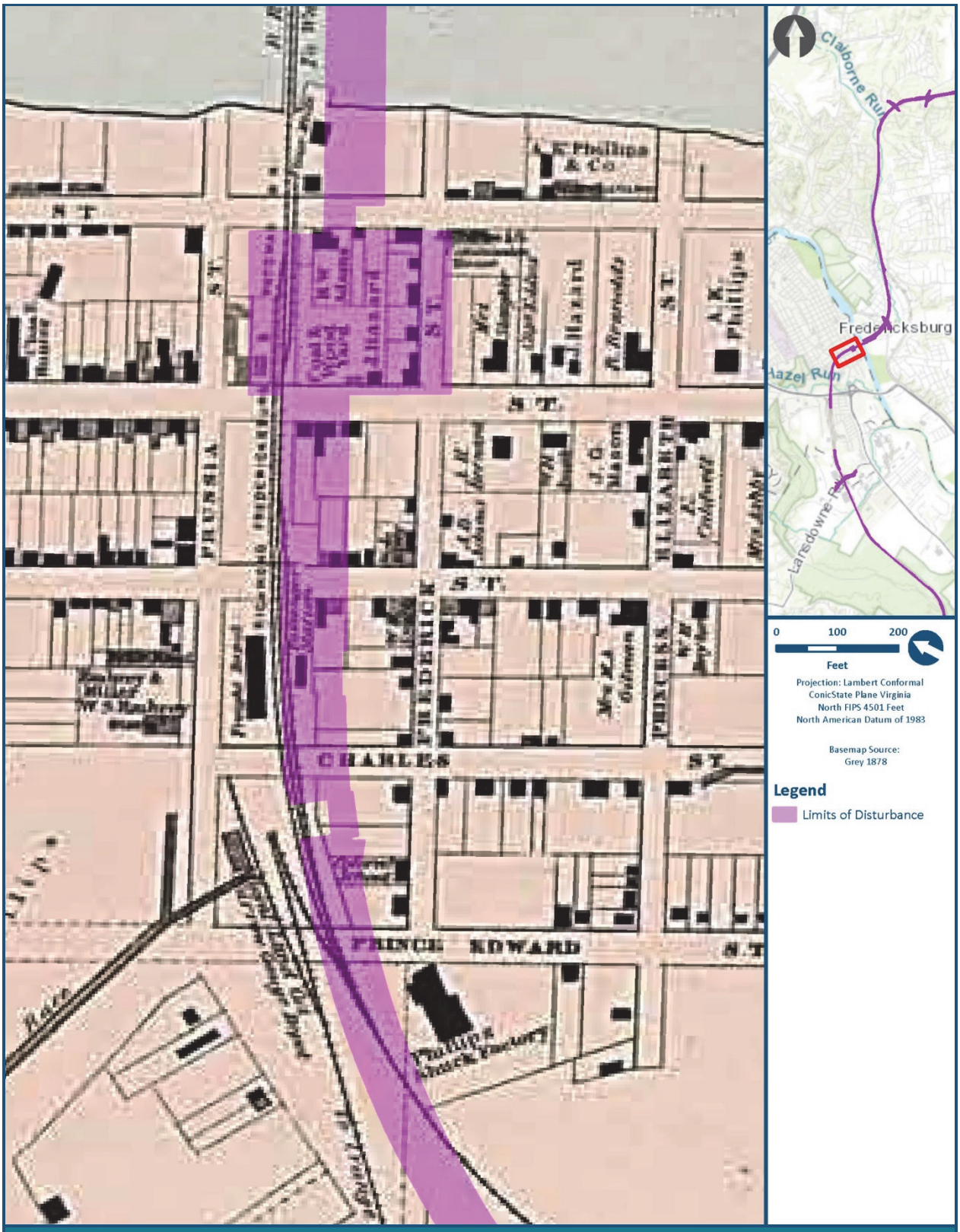

Figure 3.1-1: Limits of Disturbance Overlaid on 1878 Grey Map of Fredericksburg

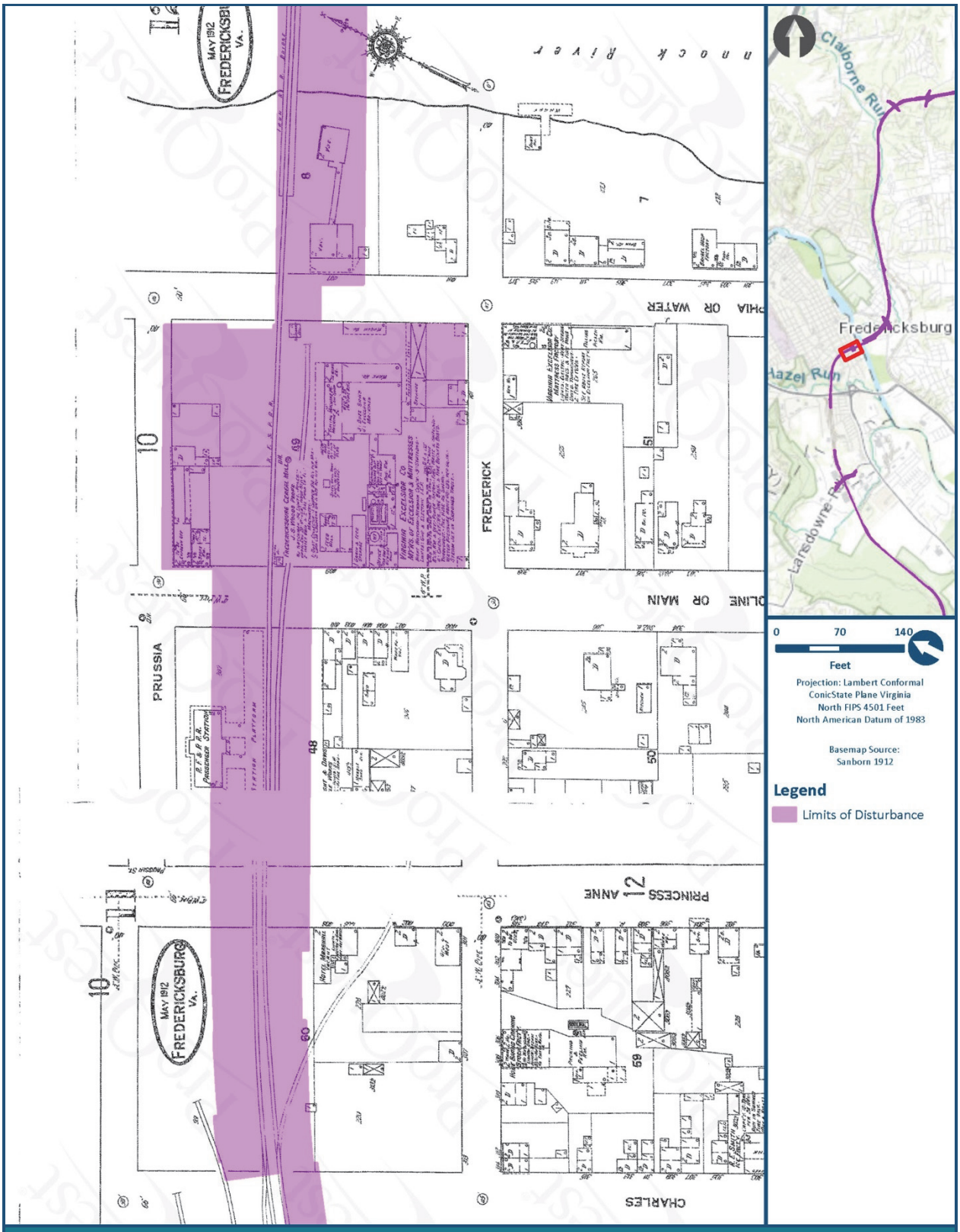

Figure 3.1-2: Limits of Disturbance Overlaid on 1912 Sanborn Map of Fredericksburg

3.1.1.5 Additional Studies Separate from the DC2RVA Project

In places where resources could not be avoided and impacts minimized, mitigation measures have been outlined in the Section 106 Draft MOA for the Project (see Appendix K of this Final EIS) that include additional studies including research, architectural analysis, archeological excavations, public outreach and more.

In addition to the mitigation measures identified in the Section 106 Draft MOA, the research conducted by DRPT and concerns noted during the various public comment and consultation periods highlighted opportunities for future historic research avenues outside the scope of the DC2RVA Project. One such topic for future research born out of research/work completed in both Fredericksburg and the Shockoe Bottom area of Richmond was the need for a historic context of the Virginia slave trade as related to the rail networks linking the major cities throughout the state. This concept is discussed more in Section 3.1.3.5 below.

The depth of prehistory and history within the downtown Fredericksburg area provides ample opportunities for additional research in this area. Although the Project will have an adverse effect on resources in the Fredericksburg area, as discussed in Section 5.13 of this Final EIS, many NRHP-eligible individual properties are located in Fredericksburg that will not be impacted by the Project. Future studies could include NRHP nominations for these resources as well as interpretive signage and public talks to assure that information on these important resources is disseminated to residents and visitors of the area.

While the Fredericksburg Historic District was listed on the NRHP in 1972, the Fredericksburg Historic District Expansion (111-0009), located to the west of the original district, was found to be NRHP eligible as part of the Project. As a general recommendation, outside the scope of the DC2RVA Project, a more comprehensive survey of this district should be completed, perhaps in conjunction with the City of Fredericksburg, to assure that character-defining features of the district are maintained and out-of-scale development is curtailed. This may include not only a formal NRHP catalogue and nomination, but also evaluating a potential overlay district to instill preservation guidelines.

Beyond the built environment, archaeological sites in the corridor abound. This includes the sites of the 1850s and 1888 train stations once located on the south side of the tracks, numerous warehouses and factories once extant on the streets surrounding the rail, and many other now-gone resources. Particularly relevant to this study, an archaeological dig outside the scope of this Project could be completed around the duplex at 314-316 Frederick Street, which was used as a slave jail in the 1830s through the 1850s. A companion dig could occur in the yard at 300 Caroline Street, to the south of the tracks, which was another slave jail and pen. This data would be extremely informative when creating an archaeological context of the slave trade along the RF&P.

3.1.2 Ashland Area

3.1.2.1 Abbreviated History of Ashland

During consulting party and public consultation leading to the publication of the Draft EIS, the portion of the DC2RVA corridor within Ashland was highlighted as an area of cultural resource sensitivity. Various private citizens, organizations, and consulting parties voiced concerns about rail expansion in Ashland and how it may impact various historic resources. A brief history of the area is provided here to lay a framework for later discussions of these resources; however, the history of Ashland has been extensively documented and this cursory summary should not be viewed as comprehensive.[38]

The Town of Ashland was founded as a small mid-nineteenth century summer resort called 'Slash Cottage.'[39] Located only 12 miles north of the Virginia capital, the growth of Ashland as a resort community was possible in the mid-nineteenth century because of a well-constructed network of roads. The development of the town was further aided by the increasing rail system, which extended into Hanover County in the 1830s and led to greater accessibility. The RF&P opened in 1836, quickly opening this area to those from Fredericksburg to the north and Richmond to the south. Due to increasing tourism and economic prosperity, the town of Ashland was established in the late 1840s as a mineral springs resort and grew rapidly.[40]

Shortly after its formation as a town, the country was thrust into Civil War. During the war, the town of Ashland was frequently occupied by troops. The local racecourse served as a training field for Confederate troops and many prominent buildings were converted into hospitals and quarters. After the conflict, America temporarily entered a recession and the town's resort experienced financial trouble. It was sold in 1868 to Randolph-Macon College, an all-male Methodist college then situated in Boydton, Virginia.[41] The relocation of Randolph-Macon College to Ashland in the late 1860s and construction of new buildings on campus in the 1870s and 1880s fueled economic growth in town and facilitated better educational opportunities throughout Hanover County.[42] This growth was supported by improvements to the RF&P rail system and the construction of the Richmond electric railway in the late-nineteenth century, which further connected Richmond and Ashland. As the economy was rebuilt and strengthened, Hanover County's population increased substantially. Though it had dipped to 16,455 in 1870, the county population increased to 18,588 by 1880.[43]

Economic growth in the town of Ashland gave rise to a significant building boom in the last quarter of the nineteenth century. By 1890, the population in town was six times that of 1860.[44] In that year, a new rail station was built to help shelter passengers traveling on the RF&P. The community continued to thrive with support of the railroad, functioning as a resting place for many travelers between Washington, D.C. and Richmond, with much activity taking place at the Georgian-Revival-styled Henry Clay hotel that was constructed in 1906.[45]

In the years after World War I, the town of Ashland experienced another building boom as improvements were made to the local water facilities, new houses constructed, a tobacco warehouse built near the edge of town, and a new fairgrounds laid out. Prominent brick buildings were also constructed downtown at this time, including the Hanover National Bank and several church buildings.[46] A devastating fire swept through downtown in the early 1920s, destroying the train station and several other buildings. During the rebuilding, the Town recognized that they needed a rail station that befitted their status as a primary stop along the RF&P. Located west of the tracks in the center of town, the new station, completed in in 1923, embraced Colonial

Revival tenets seen at other stations along the corridor, such as Alexandria, Fredericksburg, and Doswell.

The formal establishment of Route 1 to the east of downtown also brought additional people to the area in the first half of the twentieth century. Like many small towns in central Virginia, though, the establishment of I-95 in the 1950s brought a notable decrease in activity. Population growth stalled. Rail service ceased in 1967, and the train station shut its doors. It was not until 1985 that intercity passenger services were restored in Ashland; the train station, however, was not reactivated for passenger use at that time. It was reopened as the Visitor's Center in the early 2000s.

As defined in NHRP forms for the Ashland Historic District, currently the town includes a collection of late nineteenth- through mid-twentieth century residential and commercial architecture. These forms further define the oldest resources as "revival-style wood and brick structures, decorated with fanciful trim, that evoke the town's resort origins and its early-twentieth-century residential and commercial boom" and note "the residential neighborhoods that cluster around downtown, characterized by their large frame dwellings on spacious shaded lots, maintain Ashland's image as a nineteenth-century suburban community."[47]

3.1.2.2 Background Review/Summary of Previous Cultural Resource Studies

Numerous cultural resource studies have been conducted in Ashland. These primarily consist of studies aimed at recording the town's above-ground resources. The following summary of these research efforts focuses on compliance-based reporting that has been completed in the Ashland area. This discussion aims to better recognize the existing body of research and known resources; it also serves to frame a discussion of what factors informed DRPT's initial fatal flaw review and subsequent analysis of alternatives in relation to the history of the area, recorded resources, and public concerns.

The Ashland Historic District (166-0001) was defined, nominated, and listed in the Virginia Landmarks Register (VLR) in 1982 and in the NRHP in 1983.[48] Based on the 1982 NRHP nomination, the district encompasses nearly 250 resources (201 of which were identified as contributing) and features a mix of residential, commercial, civic, educational, religious, and light industrial resources. Significant historic themes identified in its nomination included architecture, commerce, education, government, religion, transportation, residential and community development. At this time, few changes appear to have substantially impacted the built environment within the district. In 2017 the Ashland Historic District was resurveyed and the NRHP was updated to reflect changes in the district from its original recording in 1982.[49] The 2017 survey and expansion of the district resulted in the addition of 111 contributing resources to the original 201 identified in 1982. Additionally, the 2017 update outlined 170 noncontributing resources.

The Randolph-Macon College Complex Historic District (166-0002), recorded in 1978, highlights a few of the oldest buildings at the core of this college campus, located in the historic town of Ashland.[50] Three, late-nineteenth-century buildings were initially included in the district and two other early-twentieth-century buildings have since been surveyed in association with the original historic core. These resources and the district retain a high level of historic integrity and possess the same architectural characteristics that merited listing in the NRHP in 1979 under Criteria A and C.[51]

In 1988, DHR awarded a matching grant to the Hanover County Board of Supervisors for a reconnaissance-level survey of Hanover County's historic resources conducted by Land and Community Associates.[52] This grant was specifically for the documentation and evaluation of 450 historic architectural resources located in Hanover County. A second phase of survey commenced in June 1991 to document an additional 400 architectural resources.[53] A combined report detailed the results of the Phase I survey for 950 properties, specifying exemplary and representative examples of several types of historic resources that existed in the county. Eligibility recommendations were made for all of the properties surveyed and of the 950 total, approximately 155 resources were recommended as potentially eligible for listing in the NRHP.

An archaeological investigation, led by staff at the Virginia Commonwealth University Archaeological Research Center, examined a 14-acre parcel of land at the southeastern end of the town of Ashland.[54] This Phase I archaeological survey was conducted in advance of the construction of a swimming pool at Carter Park and indicated that much of the property had been previously disturbed, no archaeological sites were identified as part of the investigation.

A Phase I archaeological investigation in the yard surrounding the Hanover Tavern (042-0035/042-0086-0005) was completed in 1998.[55] The investigation consisted of shovel testing and backhoe monitoring in advance on construction activities including buried utility installation, landscaping improvements, and curb installation. Numerous nineteenth-century artifacts were collected, and seven features were identified. Both identified features consisted of brick and mortar, presumed to be intact portions of brick foundations or walls related to no longer extant buildings on the property. Additional Phase II archaeological testing was recommended for portions of the Tavern property.

Ashley Neville and Brenda Pennington, of Ashley Neville LLC, completed an update of Hanover County's historic resources, which included an architectural survey of approximately 72,897 acres in western Hanover County in 2012.[56] 79 properties were recorded, and of those Neville recommended 10 for additional research to determine their NRHP potential: 042-5325, 042-5326, 042-5347, 042-5353, 042-5362, 042-5370, 042-5374, 042-5376, 042-5378, and 042-5387. Neville and Pennington recommended that the Beaverdam village be studied as a potential district and a Multiple Property Documents investigation of rural stores in Hanover County be conducted.

The DC2RVA Team conducted Phase I and Phase II studies in the Ashland vicinity. Archaeological studies included Phase IA and Phase IB surveys of the DC2RVA corridor, which included background review, historic research, GIS-based predictive modelling, and field investigations.[57] These studies noted a great deal of near surface disturbance in the corridor, and did not result in the identification of any new archaeological sites within the archaeological APE in Ashland. DC2RVA architectural studies in Ashland included a Phase I investigation that encompassed a portion of the corridor from North Doswell to Elmont, south of Ashland.[58] In this portion of the APE the team surveyed 264 historic architectural resources, 142 of which were previously recorded and 122 were newly recorded historic resources. These included the NHRP listed Ashland Historic District (166-0001) and Randolph-Macon College Complex Historic District (166-0002) in Ashland, and many individual properties within these districts. Based on this Phase I study and updates to the APE following the Draft EIS, Phase II studies were completed. Because changes to the APE eliminated Project-related improvements in Ashland, no Phase II investigation within the town were completed. However, Phase II investigations of nearby properties, including the Berkleytown Historic District (166-5073), were undertaken as part of this additional work.[59]

Beyond compliance studies, an abundance of work on the town's history has been done by local historians and volunteers. In particular, individuals associated with the Ashland Museum have compiled an abundance of data on area history and Ashland's built environment. This information can be found on site at the Museum and it is often used to create a rotating set of displays highlighting key moments in Ashland's past.

3.1.2.3 Discussion of In-Depth Review and Subsequent Analysis of Project Alternatives in Relation to History of the Area, Recorded Resources, and Public Concerns

Throughout the alternatives development, screening, and selection process for the Project, impacts to cultural resources were considered throughout the corridor. In Ashland particular concern was paid to existing above- and below-ground resources and to predicting the locations of yet un-identified areas of cultural sensitivity. Early in this review, the public raised concern about the impact rail infrastructure improvements would have on the known historic resources in Ashland, as much of the town and college historic districts are directly adjacent to the existing rail corridor. As such, DRPT took various steps to review and analyze alternatives in Ashland and their potential effect on cultural and historic resources.

Cultural resources were at the forefront of the Project design as the extant rail line traverses through the center of Town. Through scores of meetings, telephone calls, and emails between agencies, consulting parties, interested parties, and DRPT, all aspects of the Project design have been through thorough review to assure that cultural resources have been recorded and considered during Project planning. Details on the Project have also been shared repeatedly with the public through a series of general Project public meetings and articles in the local paper (refer to Appendix E for detailed information). The concerns of the impacts of the rail in this area resulted in the formation of a community-based committee to advise and inform DRPT on DC2RVA alternatives and issues in the Town of Ashland/Hanover County area.

The Town of Ashland, Ashland Museum, Hanover County, and Hanover County Historical Society, as well as statewide groups like American Battlefield Protection Program, Civil War Trust, National Trust for Historic Preservation, and Preservation Virginia have all been involved in the cultural resource process. Information on the history of Ashland, its built environment, and resource significance at the local level was garnered through this outreach, including tours of the Ashland Museum and other on-site meetings to carefully consider the rail in relation to historic properties. This data was then presented to DHR to solicit feedback on resource eligibility and Project effect to assure that all concerns were thoroughly vetted. These meetings, calls, and other communication efforts allowed DRPT to listen to the public and understand the resources they considered the most important to the area and place them within the Project context.

The coordination that occurred during this Project, along with guiding principles of the Section 106 legislative process, guided the Project-based technical studies completed in Ashland. This work included:

- Archaeological predictive modelling on the corridor to identify locations with the high potential to include unrecorded archaeological resources;[60]
- In-depth historic document and map review to create georeferenced overlays and identify potential historic resources;[61]

- Phase I and IA cultural resource surveys to identify above- and below-ground resources along all Project alternatives (see previous section for citations);
- Intensive-level architectural studies on five resources in the Ashland area including archival research, architectural analysis, and evaluation of NRHP eligibility with determinations on resource boundaries; and
- Integrated Project mapping and analysis to allow cultural resource specialists' input and agency in engineering design based on the results of survey and historic map/document review.

The technical studies were modified in 2017 and 2018 once a Preferred Alternative was selected (refer to Chapter 4 for details) and it was decided to not add a third track through downtown Ashland. This action reduced the area of potential effects for cultural resources through the downtown core. Information on this change was disseminated to all consulting parties and other interested groups, and additional meetings and coordination were held to discuss what this action meant for Ashland's historic properties. Details on the ensuing analysis can be found in Chapters 5 and 6 of this Final EIS.

3.1.2.4 Summary of Efforts to Avoid Areas of Concern to Assure Preservation in Place and, if Avoidance Was Not Possible, Minimize Any Potential Impacts to Cultural Resources

As a result of the analysis and public concern, FRA and DRPT selected a Preferred Alternative that does not include any rail infrastructure improvements between Vaughan Road and Ashcake Road, which includes the corporate limits of the Town of Ashland. The Ashland bypass alternatives were not selected. Refer to Chapter 4 of this Final EIS for details of the selection process. As such, the DC2RVA Project will avoid construction in all areas of concern regarding historic resources within the downtown Ashland core – refer to Chapter 5 for details.

Due to the proposed Vaughan Road overpass, DRPT met repeatedly with town representatives and cultural resource consulting parties to review Project plans and the boundaries of the Berkleytown Historic District (166-5073), which is situated at the north end of the Town of Ashland (see Appendix E for list of meetings). To the greatest degree possible, impacts to the district were minimized and building demolition was avoided through careful planning efforts. Additional information on the impacts of the overpass to this district can be found in Chapter 5 and 6 of this Final EIS.

3.1.2.5 Additional Studies Separate from the DC2RVA Project

Mitigation measures for resources that could not be avoided have been outlined in the Section 106 Draft MOA for the Project (see Appendix K of this Final EIS). They include additional studies including research, architectural analysis, archeological excavations, public outreach and other tasks. Beyond these mitigation measures, information shared by agencies and the public, combined with the research conducted by DRPT, reveal many future historic research projects outside the scope of the DC2RVA Project that may be completed by the locality or others with a vested interest in the area history. While no resources specifically associated with the slave trade were identified during this study in Ashland, the community was in existence as a thriving resort town during the antebellum period.

The extensive history of this area leads to numerous other avenues for historical inquiry. Future studies on individual resources that are not adversely affected by the Project could include NRHP

nominations as well as interpretive signage. Work on the districts could involve working with the Town to use the 2017 Project survey data to expand their NRHP boundaries and helping Randolph-Macon College get NRHP listing for their campus district expansion.

Archaeologically, the background review illustrates that few formal archaeological studies are on file with DHR and only a handful of Ashland archeological sites have been recorded in the area. The potential for intact, significant sites is moderate to high throughout town. Sites that may reveal data on Ashland's past include the site of the 1880 train station, the location of the original 1840s resort complex, and surrounding fields once occupied by Civil War soldiers.

Beyond technical studies, information derived from various stages of research can also be displayed at the Ashland Museum. The staff has a robust collection of rotating exhibits, and data on ongoing studies can be added to this roster to create new presentations to help teach the public about the important history of this area.

3.1.3 Richmond Main Street Station/Shockoe Bottom Area

3.1.3.1 Abbreviated History of Richmond and Shockoe Bottom

As noted above, the portion of the DC2RVA Preferred Alternative within the Shockoe Bottom portion of Richmond was highlighted as an area of cultural resource sensitivity. As such, a brief history of the area is provided here, however, the history of Richmond and Shockoe Bottom has been extensively documented.[62] Richmond was founded at the falls of the James River by William Byrd II in 1733 and was laid out by Major William Mayo in 1737.[63] The main focus of economic and governmental activity in newly established Richmond was concentrated in the eastern portion of the city, along the banks of Shockoe Creek and adjacent Church Hill. Shockoe, also known as Rock Landing, a granite outcropping at the confluence of Shockoe Creek and the James River, marked the upper limit of navigation on the James. Given its geography and physiographic location this landing, and others, made Richmond an important port city that served to connect the fertile Virginia Piedmont with the James River and eventually ocean ports.[64] As such, the area surrounding this historic location of Shockoe Creek (including Shockoe Valley, Shockoe Slip, and Shockoe Bottom) encompasses some of Richmond's earliest residential, commercial, and manufacturing activity.

The Virginia General Assembly voted to move the state capital from Williamsburg to Richmond in 1799, as Richmond was considered more secure from British invasion and more centrally located.[65] During the first half of the nineteenth century, with the aid of slave labor, Richmond continued to grow as a city by expanding trade, manufacturing, and transportation infrastructure. The James River served as the epicenter for economic and commercial development; as such, warehouses were constructed along the waterfront to house materials that moved through the docks.[66] The construction of the James River and Kanawha Canals, along with the 1834 completion of the first railroad lines in the city, continued to make Richmond an essential node in the regional transportation system. Trade goods primarily included agricultural products of sugar and tobacco, but also encompassed the buying and selling of enslaved individuals. As noted by Chen and Collins, "the presence of slavery and the business of buying and selling bondsmen was an essential element in Richmond's development as one of the preeminent cities in the south during the antebellum period."[67] By the turn of the nineteenth century the center of the slave trade in Richmond was concentrated along the north bank of the James River, in the vicinity of Shockoe Bottom. This trend continued through the first half of the nineteenth century, with the most prolific activity occurring in the 1830s and 1840s.

During the mid-nineteenth century, Richmond "played a unique role in the Civil War, serving not only as the Confederate capital, but also as the chief manufacturer for the Southern war effort."[68] Richmond's population swelled as government officials and politicians of the newly established Confederacy and their families relocated.[69] Capturing the capital was a main objective of the Union Army, and the Peninsula and Petersburg Campaigns were fought largely with that goal in mind. After repelling the Federals during the 1862 Peninsula Campaign, the Confederates constructed a ring of fortifications around the city. Despite the defenses, repeated pounding from northern artillery erased large stretches of Richmond. In 1865, the City was on the verge of falling. Just prior to the Union capture of the City, fires were set by Richmonders in many of the riverside warehouses to prevent the Union Army from taking possession of the contents. Fires ignited to destroy the tobacco warehoused along the James spread west beyond Shockoe Bottom into the business district. Explosions demolished the powder magazine and fire destroyed over 900 buildings, three bridges, several tobacco warehouses and two railroad depots.[70]

At the close of the Civil War, the rebuilding of Richmond, with a concentration on the scorched business district, began in earnest. By 1870, the riverfront was up and running again, with the tobacco industry once again returning as the mainstay of Richmond's economy. The railroad lines were also quickly repaired, helping to slowly revive Richmond's post-war economy.[71] As the nineteenth century drew to a close, Richmond's presence as a prominent southern port city began to decline. The decline of the port combined with local politics and competition between the various rail lines serving Richmond shifted the focus from water-based to rail-based transportation of goods. The improvements in the rail system had a notable effect on the physical fabric of the Shockoe Bottom area. The Seaboard Air Line Railroad selected this area as the site of their new Richmond station. Construction of the station, associated train shed, rail lines, warehouses, and other facilities required extensive reworking of the landscape, including channeling Shockoe Creek through concrete culverts and bringing in 40 to 50 feet of fill to level the landscape. This activity buried the remaining historic and prehistoric deposits in this area below many feet of earth. Buildings were demolished, and archaeological sites were destroyed. The new station, completed in 1901, changed the Shockoe Bottom area, bringing many passengers to this part of town and elevating the economy and enriching the building stock.

During the twentieth century, Richmond's geographical extent expanded. The retail and office district downtown continued to grow, with Jackson Ward, a neighborhood directly northwest of the downtown core, becoming a center of African-American commerce and culture. Similarly, construction of both houses and apartments rose east of Shockoe Bottom in the Oakwood-Chimborazo district during the 1920s, notably in Glenwood Park.[72] The Shockoe Bottom area was notably impacted in the mid-twentieth century through the construction of I-95, which bisected the city and required the demolition of numerous buildings. Lying east of I-95, the Shockoe Bottom area was, in essence, cut off from the remainder of the downtown core to the west of I-95. Partially as a result of this new highway, there was a resurgence of building in the downtown area, though the residential population continued to move westward, as more and more of the western "suburbs" became part of the City. In the 1970s and 1980s, downtown became less and less the center of Richmond's commercial life, as strip malls and office parks were built farther out into the counties of Henrico, Hanover, Chesterfield, Powhatan and Goochland. In the 1990s, however, developers began once again to focus on the historic downtown area, gradually expanding north and east to Church Hill and Shockoe Bottom.

3.1.3.2 Background Review/Summary of Previous Cultural Resource Studies

Given its location, just east of the heart of downtown Richmond, and its rich history, the Shockoe Bottom area has been the subject of numerous cultural resource studies. As such, the area consists of a myriad of overlapping historic districts, known above-ground resources, and recorded archaeological sites. For the purposes of this discussion, efforts will focus on the robust body of research and compliance-based reporting that has been completed in the general vicinity of Main Street Station and the greater Shockoe Bottom area. This discussion aims to better recognize the existing body of research, the known resources, and frame a discussion for understanding what factors informed DRPT's initial fatal flaw review and subsequent analysis of alternatives in relation to the history of the area, recorded resources, and public concerns.

Main Street Station (127-0172; 127-0344-0117), at times referred to as the Seaboard Airline Station, Chesapeake & Ohio Station, or Main Street Station and Trainshed, was listed in the VLR in 1970 and the NRHP places in 1976.[73] As recorded, the resource includes the terminal building of Main Street Station and a trainshed to the north of the terminal. As noted in significance statement in the NRHP form, the resource is "one of Richmond's most renowned buildings" and "symbolizes the importance of the rail terminal as an entrance gateway to the city". Its style is a significant example of the influence of the French Ecole des Beaux Arts on American architecture. The trainshed is one of the earliest examples of rigid truss construction, which has become standard in modern trussed structures of all types. The facility ceased being used as a rail stop in the 1970s. It was briefly used as a shopping mall and to house the public health department in the 1980s prior to a commitment from the City to reuse the building in its original transportation capacity. In 1997 a historic structures report was completed for Main Street Station in support of multimodal transportation center renovations/upgrades related to expanded passenger service.[74] This study found that the Main Street Station and the Trainshed retain the character and essence of their original design. Phased renovations were proposed in an effort to revitalize the building and spur economic activity within the larger Shockoe Bottom area.

The Shockoe Valley and Tobacco Row Historic District (127-0344) was defined, nominated, and listed in the VLR in 1981 and in the NRHP in 1983.[75] Based on the NRHP nomination, the district encompasses nearly 129 acres inclusive of 400 resources, within the low-lying area surrounding Shockoe Creek along the James River, including portions of Union and Church Hill. In 2008 and 2015, the building inventory of the Shockoe Valley and Tobacco Row Historic District was updated through a windshield survey of all extant resources in the district.[76] This 2015 update concluded that there are 244 resources that contribute to the district's NRHP eligibility, while there are 140 resources that do not contribute to the NRHP eligibility. The DC2RVA Preferred Alternative is within the viewshed of several contributing resources within the district and within the district itself.

In the early 1990s, a number of archaeological sites were identified, evaluated, and monitored in association with the Richmond Floodwall project and in support of U.S. Army Corps of Engineers permitting of the project. Project construction was completed in 1994, however, various archaeological studies were completed in support of the construction efforts in the late-1980s and early 1990s. Unfortunately, archaeological reports were never completed in association with the Richmond Floodwall project, so little is known about parameters of the investigations or their detailed results. DHR site records do indicate that there are three archaeological sites (44HE1094, 44HE1097 and 44SHE1098) associated with this project recorded within the footprint of the DC2RVA Preferred Alternative. Site 44HE1094 is recorded in DHR site files as a nineteenth-

century Commissary Warehouse, site 44HE1097 is recorded as a railroad warehouse dating to the nineteenth century, and site 44HE1098 is classified as a railroad site.

The Southeast High Speed Rail corridor between Richmond and Raleigh was the subject of several cultural resource investigations. These included the APE surrounding the rail corridor itself as well as the APE of all road modification areas surrounding the rail line. Work was conducted between 2004 and 2012 by Mattson, Alexander and Associates, Inc., Louis Berger Group, Inc. (Berger), and Dovetail.[77] The results of these studies have been individually coordinated with DHR, including the submission of reports and Digital Sharing Service (DSS)/ Virginia Cultural Resource Information System (V-CRIS) forms to the agency as well as formal resource eligibility recommendations for listing in the NRHP. Project effect determinations, on individual historic properties as well as the Richmond to Raleigh (R2R) segment of the SEHSR project as a whole, were acquired in 2009 and 2013. A total of 74 historic properties listed in or eligible for the NRHP were identified within the DC2RVA Project APE. Specifically, in the City of Richmond, these studies identified 10 historic properties, of which one is an archaeological site and nine are above-ground resources. A Memorandum of Agreement associated with the R2R project to outline stipulations to mitigate adverse effects to these resources and the larger project was completed in 2017.

In 2006 and 2008, the James River Institute for Archaeology conducted archaeological investigations at the Lumpkins Slave Jail site (44HE1053).[78] The larger Lumpkins Jail project was initiated in 2005 when DHR and the Alliance to Conserve Old Richmond Neighborhoods embarked in a partnership to locate the site, known only at that time by historical accounts and records. The site, which was located using georeferenced historic maps and targeted archaeological investigations, is located approximately 130 feet west of the DC2RVA Preferred Alternative limits of disturbance (LOD). The archaeological investigations at site 44HE1053, which included preliminary investigations (2006) and subsequent data recovery investigations (2008), documented a portion of the former Lumpkins Slave Jail property (including a kitchen, the jail building, several outbuildings and landscape features) and unearthed over 16,000 artifacts related to the occupation of the property from the 1830s through the twentieth century. Archaeological investigations at the Lumpkins Slave Jail site documented the presence of intact nineteenth century deposits almost 15 feet beneath the modern ground surface.

In 2006 and 2007 the Johannas Design Group compiled a draft multiple property documentation form for what they termed the "Slave Trade as a Commercial Enterprise in Richmond, Virginia" (127-6196).[79] The property form establishes a historic context for the commercial industry of slave trade in Shockoe Bottom and along Shockoe Creek. It additionally defines property types characteristic of the slave trade in Richmond including residences, hotels and meeting halls, jails, auction houses, and offices. Given the nature of the multiple property listing and the lack of above-ground components, no geographic footprint is represented in DHR geospatial dataset available online or in the archives. As such there is no physical resource recorded at DHR or any other repository that is associated with this topic. The form concludes that extant above-ground resources associated with the commercial enterprise of the slave trade within the geographic area are extremely limited due to historic fires and modern development. The form also highlights that the potential for yet-undiscovered archaeological sites associated with this context are high.

Work at the Lumpkins Slave Jail/Devil's Half-Acre site (44HE1053) and research associated with the Slave Trade as a Commercial Enterprise NRHP form brought to light the presence of the former Richmond free black and slave burial ground known as the "Burial Ground for

Negroes" and associated gallows, reported in the historical record to be located just north of the Lumpkins Slave Jail site, some 350 feet from the DC2RVA Preferred Alternative LOD. In 2007 and 2008, the presumed general location of the burial ground was at least partially on a lot owned by Virginia Commonwealth University (VCU), at 1554 East Broad Street and 1520 East Marshall Street. In 2007, VCU hired Draper Aden Associates to conduct an environmental assessment of the parcel, which was at that time in use as a parking lot.[80] As part of this environmental work a series of soil cores were extracted to examine the structure of the deposits underlying the asphalt parking area. At least three of these cores (recorded as MW-1, MW-4, and MW-5) were excavated within 100 to 150 feet of the presumed burial ground. All three cores showed the presence of 8 to 9 feet of dark fill below the asphalt. In one core, MW-1, the fill deposits capped 1.5 feet of clay, beneath which was 1 foot of black organic deposits that rested on sand. The remaining two cores showed fill resting immediately on basal sand deposits. Interpretations of the organic deposits in MW-1 suggested an intact and preserved historic layer underneath twentieth century fill. The assessment of thick deposits of fill capping historic deposits is consistent with the conclusions drawn at Lumpkins Slave Jail site.

In 2008, DHR gathered a variety of historical maps and documents in an effort to better locate the former "Burial Ground for Negroes" (ca. 1750-1816).[81] This work resulted in the verification of the past presence of the resource, the location of its assumed boundaries on the modern landscape, and recommendations about the potential integrity and treatment of the resource. Also as a result of this work, the Burial Ground for Negroes was assigned an archaeological site number, 44HE1089. Based on historic map projections, archival research, and informant interviews, Stephenson concluded that the majority of the site lies underneath I-95, however, it is possible that the site extends approximately 50 feet to the east into an adjacent parcel (at the time of the Stephenson report the adjacent parcel was a paved parking lot owned by VCU, however it has since transferred ownership to the City of Richmond and has been converted into a green space with interpretative signage). Stephenson used soil core samples (see discussion above pertaining to the Draper Aden Associates 2007 report) from the site and compared the landform of 44HE1089 to that of Lumpkins Slave Jail site (44HE1053), concluding that both locations likely underwent similar filling episodes as a result of the infill of Shockoe Creek in 1900 as well as the 1950s construction of I-95. As such, it is assumed that burials may still be intact within the mapped site boundaries beneath a minimum of 15 to 20 feet of historic fill; however, no archaeological investigations were undertaken to confirm the presence of interments. Site 44HE1089 is located approximately 350 feet from the DC2RVA Preferred Alternative.

In response to Stephenson's 2008 validation and assessment of the Burial Ground for Negroes, the Institute for Historical Biology at the College of William and Mary reviewed DHR's and Stephenson's findings.[82] Although this review agreed with many key findings of Stephenson's report, the review took issue with the eastern boundary previously established and contended that given the ambiguity of the historic record, there is insubstantial documentary evidence to conclude that the burial ground only extends 50 feet outside of the I-95 footprint. Instead, Blakey concluded that the primary resource data, or lack of clear data, points clearly to the need to archaeological testing to determine the extent of the burial ground east of I-95.

Based on the 2008 work completed by Stephenson and Blakey, Cultural Resource Analysts, Inc. (CRA), completed archaeological monitoring of the asphalt removal overlying the potential Burial Ground for Negroes (44HE1089).[83] The project involved the removal of asphalt from the approximately 2.5-acre former VCU parking lot located at North 16th and E. Broad Streets. Archaeological monitoring was undertaken as the former parking lot was converted into a green-

space, this conversion required the removal of approximately 10 inches of the asphalt and gravel. As noted by Laird and by Draper Aden Associates, Simpson concluded that the historic site 44HE1089 is likely buried under 15 to 20 feet of fill, deposited during former occupations and the construction of I-95. As such, no archaeological features or deposits were noted during the work, which reached a maximum depth of 10 inches below the modern surface.

In April of 2008, Archaeological Consultants of the Carolinas, Inc. (ACC) conducted a Phase I archaeological survey of an entire city block in the Shockoe Bottom area.[84] The block, bound by Marshall, East Broad, 18th, and 19th Streets, is situated approximately 1,000 feet northeast of Main Street Station. The objective of this survey was to determine the presence and integrity of any archaeological deposits within the block. To this end, extensive archival research was completed and was followed with trench excavation to expose and assess deposits within the project area. Three trenches were excavated, exposing 0.05 percent of the project area. All three showed evidence of cultural features and buried ground surfaces, intact beneath the modern surface. Cultural deposits were noted 1.2 to 1.33 feet beneath the asphalt covering the block.

In 2010 Dovetail conducted a Phase I cultural resource survey of the Broad Street Bus Rapid Transit (BRT) project area in the City of Richmond and Henrico County, Virginia.[85] This undertaking included an architectural survey of the 7-mile project corridor along Broad Street and archaeological survey in areas with the potential for intact soils. The project corridor was split into nine areas (A through I) with each area representing a geographical segment of the larger project APE. The segment spanning the Shockoe Bottom area was identified as Area I and included a survey of all above-ground resources in the vicinity. Dovetail surveyed 145 architectural resources within the APE of the Broad Street corridor in Area I, all of which had been previously recorded. Of these 145 properties, Dovetail recommended 133 as not eligible for individual listing on the NHRP. Two previously recorded properties were determined eligible by DHR, but are recommended not eligible as a result of that survey (043-0306 and 127-0413). Furthermore, it was recommended that eight previously determined eligible resources remain eligible for NRHP listing: 127-0100, 127-0172, 127-0192, 127-0219, 127-0344/127-6169, 127-0257, 127-0854, and 127-6271 and that four resources be considered potentially eligible for NRHP listing: 127-0192-0322, 127-0219-0059, 127-0282, and 127-0344-0123. DHR concurred with these recommendations in a letter dated January 20, 2011. The BRT project corridor was revisited in 2015, based on the selection of BRT station locations which expanded the APE.[86] The APE expansion included the location of a BRT station at the intersection of E. Main Street and 24th Street within the vicinity of Shockoe Bottom. The 2015 architectural survey in support of this station location identified three industrial properties: the Tobacco Factory (127-0018; 127-0192-0279), Cameron Building (12-0344-0039), and Leaf Storage Building (127-0344-0393), all of which were recommended not eligible for inclusion in the NRHP as individual resources.

In advance of the proposed widening of Interstate 64, Dovetail and CRA completed archaeological investigations and a geoarchaeological assessment of the purported "Slave and Free Black Burying Ground" (44HE1203), a second interment area used after the "Burial Ground for Negros" was closed.[87] The archaeological investigation, completed on behalf of VDOT, included the excavation of a series of backhoe trenches used to assess the stratigraphy and presence of archaeological features within the 0.68-acre project area. The project area was situated immediately underneath the I-64 overpass over Shockoe Valley, north of Hospital Street. This project area lies partially within the DC2RVA archaeological APE and thus the footprint of the Preferred Alternative. Extensive documentary, map, and background research as to the location and extent of the purported "Slave and Free Black Burying Ground" was conducted by VDOT in

advance of the archaeological investigation.[88] Despite overwhelming documentary evidence of the "Slave and Free Black Burying Ground," no physical archaeological evidence was documented in the project area. Instead, the geoarchaeological assessment indicated that the project area stratigraphy consisted of varying degrees of modern fill deposited on top of truncated ancient marine soils. No interment features or nineteenth century artifacts were noted in the project area, and the authors concluded that the documentary and geoarchaeological analysis indicated the cemetery was likely located outside the project area, at the crest of the valley slope immediately to the west of the project area and east of the extant Shockoe Hill Cemetery (127-0389) and Hebrew Cemetery (127-6166). This location, as proposed by Calhoun, is currently recorded as Talley's Auto Service Center, located at 1305 N 5th Street (127-6660).

In 2014 Dutton + Associates completed a cultural context and thematic study in association with the Revitalize RVA project.[89] This research defined a study area in Shockoe Bottom to the east and outside of the current DC2RVA Preferred Alternative and aimed to establish a comprehensive history of the area. Beyond the background review data assembled, the study identified slave trade sites, ethnic/cultural heritage sites, commerce sites, and railroad sites within the study area. These identified locations were then synthesized into areas of archaeological interest, which were areas thought to potentially represent significant and yet undiscovered archaeological resources.

As a part of DC2RVA, DRPT conducted Phase I and Phase II studies in Shockoe Bottom and vicinity. Archaeological studies included Phase IA and Phase IB surveys of the DC2RVA corridor, which included background review, historic research, GIS-based predictive modelling, and field investigations.[90] These studies noted a great deal of near-surface disturbance in the corridor, yet resulted in the identification of four previously recorded archaeological sites (44HE0357, 44HE1097, 44HE1098, and 44HE1094) and two newly recorded archaeological sites (44HE1203 and 44HE1204) within the archaeological APE in the Shockoe Bottom area. DC2RVA architectural studies in the Shockoe Bottom area included a Phase I investigations.[91] This Phase I study resulted in the recordation 96 historic architectural resources and of these, 9 previously recorded and 87 newly recorded historic resources were identified. Based on the results and recommendations put forth during this Phase I investigation, a Phase II architectural evaluation was completed on five resources (127-0197, 127-0344-0102, 127-0344-0123, 127-6129, and 127-6793).[92]

The most recent studies separate from the DC2RVA Project have included investigations to ascertain the potential for a memorial park in this area. The City of Richmond and numerous private interest groups have sponsored studies to identify components to include in a park highlighting the significance of the slave trade in this area and general African-American history.[93] Studies are ongoing.

3.1.3.3 Discussion of In-Depth Review and Subsequent Analysis of Project Alternatives in Relation to History of the Area, Recorded Resources, and Public Concerns

Potential impacts to cultural resources were considered at numerous stages in the alternatives development, screening, and selection process starting at the inception of the environmental document in 2014. Over the past four years, almost 20 in-person meetings and dozens of phone calls have occurred between DHR, ACHP, FRA, and DRPT. All aspects of the Project design have been reviewed to assure that cultural resources have been studied and taken into consideration during Project planning. This includes constant dialogues between cultural resource specialists and engineers to ensure that design plans take cultural resources into account during planning. Additional details on evaluation of all alternatives can be found in Chapter 4 of this Final EIS.

Information on the Project has also been shared with the public through a series of general Project public meetings and area-specific meetings. Specific to cultural resources, numerous consulting parties with an interest in this area have been participating in the process including: NPS (Richmond), City of Richmond, and Historic Richmond Foundation, as well as groups whose interests span the Commonwealth like American Battlefield Protection Program, Civil War Trust, National Trust for Historic Preservation, and Preservation Virginia. In addition, numerous other groups were invited to share their comments on the significance of the area and provide ideas on mitigation to impacts, including the Shockoe Bottom Neighborhood Association, Historic Shockoe Partnership, Elegba Folklore Society, Sacred Ground project, Black History Museum Virginia, Untold RVA, Virginia African American Cultural Resources Task Force, Southern Environmental Law Center, Community Unity in Action, Richmond Branch of the NAACP, Wesley Memorial United Methodist Church, VCU Department African American Studies, Richmond Crusade for Voters, First Unitarian Universalist Church, and Sacred Ground Historical Reclamation project. The goal of this outreach was to harness information on significant historic properties in the area to assure it was adequately considered during Project design.

Beyond formal consulting party coordination, DRPT has attended numerous meetings with local groups and localities to understand the public's interest in this area. Meetings with the City of Richmond have focused on an understanding of their ongoing preservation initiatives in this area and establishment of archaeological easements and protection zones. DRPT also sought to understand their initiatives for other improvements in the Shockoe Bottom area to place the current Project in context, including upcoming road modification projects, new parking areas, improvements to the 17th Street Market, and the recently completed Pulse Bus Rapid Transit system. VDOT was also consulted to understand future plans regarding I-95 access ramp upgrades. Beyond these, DRPT participated in the Urban Land Institute/Rose Center forum initiated by the mayor of Richmond to help organize future planning initiatives in this area, attended meetings with Richmond Archaeology, and others.

Based on the known history of this area and extensive coordination, DRPT conducted the following technical studies in Richmond to aid in the analysis of alternatives in relation to the historic context, recorded resources, and public concerns:

- Archaeological predictive modelling on the corridor to identify locations with the high potential for un-recorded archaeological resources;[94]
- In-depth historic document and map review with georeferenced overlays to identify potential historic resources;[95]
- Phase I cultural resource surveys to identify above- and below-ground resources within the Preferred Alternative (see previous section for citations) resulting in the recordation of over 100 architectural resources and half a dozen archaeological sites in the area of potential effect in the Shockoe Bottom area;
- Intensive-level architectural studies on over 20 resources within the city including archival research, architectural analysis, and evaluation of NRHP eligibility with determinations on resource boundaries; and
- Integrated Project mapping and analysis to allow cultural resource specialists to provide input in engineering design based on the results of survey and historic map/document review to avoid and minimize impacts.

3.1.3.4 Summary of Efforts to Avoid Areas of Concern to Assure Preservation in Place and, if Avoidance Was Not Possible, Minimize Any Potential Impacts to Cultural Resources

Great care was taken by DRPT to avoid areas of historic sensitivity unidentified via cultural resource studies, historic document/map analysis, and public comments. The Phase IA archaeological study of the Project corridor aimed to predict areas of archaeological sensitivity based on a variety of cultural and environmental factors.[96] This study was used to guide two Phase IB archaeological studies that included on the ground testing of areas within the archaeological APE to identify archaeological sites. Phase I and II architectural studies identified and evaluated above-ground resources within the architectural APE. Combined, these studies identified numerous cultural resources within the Shockoe Bottom area. The locations/boundaries of these resources were taken into consideration at various stages of the design/engineering process and the Project's footprint was minimized to the greatest degree possible to avoid archaeological sites and potential impacts to above-ground resources.

During the course of the above-mentioned cultural resource studies, historic documents and maps were consulted and analyzed to understand the complex history of the Shockoe Bottom area. To this end, GIS software was employed to georeference these historic documents to the modern landscape, in an effort to further identify yet undiscovered archaeological sites within the archaeological APE. Based on this mapping exercise, the locations of historic buildings, which are no longer visible above ground, were identified and additional archaeological sites were recorded. Maps from various time periods were consulted and georeferenced to the modern landscape in an effort to capture yet unrecorded archaeological resources throughout the historic use of the Shockoe Bottom area, as shown in Figure 3.1-3, 3.1-4, and 3.1-5.[97] The results of this historic document analysis were closely coordinated with engineering/design and, where possible, were used to reconfigure Project design to minimize Project impacts on identified resources. For example, historic maps and overlays were carefully analyzed in association with Project plans near the early-nineteenth century "Slave and Free Black Burying Ground" (44HE1203) located near Hospital Street. Through this dialogue, the Project design was altered to reduce the footprint to ensure that no potential portions of the cemetery would be touched during the Project (see Figures 3.1-3 through 3.1-5).

Additional avoidance measures were taken based on comments from the Project consulting parties and the general public. Dozens of in-person meetings, conference calls, letters, and emails were exchanged to thoroughly understand public concerns in the Shockoe Bottom area, culminating in an on-site meeting with vested groups on October 12, 2018. Through these dialogues, the Area of Potential Effects was expanded as appropriate to include the study of a wider geographic area and an expanded definition of the Area of Potential Effects within the Shockoe Bottom area. In particular, the Lumpkins Jail/Devil's Half Acre archaeological site (44HE1053), the Slave and Free Black Burying Ground site mentioned above (44HE1203), and Masons Hall (127-0019) were added to the roster of historic properties. In addition, several additional resources are being considered as contributing elements to the Shockoe Valley and Tobacco Row Historic District (127-0344), which includes most of the Shockoe Bottom area. All of these resources were evaluated for both Section 106 effect and 4(f) use as part of the Project to minimize impacts.

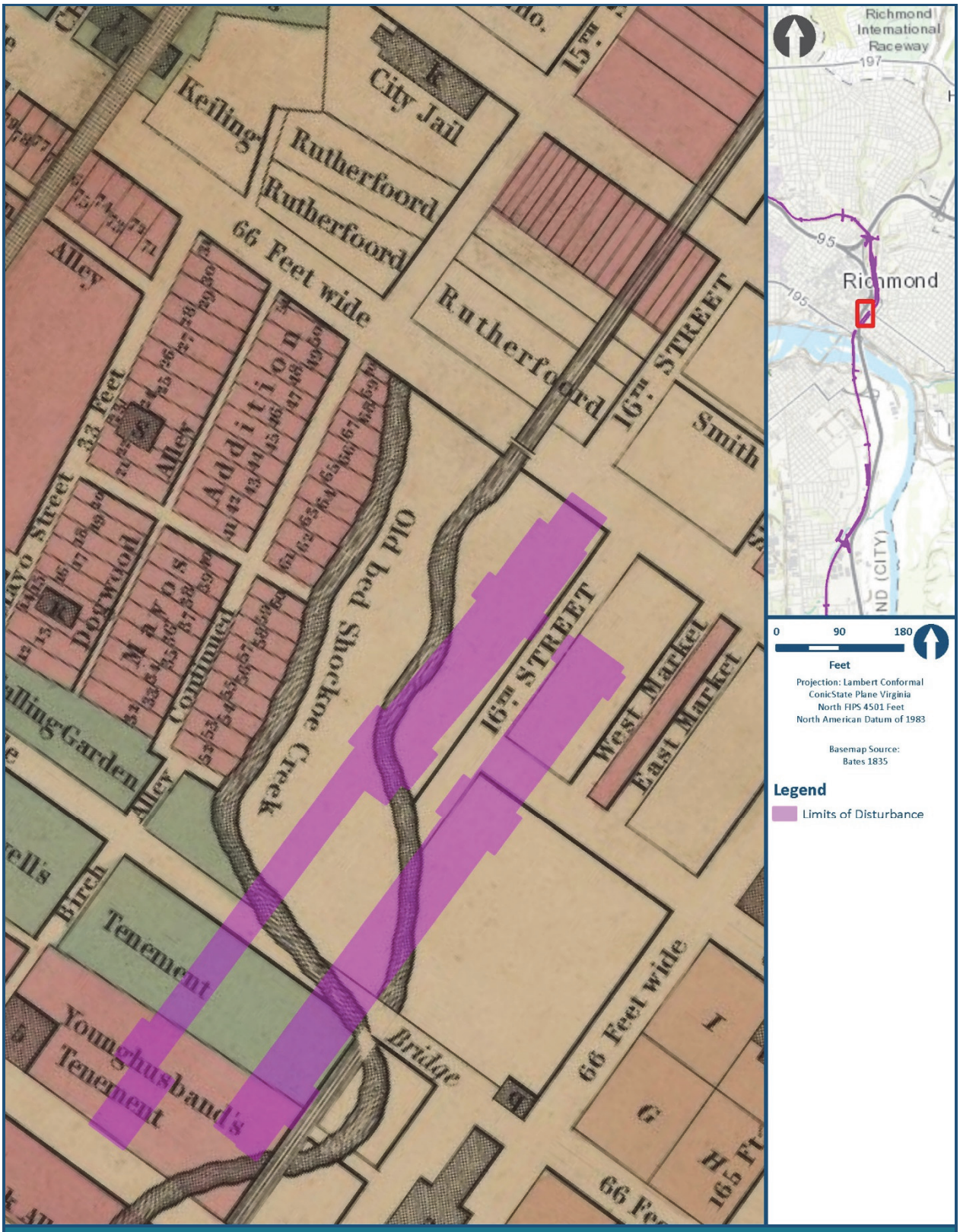

Figure 3.1-3: Limits of Disturbance Overlaid on 1835 Bates Map of Richmond

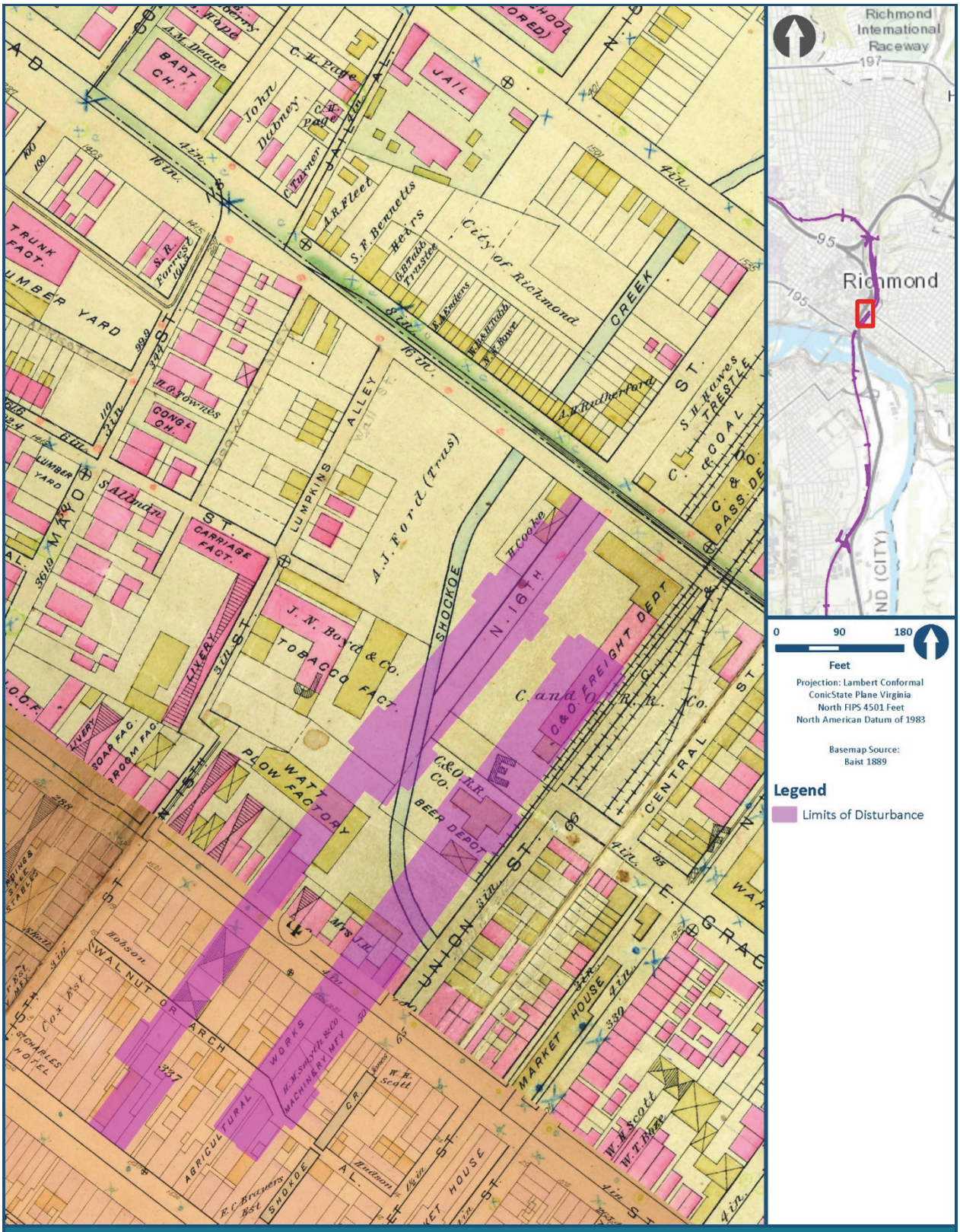

Figure 3.1-4: Limits of Disturbance Overlaid on 1889 Baist Map of Richmond

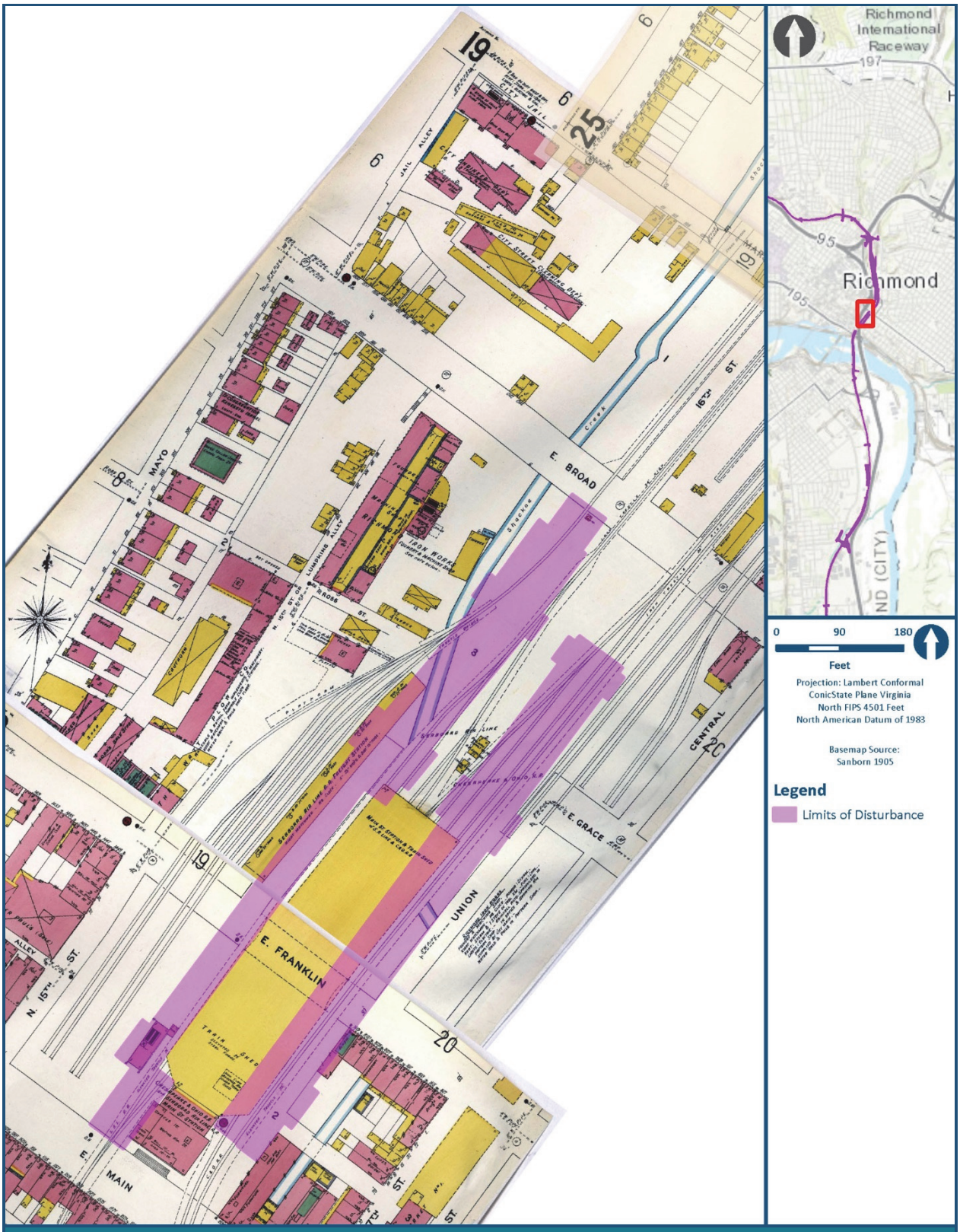

Figure 3.1-5: Current Limits of Disturbance Overlaid on 1905 Sanborn Map of Richmond

3.1.3.5 Additional Studies Separate from the DC2RVA Project

In places where resources could not be avoided and impacts minimized, mitigation measures have been outlined in the Section 106 Draft MOA for the Project (see Appendix K of this Final EIS) that include additional studies including research, architectural analysis, archeological excavations, public outreach and more. Beyond these mitigation measures, the public comment and consultation process as part of the DC2RVA Project highlighted the need for future/additional historical studies of the Shockoe Bottom area that may be completed by the City or others with a vested interest in area history. Although beyond the scope of the DC2RVA studies, it is important to recognize and explore the significant history of Shockoe Bottom and especially the lives of enslaved individuals. To this end, four areas of additional studies have been identified: research, archaeological studies, public interpretation, and planning initiatives, which are outlined in Table 3.1-1.

Table 3.1-1: Summary of Additional Studies Separate from the DC2RVA Project

Research
Propose, delineate, and evaluate a Shockoe Valley Slave Trade District Evaluation to record the locations of potential sites with DHR; to be done in concert with existing City of Richmond research and preliminary draft multiple property documentation on file with DHR, done by Johannas Design Group in 2007.
If the district listed above is determined to be eligible for the NRHP and pending City and property owner approval, the Shockoe Slave Trade Historic District would be nominated to the NRHP.
Creation of a compendium of literature, including diaries, letters, quotes, imagery, maps, oral histories, etc., on the experience of the enslaved individual in Richmond.
Creation of historic context of the RF&P Railroad and its association with the Virginia slave trade, linking locations including Richmond, Fredericksburg, and Alexandria.
Archaeological Studies
Investigations, including additional archival research, at the "Slave and Free Black Burying Ground" (44HE1203) near Hospital Street to identify the location of potentially intact interments.
Additional archaeological studies on known sites, including Devil's Half Acre/Lumpkins Jail (44HE1053) and "Burial Ground for Negroes" (44HE1089).
Archaeological excavations (Phase I, II, and III as appropriate) on areas identified during the Shockoe Slave Trade Historic District evaluation study to potentially contain sites.
Public Interpretation
Work with James River Institute for Archaeology, RVA Archaeology, Dutton+Associates, and others with knowledge of this area to create an interactive webpage on the history and significance of this area.
Use the data gathered during the webpage development to create a booklet on the history and significance of this area.
Work with the City of Richmond, Richmond City Council Slave Trail Commission, Historic Richmond, RVA Archaeology and others to add to the existing Richmond Slave Trail walking tour and interpretative signage on the history of this area inclusive of historic overlay maps to recreate the antebellum landscape.
To accompany the walking tour listed above, creation of a mobile application with map overlays to allow the visitor to experience the landscape in a digital medium.
Creation of additional interpretive signage on the history of this area.
Area Planning Initiatives
Work with the City on a continued holistic preservation and interpretive plan for the Shockoe Bottom area.

3.2 REFINED OPERATIONS ANALYSIS MODELING

DRPT conducted computer-based operations simulations (also known as operations modeling) to estimate rail performance in the corridor in order to estimate if Build Alternatives defined in the Draft EIS might be anticipated to provide the infrastructure capacity and service performance necessary to meet the Purpose and Need of the DC2RVA Project. This work was conducted using Rail Traffic Controller (RTC) simulation software.

This section summarizes the results of that analysis, both within the DC2RVA corridor as well as in the larger CSX Transportation (CSXT) network, to inform the selection of a Preferred Alternative. It builds on previous operations simulation modeling conducted during preparation of the Draft EIS and incorporates subsequent revisions to the infrastructure and operating plans that were developed to improve operational consistency and reduce delays associated with schedule conflicts within the DC2RVA corridor.

Full details of the refined operations analysis modeling are provided in the technical memos in Appendix F of this Final EIS; description of how the refined operations analysis modeling led to the selection of a Preferred Alternative is provided in the DC2RVA Recommendation Report, which is Appendix I of this Final EIS.

3.2.1 Overview of Preliminary Operations Modeling Conducted in the Draft EIS

During the preparation of the Draft EIS, DRPT conducted several preliminary operations simulations that evaluated multiple infrastructure alternatives, including alternatives with two tracks and three tracks, potential two track bypasses in Fredericksburg and Ashland, and alternate routes through Richmond. DRPT evaluated these preliminary operations simulations against the Project's Purpose and Need to: accommodate 9 new daily intercity passenger round trips (18 total trains per day); accommodate projected CSXT freight growth; accommodate planned and funded Virginia Railway Express (VRE) commuter rail growth; and meet the federal passenger and freight train on-time performance targets through 2045 as set forth in the Passenger Rail Investment and Improvement Act (PRIIA).[98]

The train performance estimates derived by DRPT from this preliminary comparison of alternatives suggested that either a third main track through Fredericksburg and/or Ashland or a two-track bypass around Fredericksburg and/or Ashland would provide the highest likelihood that trains throughout the Project corridor would meet their performance goals under the service level and schedule projected. The train performance estimates also informed the selection of the Richmond-area Build Alternative 6F, Staples Mill Road Station and Main Street Station (Full Service) as the Recommended Preferred Alternative for the Draft EIS, which by having both a downtown station and a suburban station was determined to best meet the Purpose and Need. These preliminary modeling results are presented in Chapter 2.6 of the Draft EIS and its Appendix I.

3.2.2 Refined Operations Analysis Modeling Methodology

After submission of the Draft EIS, DRPT followed its preliminary operations simulation efforts with two phases of refined operations analysis modeling to help inform the selection of a Preferred Alternative for the entire corridor, each of which are summarized below.

3.2.2.1 Two Phases of Refined Operations Modeling

The two phases of refined operations modeling encompassed the following work:

Phase 1: Refined Operations Analysis. The purpose of the refined operations analysis was to improve the performance results of all trains operating on the corridor by applying modifications to the proposed infrastructure and operating plan based on assessments of the preliminary operations modeling assumptions and results from the Tier II Draft EIS. The levels of service for all trains were not changed from the preliminary analysis, which are summarized in Section 4.2.2 of this Final EIS. The refined operations analysis simulations had the following objectives and characteristics:

- Measure passenger and freight train performance focused on performance within the DC2RVA corridor, and not include analysis of contiguous sections of shared-use track north and south of the corridor.
- Review and revise the configuration of the proposed infrastructure to improve operational consistency and performance along the corridor, including
  - Changes to the Project's proposed track infrastructure, in particular reconfigured crossovers, sidings, and station platforms, including:
    - Changes to interlocking configurations to provide full universal access to all tracks at certain locations.
    - Infrastructure changes and additional infrastructure to allow for the staging of full-length freight trains at various locations in the corridor.
- Review and revise the operating characteristics and assumptions applied to the model to reduce delays associated with schedule conflicts:
  - Incorporation of a platform assignment plan for intercity passenger and commuter trains operating within the corridor. The platform priority assignment was applied to all intercity passenger and commuter trains along the DC2RVA corridor from Washington, D.C. to Centralia, VA to represent a "typical" operating condition with minimal passenger-commuter train interference; however, the operations analysis allowed intercity passenger trains in certain sections of the corridor to use another track or serve a different station platform if required due to capacity constraints or interference with commuter trains.
  - Revision of intercity passenger train schedules between Washington and Richmond, where feasible, to capture changes in passenger train running times and recovery times made to enable trains to achieve PRIIA-mandated (see Section 3.2.1) and Project-specific on-time performance goals in normal real-world operation under the revised corridor infrastructure and platform assignment plan described above.

Phase 2: Network-Wide Analysis. The work in this phase consisted of running operations simulations to estimate potential effects to passenger, freight, and commuter train performance within a larger territory of the CSXT and connecting Buckingham Branch (BBRR) networks in the Mid-Atlantic and Northeastern United States, to estimate the potential effects of the Project on rail operations in territory adjacent to the DC2RVA corridor. The Network-Wide Analysis simulations had the following characteristics:

- The revised infrastructure, operating, and train schedule modifications made for the Phase 1 modeling were applied in the Phase 2 modeling.

- Passenger and freight train performance were measured across a larger portion of the shared-use rail network, which included contiguous sections of the CSXT and BBRR networks in the Mid-Atlantic and Northeastern United States programmed into the simulation software that constituted the DC2RVA Modeling Limits.
  - Performance was measured on a shared-use network of track from Philadelphia, PA, and Cumberland, MD, to Newport News, VA, and Rocky Mount, NC.
- Additional freight train performance outputs were generated.

3.2.2.2 Modeling Scenarios for Phases 1 and 2

The modeling scenarios simulated by DRPT were identical for Phases 1 and 2 and consisted of the following four Build cases and one No Build case.

- **2045 No Build.** This case measured performance on the DC2RVA corridor with the No Build infrastructure and no-build train operations (without adding 18 new intercity passenger trains) identified in the DC2RVA Draft EIS, including freight traffic levels forecasted for the year 2045. This case did not include maintenance-of-way outages.
- **2045 Build.** This Build case measured performance on the DC2RVA corridor with infrastructure that reflects the Preferred Alternative for the DC2RVA corridor, with a test of the three-track alternatives in Area 5 (i.e., Build Alternatives 5B and 5D-Ashcake as analyzed in the Draft EIS) through Ashland. This case included 9 new daily intercity passenger round trips (18 total trains per day) in addition to the No Build train operations. This case did not include maintenance-of-way outages.
- **2045 Build, 2 Tracks Ashland.** This Build case measured performance on the DC2RVA corridor with infrastructure that reflects the Preferred Alternative for the DC2RVA corridor, with a test of the two-track alternative in Area 5 (i.e., Build Alternative 5A, also known as "3-2-3," as analyzed in the Draft EIS) through the Town of Ashland. This case included 9 new daily intercity passenger round trips (18 total trains per day) in addition to the No Build train operations. This case did not include maintenance-of-way outages.
- **2045 Build, 2 Tracks Ashland + Track Out of Service North (Maintenance-Of-Way Outage).** This Build case measured performance on the DC2RVA corridor with infrastructure that reflects the Preferred Alternative for the DC2RVA corridor, with a test of the two-track alternative in Area 5 (i.e., Build Alternative 5A, also known as "3-2-3," as analyzed in the Draft EIS). This case included a randomly selected segment of approximately 10 miles in length between Alexandria and Crossroads that would be taken out of service in order to test the response of the network to a daytime maintenance-of-way (i.e., rail upkeep and repair) outage. This case included 18 new daily intercity passenger trains (9 round-trip) in addition to the No Build train operations. For comparison to the other four scenarios listed, this is the only scenario that included maintenance-of-way outages.
- **2045 Build, 2 Tracks South of Crossroads.** This Build case measured performance on the DC2RVA corridor with infrastructure that reflects a modification to the Preferred Alternative with three main tracks from Alexandria to Crossroads and reduced to two main tracks from Crossroads to Richmond Staples Mill Road. This case included 18 new daily intercity passenger trains (9 round-trip) in addition to the No Build train operations. This case did not include maintenance-of-way outages.

In all cases described above, the infrastructure alternatives were tested for proposed operations in the year 2045, which represents the concluding year of a 20-year horizon for the Project, based on the Project's proposed implementation year of 2025 (refer to Section 1.3.6 for details on Project planning dates). Refer to Appendix F of this Final EIS for full details on modeling scenarios.

3.2.3 Refined Operations Modeling Results

The performance estimates generated during the refined operations analysis simulations were benchmarked against performance goals for freight and passenger trains that were established by DRPT for the DC2RVA Project and by FRA under PRIIA.

In the corridor-wide modeling simulation testing the Preferred Alternative for the full length of the DC2RVA corridor with three main tracks from Alexandria to Richmond Staples Mill Road except for a constrained two-track alignment in Area 5 through Ashland (i.e., Alternative 5A, also known as "3-2-3") without maintenance-of-way outages ("2045 Build, 2 Tracks Ashland"), passenger trains exceeded the Project's endpoint station and all-stations performance goal of 90 percent on-time performance. Comparative to the No Build 2045 freight operating condition without maintenance-of-way outages ("2045 No Build"), the estimated cumulative freight train performance with two tracks through Ashland (measured in delay minutes per 100 train-miles) had a reduction of 2.4 minutes.

In the network-wide modeling case testing the Preferred Alternative for the full length of the DC2RVA corridor with three main tracks from Alexandria to Richmond Staples Mill Road except for a constrained two-track alignment in Area 5 through Ashland (i.e., Alternative 5A, also known as "3-2-3") without maintenance-of-way outages ("2045 Build, 2 Tracks Ashland"), passenger exceeded the Project's endpoint station performance goal of 90 percent on-time performance. The network-wide simulation estimated that two tracks through Ashland could increase freight delay per 100 train-miles by 0.5 minutes from the No Build 2045 freight operating condition without maintenance-of-way outages.

Based on the refined operations analysis, DRPT and FRA have determined that the Build Case with two tracks through Ashland under 2045 freight traffic, and with 9 new daily intercity passenger round trips (18 total trains per day) from the DC2RVA Project ("2045 Build, 2 Tracks Ashland" without maintenance-of-way outages), provides the infrastructure required to meet the Purpose and Need of the Project while not unduly impacting CSXT's forecasted future freight operations in the No Build case ("2045 No Build" without maintenance-of-way outages).

Passenger Service Operating in the DC2RVA Corridor

3.3 TOWN OF ASHLAND/HANOVER COUNTY COMMUNITY ADVISORY COMMITTEE RECOMMENDATIONS

The purpose of this section is to report the recommendations of the Town of Ashland/Hanover County Community Advisory Committee (CAC) that supported the selection of the Preferred Alternative. The Preferred Alternative is presented separately in Chapter 4 of this Final EIS. For summary of the CAC and its activities, refer to Section 2.1.4.3 of this Final EIS. Additionally, Appendix G of this Final EIS provides full detail of CAC purpose and approach, members, meeting dates, and review of alternatives that were considered by the CAC.

Shortly before the publication of the Draft EIS, DRPT established the CAC to advise and inform DRPT on DC2RVA alternatives and issues in the Ashland/Hanover County area. Over the course of five months, the CAC reviewed and fully evaluated over 30 different alternatives for the Town of Ashland/Hanover County area, including alternatives suggested by the public and alternatives developed by the CAC, in addition to alternatives and options that were considered in the Draft EIS (refer to Appendix G). During this time, DRPT continued to refine the operations analysis modeling of alternatives (as described in Section 3.2 above), and a qualitative presentation of draft preliminary passenger train performance estimates from the corridor-only simulations was made to the CAC. The CAC determined that many of the alternatives were not practical and also recognized that all of the alternatives would have substantial adverse impacts to residents, commercial interests, and communities, and would be objectionable to one or more groups of stakeholders.

Passenger Service through Downtown Ashland, Virginia (Area 5)

After careful and deliberate consideration of the options for increased rail capacity in the Ashland/Hanover area, the CAC chose not to endorse any specific alternative and instead provided recommendations for three "least objectionable" alternatives:

- **Modified Alternative 5A.** The "3-2-3" option (i.e., maintaining two tracks through Town) was determined by the CAC to be the least objectionable option for adding rail capacity through the Town of Ashland at-grade. In this option, a third track would be added to the existing CSXT right-of-way north and south of the Town of Ashland, while the existing two tracks would remain in service through Ashland. If necessary to meet passenger and performance goals, the downtown Ashland station could be closed, based on analysis at the time of that decision. Road overpasses would be added at Vaughan Road and Ashcake Road. The crossing at England Street would remain at-grade. *[This option is similar to Build Alternative 5A that was evaluated in the Draft EIS, with further minimization of infrastructure and associated potential impacts within downtown Ashland.]*
- **Three-Track Trench.** A three-track trench through the Town of Ashland was determined by the CAC to be the least objectionable option for adding capacity below-grade. A trench would be constructed through Ashland approximately 50 feet wide and 33 feet deep, extending from north of Vaughan Road to south of Ashcake Road. The two existing tracks through the Town of Ashland, along with a third new track, would pass through Ashland within the trench. The trench would be provided with strategically placed covers interspersed with open areas, allowing for motor vehicle and pedestrian crossings, landscaping, and other amenities. Details associated with the placement and length of covered spaces would be determined in final design. The downtown Ashland station would be closed. *[This below-grade option followed a through-town alignment similar to Build Alternatives 5B or 5D as evaluated in the Draft EIS, but was considered and dismissed in the Draft EIS alternatives development process.]*
- **Modified Alternative 5C and 5C-Ashcake.** The western bypass closest to the Town of Ashland, identified as AWB 1 in the Draft EIS alternatives development process, was determined by the CAC to be the least objectionable option for adding rail capacity outside the Town of Ashland—with the provision that the alignment would be adjusted to avoid directly impacting a children's daycare facility on State Route 54, and to minimize impacts to residential properties. In this option, a two-track bypass approximately seven miles long would extend around the Town of Ashland to the west, along the town/county border. Roads bisecting the new bypass alignment would be re-routed or grade-separated to avoid creating any new at-grade road/rail crossings. The Ashland station could remain in service. *[This bypass alignment is reflective of Build Alternative 5C as evaluated in the Draft EIS, but with a modified alignment. The AWB1 alignment was considered and dismissed in the Draft EIS alternatives development process.]*

The CAC also recognized that regardless of the alternative ultimately recommended, mitigation for the adverse impacts would need to be considered, and the CAC members committed to working with DRPT and other stakeholders on the mitigation.

Refer to Section 3.4 below for summary of selection of the Preferred Alternative by the Commonwealth.

3.4 COMMONWEALTH TRANSPORTATION BOARD RESOLUTION

The Commonwealth Transportation Board (CTB) passed a resolution for the recommendation of a Preferred Alternative for the DC2RVA Tier II EIS on December 6, 2017, referred to as the Commonwealth's Recommended Preferred Alternative, as presented in Table 3.4-1 below. The resolution is included in this Final EIS as Appendix H. The CTB issued the resolution following review of the Draft EIS and agency, stakeholder, and public comments on the Draft EIS received during the public comment period, plus ongoing coordination with DRPT and other stakeholders and the public (refer to Section 2.3 of this Final EIS for details). The CTB resolution aligned with DRPT's Recommended Preferred Alternative as presented in the Draft EIS. Additionally, the CTB resolution aligned with the CAC Recommendation (as described in previous Section 3.3): Alternative 5A meets the Purpose and Need for the DC2RVA Project with the least amount of impacts in the Ashland/Hanover area, and would have no Section 106 or Section 4(f) impacts (where all other alternatives considered or developed by the CAC included at least some impacts to cultural or historic resources). Per Section 4(f) of the U.S. DOT Act of 1966, unless the use of such a property is determined to have a *de minimis* impact, FRA must determine that no feasible and prudent avoidance alternative exists before approving the use of such land (see Chapter 6 of this Final EIS for further details).

Table 3.4-1: CTB Recommended Preferred Alternative

Alternative Area 1: Arlington (Long Bridge Approach) *	
1A	Add Two Main Tracks on the East
1B*	Add Two Main Tracks on the West
1C	Add One Main Track East and One Main Track West
Alternative Area 2: Northern Virginia	
2A	Add a Third or Fourth Main Track
Alternative Area 3: Fredericksburg	
3B	Add a Third Main Track Through City
Alternative Area 4: Central Virginia	
4A	Add a Third Main Track
Alternative Area 5: Ashland	
5A	Maintain Two Tracks Through Town (No Station Improvements), Add a Third Main Track North and South of Town
Alternative Area 6: Richmond	
6F	Staples Mill Road Station and Main Street Station Full Service with S-Line Improvements

* The CTB recommended selection of the Preferred Alternative to be based on compatibility with the Long Bridge EIS alternatives. Subsequent to the CTB resolution, FRA selected Alternative 1B as the Preferred Alternative, to align with the Long Bridge alternatives – refer to Section 4.1 of this Final EIS for details.

Further, the CTB resolved the following directives to DRPT in regard to future rail improvements in Alternative Area 5:

- If DRPT determines that additional rail capacity is needed in Alternative Area 5 to meet the performance standards required for additional passenger trains, DRPT shall conduct a new study based on updated information.
- DRPT shall avoid and/or minimize any permanent property acquisitions, to the extent practicable, in areas where only two mainline tracks on the current alignment are recommended, and to avoid any permanent property acquisitions related to the DC2RVA Project that would affect the operations of Randolph-Macon College.
- DRPT shall explore the need for other potential improvements in downtown Ashland (Alternative Area 5) that will help protect the safety of motorized and non-motorized roadway users, and to facilitate emergency access, separate from the DC2RVA Project.

3.5 DC2RVA RECOMMENDATION REPORT

DRPT prepared a Recommendation Report to present the Commonwealth's Recommended Preferred Alternative for the Project to FRA for inclusion in this Final EIS. The Recommendation Report is Appendix I of this Final EIS and includes an acceptance letter of the report from FRA. The purpose of the report was to summarize the Commonwealth's Recommended Preferred Alternative and rationale leading to the selection of the Preferred Alternative for each area. The Recommendation Report includes a summary of comments received on the Draft EIS, other public involvement, and additional refined operations analysis modeling that provided input into the selection process. The content of the Recommendation Report is presented in Chapter 4 (Selection of the Preferred Alternative) of this Final ES.

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