



Appendix B Screening Results Tables

June 2022



1 Screening Results

Guided by the Purpose and Need, which was developed using existing studies and plans adopted in the region, a three-step screening process was applied to the five (5) potential passenger rail station locations. Screening One was a fatal flaws assessment that eliminated any locations that were operationally infeasible. An environmental inventory at each study area was conducted in Screening Two. Screening Three examined the anticipated environmental impacts of a conceptual passenger rail station and related station-supporting transportation infrastructure to serve each proposed alternative. For a comprehensive assessment of the impacts considered in the screening process see **Appendix C**.

1.1 Screening One –Operational Screening

Screening One assessed whether the construction of a passenger rail station at each location was achievable with existing restrictions. Access, track geometry, and conflicts between freight and passenger trains at each location were vetted to establish the practicality of passenger rail service.

TABLE 1.1: SCREENING ONE – OPERATIONAL SCREENING RESULTS

Criterion	Alternatives				
	NRV-W	NRV-N	Ellett	Merrimac	North Franklin East
Safety	✓	✓	✓	✓	✗
Track Geometry	✓	✓	✓	✓	✓
Operations	✓	✓	✓	✓	✗
Retained for Further Study	✓	✓	✓	✓	✗

NRV-W is the New River Valley Mall West location

NRV-N is the North of the New River Valley Mall location

The proposed North Franklin East location on the former N&W Line has an operational “red flag” issue. In the first screening criteria, track geometry was consistent amongst concepts reviewed. Because of the agreement between NS and Virginia, the best opportunity for passenger operations and safety was found to exist on the Virginian Line or to sites located on the Blacksburg Branch due to lesser operational impacts to existing N&W main line rail operations and safety. As the North Franklin East site would require operations on the N&W Line, and would be more disruptive to operations and safety, the site was dismissed as a candidate for further screening. The NRV-W, NRV-N, Ellett, and Merrimac sites all met the criterion for operational

screening and were retained for further analysis. Retained locations are shown in **Table 1.1** and **Figure 1.1**.

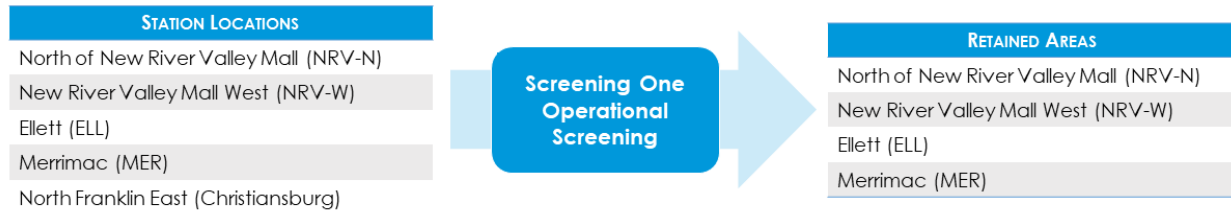


FIGURE 1.1 SCREENING ONE RESULTS

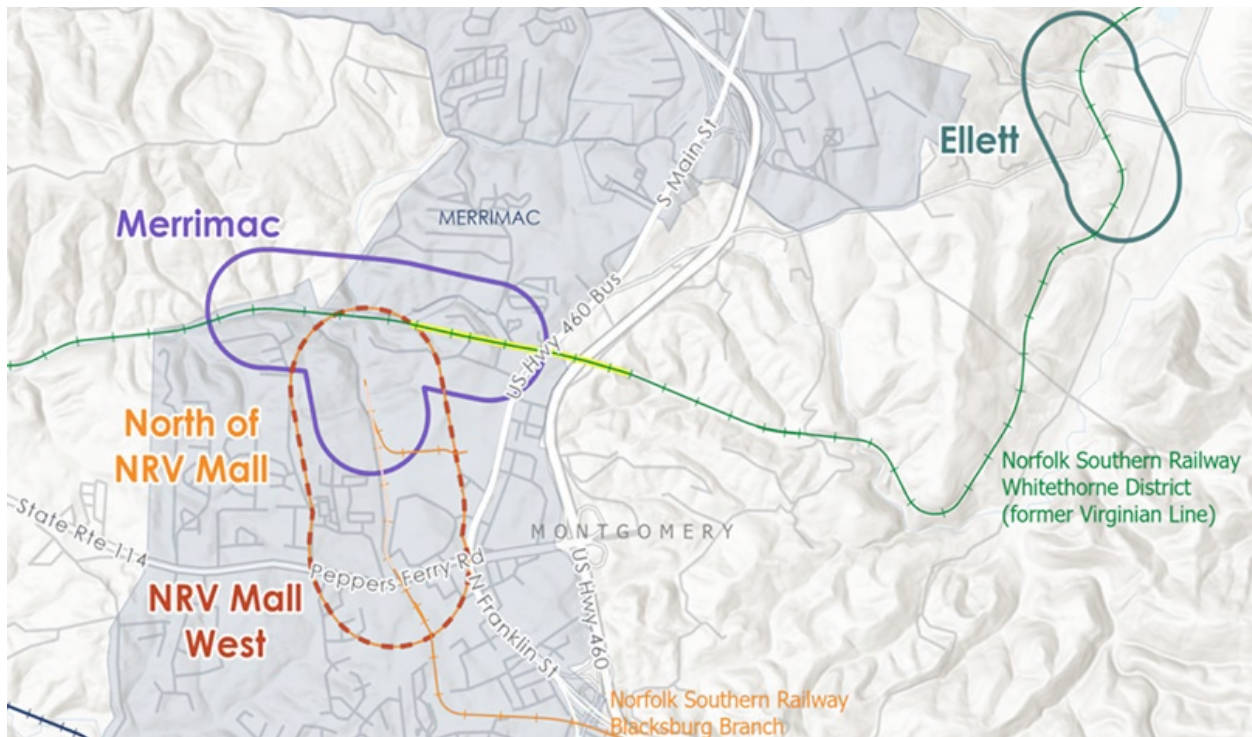


FIGURE 1.2: RETAINED LOCATIONS

These retained locations shown in **Figure 1.2** were considered potential study areas for Screening Two.

1.2 Screening Two – Comparison Study Area Analysis

Screening Two served as the first step in reviewing the environment in and around the four study areas that had been retained from Screening One. This evaluation sought to identify and assess the cultural, historic, and environmental resources and conditions in the remaining areas and uncover any major flaws. The methodology compared the areas and sought to eliminate those with a greater number of potential impacts.

TABLE 1.2: SCREENING TWO – COMPARISON STUDY AREA ANALYSIS RESULTS

Environmental Category	Stations			
	NRV-W	NRV-N	Ellett	Merrimac
Air Quality	✓	✓	✓	✓
Community Resources	✗	✗	✗	✗
Cultural & Historic Resources	✗	✗	✗	✗
Environmental Justice	✓	✓	✗	✓
Hazardous Materials	✗	✗	✗	✗
Land Use & Zoning	✓	✓	✓	✓
Noise & Vibration	✗	✗	✗	✓
Permitting Requirements	✓	✓	✓	✓
Prime Farmland	✗	✗	✗	✗
Protected Species & Critical Habitat	✗	✗	✗	✗
Regulatory Agency Involvement	✓	✓	✓	✓
Section 4(f) & 6(f)	✗	✗	✗	✗
Water Resources	✗	✗	✗	✗
Retained for Further Study	✓	✓	✓	✓

Table 1.2 shows the results of Screening Two for each area. All four retained areas had similar numbers of identified flaws. The NRV-N and NRV-W areas have the same number of potential impacts. The Ellett area shared the same number of potential impacts as the NRV-N and NRV-W areas. However, Ellett had a potential impact to low or minority communities. The Merrimac area had similar potential impacts, but it was the only area without potential impacts to noise and vibration receptors.

NRV-N, NRV-W, Ellett, and Merrimac were retained for further screening. Retained alternatives are shown in **Table 1.2** and **Figure 1.3**.



FIGURE 1.3: SCREENING TWO RESULTS

These retained alternatives were considered the potential station alternatives for Screening Three.

1.3 Screening Three – Comparison Alternative Screening

Screening Three evaluated the four remaining alternatives and developed a conceptual design of a station at each alternative. Conceptual designs were prepared using the 2019 Amtrak Station Program and Planning Guidelines. Previous studies determined that an Amtrak Caretaker Station, with an annual ridership of between 20,000 and 100,000 passengers, would be the most suitable for a station in the NRV (New River Valley Commission, 2016)¹. This approach provided the largest infrastructure footprint from which the impact limits were established. Examples of this conservative approach include:

- 3,500 square feet station – largest footprint for a caretaker station
- 15 feet wide platform – preferred rather than minimum dimension
- 150 parking spaces – daily passengers arrive by car, two per car, with additional parking for Amtrak staff
- Transit drop-off bays – daily passengers arrive by transit
- Rideshare drop-off bays – daily passengers are dropped off from a car

This screening was a two-phase process that used the potential impact limits of the concept design as the perimeter. Environmental categories from Screening Two were analyzed again in Screening Three to determine if they existed within the potential impact limits and to quantify any impacts. Design categories were developed from the major infrastructure systems to determine significant differences between the categories.

Concept design identified that all four remaining alternatives required additional infrastructure for access. NRV-N and NRV-W required additional infrastructure for railroad access. Ellett required additional infrastructure for transit, bike, and pedestrian access. Merrimac required additional infrastructure for highway access. Impacts for additional infrastructure were assessed for NRV-N, NRV-W, and Merrimac. Additional infrastructure for Ellett was not assessed due to the

¹ [New River Valley Regional Commission, New River Valley Passenger Rail Study, February 2016](#)

detailed design required to determine the placement of this infrastructure. The screening compared and then eliminated areas with a greater number of identified potential impacts.

TABLE 1.3: SCREENING THREE – COMPARISON ALTERNATIVE SCREENING RESULTS

Criterion	Stations			
	NRV-N	NRV-W	Ellett	Merrimac
Refinement of Screening Two Environmental Criteria Applied to Conceptual Design				
Air Quality	✓	✓	✓	✓
Community Resources	✓	✗	✓	✓
Cultural & Historic Resources	✗	✓	✓	✗
Environmental Justice	✓	✓	✗	✓
Hazardous Materials	✓	✓	✓	✓
Land Use & Zoning	✓	✓	✗	✗
Noise & Vibration	✗	✗	✗	✓
Permitting Requirements	✓	✓	✓	✓
Prime Farmland	✗	✗	✗	✓
Protected Species & Critical Habitat	✗	✓	✗	✗
Regulatory Agency Involvement	✓	✓	✓	✓
Section 4(f) & 6(f)	✗	✗	✗	✗
Water Resources	✗	✗	✗	✗
Screening Three Conceptual Design Impact Criteria				
Bicycle Access	✓	✓	✗	✗
Constructability	✓	✓	✗	✗
Future Expansion	✓	✓	✓	✓
Highway Access	✓	✓	✗	✗
Incremental Development	✓	✓	✓	✓
Parking	✓	✓	✓	✓
Pedestrian Access	✓	✓	✗	✗
Platform	✓	✗	✓	✓
Property Acquisition	✓	✓	✗	✗
Railroad Operations	✓	✓	✓	✓
Relocations	✓	✓	✗	✗
Security	✓	✓	✓	✗

Criterion	Stations			
	NRV-N	NRV-W	Ellett	Merrimac
Topography	✓	✓	✗	✗
Track Alignment	✓	✓	✓	✓
Track Grade	✓	✓	✓	✓
Traffic Impacts	✓	✓	✗	✗
Transit Access	✓	✓	✗	✗
Utilities	✓	✓	✓	✗
Retained for Further Study	✓	✓	✗	✗

The results of Screening Three found that NRV-N and NRV-W had the fewest number of identified potential impacts and that Ellett and Merrimac had a larger number of potential impacts. Due to the number of impacts identified in the screening analysis, Ellett and Merrimac were dismissed from further consideration.

NRV-N and NRV-W were retained for further screening. The outcomes of the screening analysis are shown in **Table 1.3** and **Figure 1.4**.



FIGURE 1.4: SCREENING THREE RESULTS

1.4 Station-Supporting Transportation Infrastructure

Additional transportation-related infrastructure is required for the remaining four alternatives. While the NRV-N & NRV-W alternatives have access for automobiles, transit, pedestrians, and bikes, these two alternatives require additional rail infrastructure. A 0.5-mile connecting track must be constructed to connect the Virginian Line to the Blacksburg Branch for passenger trains to reach the NRV-N & NRV-W alternatives. The Ellett and Merrimac alternatives are both directly adjacent to the Virginian Line and do not require additional track infrastructure. However, roadway improvements are necessary at these two alternatives to accommodate automobiles, transit, pedestrians, and bikes. The Ellett location will require 2.5 miles of roadway widening and a shared-use path to connect to a major throughfare. Similarly, the Merrimac location will require 0.8 mile of new roadway construction for connection to a potential station. Impacts for additional infrastructure were assessed for NRV-N, NRV-W, and Merrimac. Additional infrastructure for Ellett was not assessed due to the detailed design required to determine the placement of this infrastructure.

1.5 Conclusion

The desktop level screening process for identifying the environmental, design, and additional infrastructure impacts of five (5) potential passenger rail station locations identified:

- Where station and related station-supporting infrastructure could reasonably be located
- Which alternative(s) had the fewest environmental impacts
- Which alternative(s) had the most feasible design concept

After applying the criterion to the potential alternatives, the screening established two (2) sites located adjacent to the NRV Mall, also known as Uptown Christiansburg, to be retained for further consideration. Additional information regarding the impact analysis identified in this screening analysis is available in **Appendix C**.