New River Valley Passenger Rail Station Feasibility Study

June 2022

Executive Summary

On May 5, 2021, the Governor of Virginia announced that the Commonwealth of Virginia (the "Commonwealth" or "Virginia") reached an agreement with Norfolk Southern Railway (NS) to extend passenger rail service along the former Virginian Line from Roanoke, Virginia to the New River Valley (NRV), Virginia for the first time since 1979.

The Governor's announcement outlined the formal discussions between NS and the Commonwealth to purchase 28 miles of right-of-way and tracks along the Virginian Line from the Salem Crossovers west of Roanoke to Merrimac (Christiansburg, Virginia). Following the acquisition of right-of-way and tracks, the Commonwealth intends to improve the existing rail infrastructure, which will allow for passenger rail extension to the NRV area. The planned rail infrastructure improvements include adding a new passenger platform and related infrastructure to support a rail station and passenger service in the NRV. The effort to locate and identify the least impactful area for a rail station in the NRV is the focus of the Virginia Passenger Rail Authority (VPRA) led New River Valley Passenger Rail Station Feasibility Study (the "Study").

The Study was conducted from the Fall 2021 to the Spring 2022. The purpose of the Study was to use the existing studies and analysis that had occurred in the NRV region by a host of regional stakeholders and government entities to identify and select a feasible passenger rail station location and prepare the necessary technical work to advance to the environmental process and potentially obtain a National Environmental Policy Act of 1969 (NEPA) Class of Action determination from the lead federal agency, most likely the Federal Railroad Administration (FRA), if a federal environmental action is required.

As identified in the Study narrative, the analysis included an extensive four-month public outreach effort to reach out to:

- Private property owners who were directly impacted based on a potential station concept design
- Key stakeholder focus groups consisting of government, educational, and advocacy groups
- Online surveys to reach out to the general public
- Two public meetings

The public meetings presented the results of a three-stage screening analysis, which was based on a purpose and need statement developed by the Study. A preliminary environmental review was developed with the screening analysis to determine potential environmental impacts within the study areas and within the impact limits of a station concept design. Additionally, a high-level cost estimate and a brief constructability analysis were developed for each station concept to determine comparative, order-of-magnitude costs for and constructability of a potential NRV station site.

Generally, the Study had a number of findings, which are summarized briefly below. Additional details outlined in this summary can be found in the Study chapters and appendices that follow.

Background

Background information for the Study relied on previous studies that were developed in the region and that examined locating a passenger rail station in the NRV.

- Passenger rail served the NRV until 1979
- Eleven previous studies generally identified:
  - A public desire to restart passenger rail services to the NRV
  - A technical analysis of the ridership and costs associated with locating a station in the NRV
  - Physical identification of potential rail station locations in the NRV

Based on the previous studies, five (5) proposed locations for a passenger rail station were examined and are identified in **Figure ES-1** below.

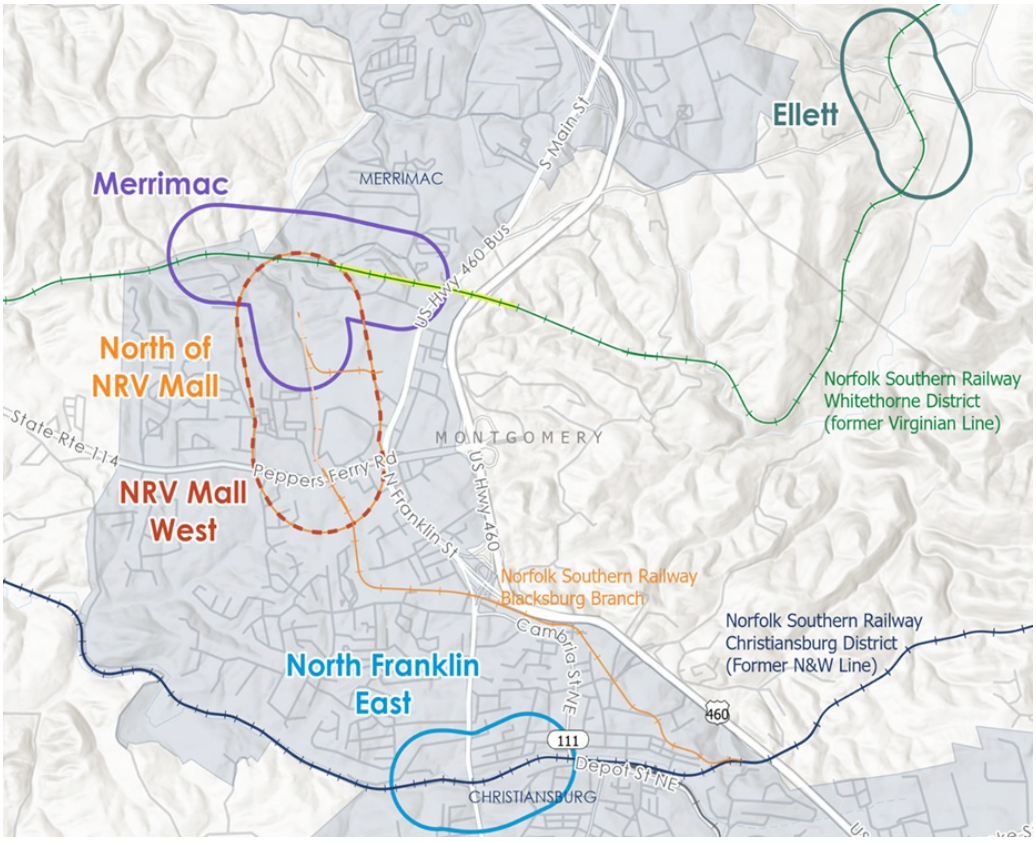

FIGURE ES-1: NRV PROPOSED STATION STUDY AREAS IDENTIFIED IN PREVIOUS REGIONAL STUDIES

Study Approach and Analysis

As described above and in **Chapter 2,** the Study Approach was developed from existing regional studies to identify potential physical locations for stations, determine the purpose and need for a station, develop a screening analysis to identify the impacts of a passenger rail station, and determine the feasibility of a potential location for a passenger rail station in the NRV region. The entirety of the analysis was based on a desktop review of available information

listed in **Chapter 1.2.2** and the analysis and reporting identified in the appendices. A summary of the findings for the Study Approach and Analysis is below.

- The Study team developed a purpose and need statement that focused on three purposes and three needs that an NRV Passenger Rail Station (NRV Station) would need to achieve.
- The screening analysis was developed based on the elements of the purpose and need statement, the environmental review, and physical characteristics examined in the appendices regarding the potential station sites to determine the most feasible physical location of a passenger rail station in NRV.
- Passenger station concepts were developed in accordance with Amtrak Station Program and Planning Guidelines dated February 2019 and with the available information from the desktop review of the stations.
- Concept designs were based on the ridership demand, current station design standards, the need for a high platform to serve the station, transportation access to and from the station, and a request from the NRV Regional Commission (NRVRC) to house future office space adjacent to the station.
- Each potential passenger rail station location examined in the Study required off-site infrastructure improvements to support transportation access to the station.
- Off-site infrastructure improvements included on and off-street improvements to support transit, pedestrian, and bicycle access to and from the station, and the track improvements required to support serving a station, including a railroad track connection from the Virginian line to the Blacksburg Branch.

Based on the results of the screening analysis summarized in **Table ES-1** below, the NRV North (NRV-N) and NRV West (NRV-W) sites were identified as the most feasible alternatives. Feedback received during the public outreach period of the Study found that the majority of the public is generally supportive of these locations as the most feasible alternatives for an NRV Station.

TABLE ES-1: SCREENING SUMMARY

Screening	Alternatives				
	NRV-N	NRV-W	Ellett	Merrimac	North Franklin East
Screening One –Operational Screening	☑	☑	☑	☑	☒
Screening Two – Comparison Study Area Analysis	☑	☑	☑	☑	N/A
Screening – Comparison Alternative Screening	☑	☑	☒	☒	N/A
Retained for Further Study	☑	☑	☒	☒	☒

Although not included in the actual screening analysis, Capital Cost Estimates were prepared for each of the conceptual layouts developed for Screening Three. These estimates provide an approximate order of magnitude comparison between the alternatives. To determine capital costs for the proposed station alternatives, the Study examined the Station System and Off-Site Infrastructure costs associated with each station location. The Capital Cost Estimates outlined in **Chapter 4.2** and summarized in **Table ES-2** were estimated to be:

TABLE ES-2: CAPITAL COST ESTIMATES

Station Alternative	Station Systems Cost ($M)	Off-Site Infrastructure Cost ($M)	Total Capital Cost ($M)
NRV Mall West Site	$34.7	$21.4	$56.1
NRV Mall North Site	$35.8	$21.4	$57.4
Merrimac Site	$49.8	$25.6	$75.4
Ellett Site	$80.1	$97.2	$177.3

* Costs are an order of magnitude estimate due to the number of unknown conditions at this level of study.

The Capital Cost Estimates included a 40 percent contingency appropriate to this level of study to off-set unknown costs associated with each alternative. Generally, the Capital Cost Estimates depicted above include, but are not limited to, the following:

- Station System Costs
    - Station track and turnouts
    - Fencing
    - Passenger platform
    - Signals
    - Order of magnitude earthwork
    - Caretaker station
    - Bridging structures
    - Retaining walls
    - Parking areas
    - Roadway access
    - Shared-use path, where applicable
    - Future 10,000 square foot expansion for community space
- Off-Site Infrastructure Costs
    - Track and turnouts for connecting track to the NRV Mall sites
    - Roadway improvements to site
        - 0.8 miles for Merrimac
        - 2.5 miles for Ellett
    - Intersection improvements and signalization for Merrimac and Ellett sites
    - Order of magnitude earthwork
    - Shared-use path improvements to site
        - 2.5 miles for Ellett

The following exclusions to the capital cost estimates presented below are representative, but not comprehensive, at this level of analysis:

- Right of way acquisition
- Environmental and permitting costs
- Existing utility relocations
- Mitigation for impacts that will be determined by the NEPA process
- Pedestrian Bridge
- Engineering design and technical considerations

- Constructability of the NRV-N and NRV-W stations will have fewer challenges than the other station locations.
- Anticipated time to complete the project is presented in **Figure ES-4** and summarized below:
  - Environmental Review and 30% Engineering — 9 to 18 months
  - Architectural/Engineering Design — 6 to 18 months
  - Construction — 12 to 30 months
  - **Total to Opening Day** — **27 to 66 months**

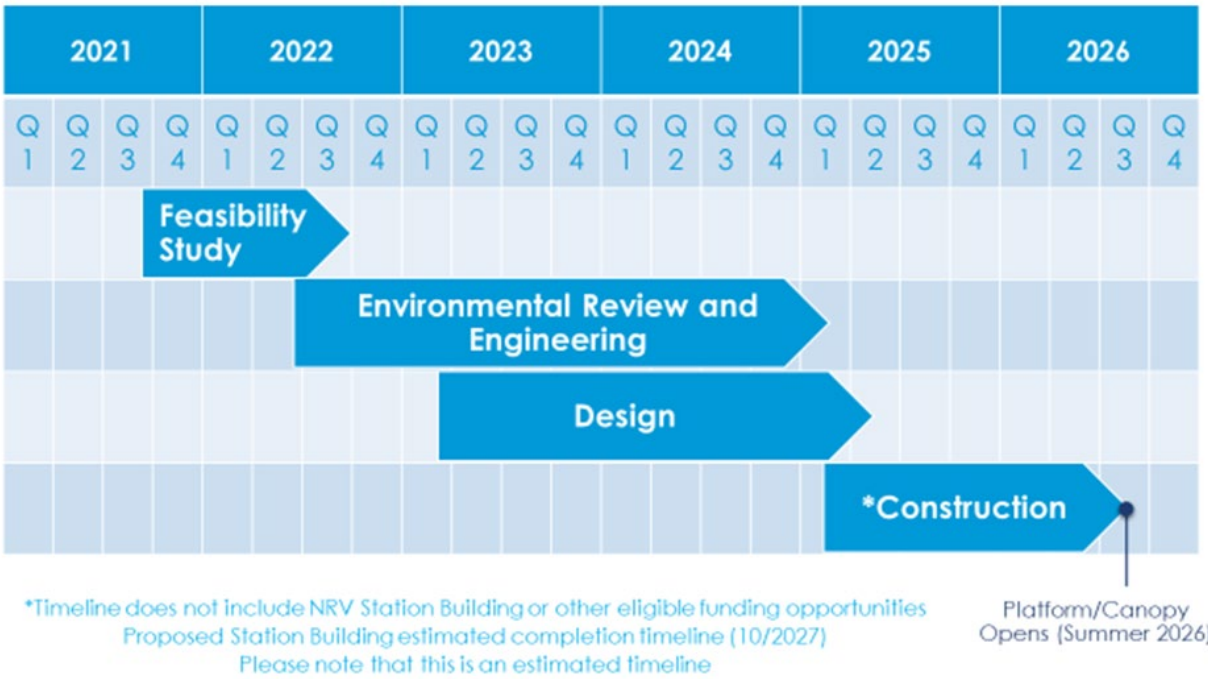

FIGURE ES-2: ANTICIPATED PROJECT TIMELINE

From these findings, the Study concluded that locating an NRV Station adjacent or near the NRV Mall (Uptown Christiansburg) is a feasible and logical next step in expanding passenger rail service to southwest Virginia. The following, high-level findings can be made regarding the next steps following this Study:

- **NRV-N and NRV-W should move forward to the environmental process and engineering design.**

  North Franklin East was dismissed due to fatal flaws related to railroad operations. Ellett and Merrimac were dismissed due to significant negative major concept design differences.

- **If federal funding is awarded, an Environmental Assessment (EA) may be the FRA recommended NEPA Class of Action determination but is dependent on the review and recommendation by the FRA**.

  VPRA will continue to coordinate with the federal government to address avoidance, minimization, and mitigation for environmental impacts. If federal funding is awarded for the Project, the recommendation that two station alternatives be advanced requires an EA to assist with additional environmental screening and evaluation to select a preferred alternative. It should be noted, that, upon review, the FRA may choose to recommend a different type of NEPA document.

- **Passenger rail service to the NRV may begin in the Summer of 2026 with the completion of a platform/canopy.**

  A realistic opening date for a subsequent station building is late-2027.