

New River Valley Passenger Rail Study

*Regional Survey
Measure Local Impacts
History of Passenger Rail*



*Identify All Potential Sites
Detailed Site Evaluation
Site Selection*

APPROVED: JANUARY 7, 2016

NEW RIVER VALLEY



1 PROJECT OUTLINE

The purpose of this study is to identify a potential location for a passenger rail station and document the ridership demand in the New River Valley region. Passenger rail service arrives in Roanoke in early 2017. As the fastest growing region in western Virginia, a service extension into the New River Valley is the next logical step towards expanding passenger rail services in the Commonwealth.

The Study process was led by the New River Valley Regional Commission, under contract by the New River Valley Metropolitan Planning Organization (MPO). In general, the MPO is a policymaking organization serving the towns of Blacksburg and Christiansburg, the City of Radford, and the urbanized parts of Montgomery and Pulaski counties. The MPO Technical Advisory Committee (TAC) collaboratively developed site evaluation criteria, reviewed public input, and provided study oversight. TAC representatives include local elected officials, administrators, and senior planning, engineering, economic development, tourism, and transportation management staff.

Initial ridership was estimated utilizing Amtrak's Station Program and Planning Guide. According to the guidelines, much of the New River Valley meets the characteristics of a medium city center and/or college town. The demographic profile of the region meets Amtrak's criteria of a Caretaker Station, which typically serves 20,000 – 100,000 annual passengers. To determine local ridership, 2014 Amtrak Service & Ridership Fact Sheets for Virginia, West Virginia, and North Carolina were analyzed. A conservative estimate of 40,000 boardings/alightings was utilized to determine potential passenger rail site characteristics for this study. Study findings later revealed that 40,000 boardings/alightings could be achieved through a 4% mode shift of NRV generated north-bound trips alone.

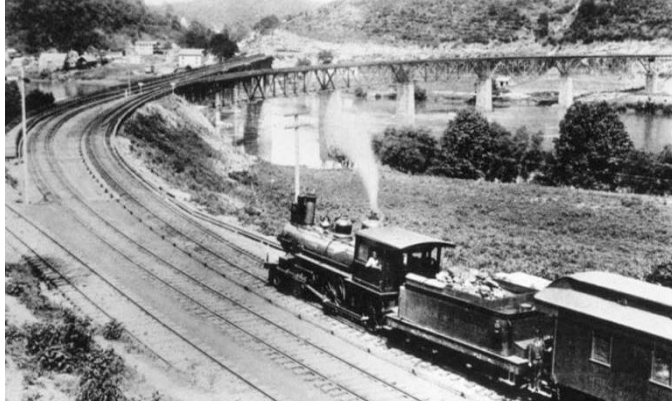
Amtrak provided additional guidance for determining site characteristics such as the number of parking spaces, platform length, and blueprints for a prototype Caretaker Station. Nearly thirty potential stop locations were identified along the region's rail corridor in the first phase. During the second phase of evaluation, a comparative analysis measured the strengths and weaknesses of nine locations. Criteria included consistency with local planning, potential business/residential displacement, potential environmental and historical impacts, proximity to primary transportation network and municipal utilities, availability/ownership, and general site capacity/flexibility.

In total, the region has six sites that meet or exceed minimum site requirements for a passenger rail station. The sites are located in Christiansburg, Dublin, Radford, and Pulaski. Quantitative and qualitative factors for each site were rigorously evaluated against up to 32 criteria. In September 2015, the TAC selected three final sites for concept level development and analysis, two locations in Christiansburg and one location in the City of Radford.

The final phase of site analysis focuses on the proximity to potential passenger rail trips, economic impacts, consumer spending, and construction costs. A new geospatial dataset for potential trip generations was developed by utilizing nearly 6,200 online survey responses. In addition to forecasting travel behavior, the survey also provided some insight into the types of amenities desired at a new station and how much users would be willing to pay for travel. This report identifies key study findings as a result of the planning process.

2 HISTORY OF PASSENGER RAIL SERVICE IN THE NEW RIVER VALLEY

The New River Valley has a rich history of passenger rail service. The railroad reached what is now Radford in 1854, eventually providing a rail connection between Lynchburg and Bristol. Scheduled rail



service on this line began in approximately 1856. The Norfolk & Western Railway's extension line from Radford west to the coalfields, along the south shore of the New River, reached the Town of Narrows in 1882. The Virginian Railway, along the north shore of the New River, began operation in 1909. The Norfolk & Western's passenger service offered a more fully developed menu of options, while the Virginian Railway offered limited passenger service.

To serve the coal mines at Merrimac, in Montgomery County, the Virginia Anthracite Coal and Railway Company, built a branch rail line in the early 1900s that connected with the Norfolk & Western at Cambria, which is now part of Christiansburg. This line was eventually extended to Blacksburg with passenger service between Cambria and Blacksburg commencing in the fall of 1904. The new passenger rail service was a significant improvement over the largely unimproved roads in existence at that time. Owing to the berries that grew along the route, the line was affectionately referred to by locals as the "Huckleberry". Scheduled passenger service on the line ended in 1957. Special passenger trains operating over the Huckleberry line ceased after 1963.

At the height of World War II, there were approximately 12 passenger trains passing through Radford daily. Additional east-west passenger trains operated through Cambria/Christiansburg. In the mid-1960s, there were approximately a dozen passenger trains (6 each way) passing through Christiansburg on a daily basis. Named passenger trains such as the Birmingham Special, Pelican, and Tennessean operated north-south, while trains such as the Powhatan Arrow, Pocahontas, and Cavalier operated east-west.

In the era before the interstate highway system and widespread car ownership, passenger rail was a common means of intercity travel. New River Valley residents attending college in the 1960s note that college students were frequent users of passenger rail for travel between school and home. In the event of harsh winter weather conditions, passenger rail service often represented the only reliable means of transportation. Rail stations were important pieces of the community fabric. In communities such as Christiansburg, Pulaski, and Narrows, the rail stations which still exist are recognized as significant structures contributing to the architectural and historic character of designated historic districts.

Passenger rail travel declined through the late 1960s. Remaining passenger service operated by the Norfolk & Western Railway ended in 1971. Between 1975 and 1979, Amtrak offered limited passenger rail service operating east-west through the New River Valley on trains known as the Mountaineer (1975-1977) and the Hilltopper (1977-1979).

3 STUDY FINDINGS

Amtrak currently operates hundreds of intercity passenger trains every day, serving over 500 rail stations in 46 states. Most of Amtrak’s services are operated over track owned by freight railroads. Additionally, most of the stations are owned by commuter rail agencies, state and local governments, and private owners.¹ Implementing the new service will require additional coordination with Amtrak, the Virginia Department of Rail and Public Transportation, Norfolk Southern, and local partners. This study is one of the initial steps of the overall process.



3.1 LOCAL/REGIONAL SUPPORT

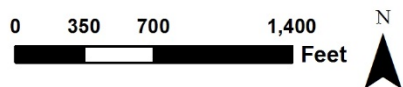
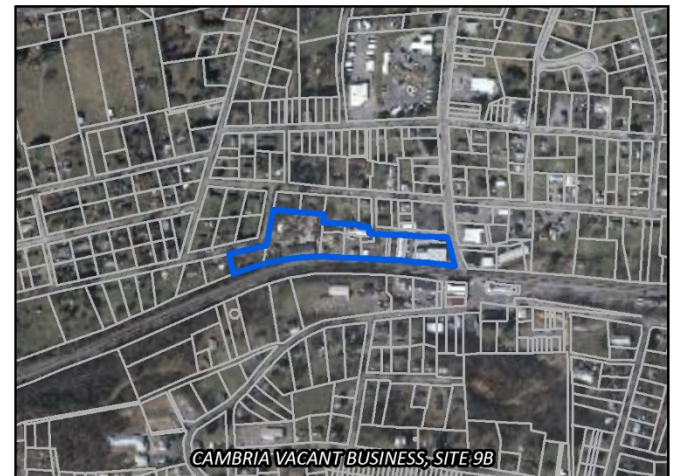
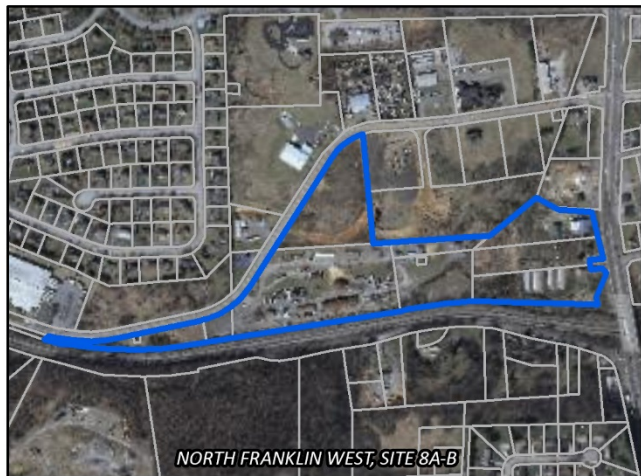
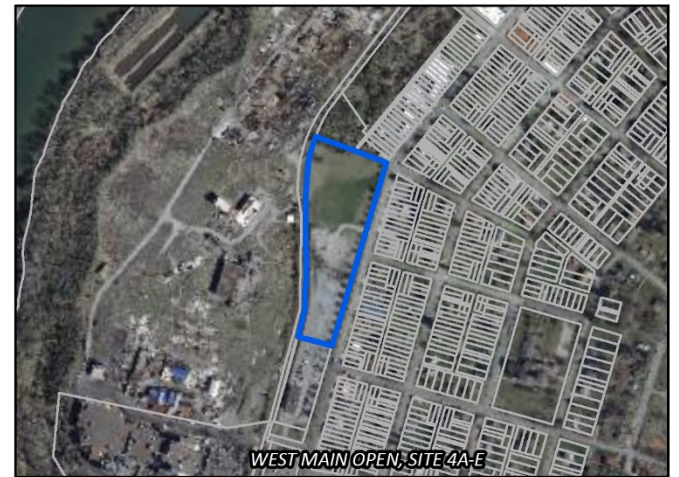
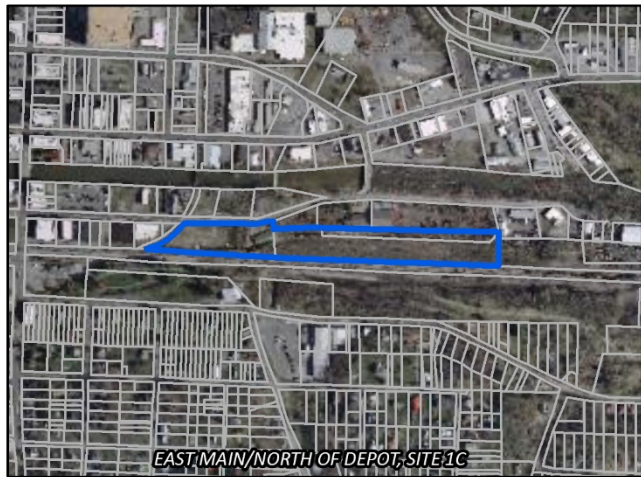
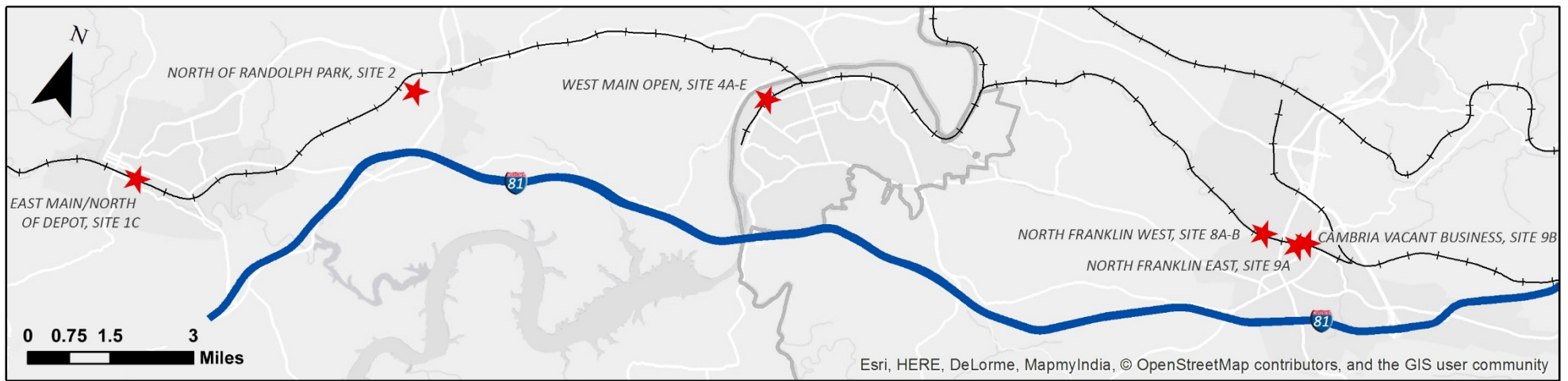
In December 2013, leaders throughout Virginia’s New River Valley region formed a partnership to bring passenger rail service to the area by 2020. The group consists of senior officials from the counties of Montgomery and Pulaski; towns of Pulaski, Christiansburg, and Blacksburg; City of Radford; Radford University and Virginia Tech; Virginia Tech Foundation; New River Valley Regional Commission; New River Valley Metropolitan Planning Organization; New River Valley Economic Development Alliance; and The Blacksburg Partnership and Montgomery County Chamber of Commerce. Additionally, Senators Mark Warner and Tim Kaine, Congressman Morgan Griffith; State Senators John Edwards and Ben Chafin, and Delegates Joseph Yost, Nick Rush, and Sam Rasoul have lent their support.

¹ Amtrak (2013), *Station Program and Planning Guidelines*. Retrieved from: www.greatamericanstations.com.

3.2 POTENTIAL NRV LOCATIONS FOR A PASSENGER RAIL STATION

The New River Valley Metropolitan Planning Organization's Technical Advisory Committee (TAC) established the methodology for site scoring. In general, sites needed to be a minimum of 5 acres in order to accommodate the station, 1'000 foot-long platform, 200+ parking spaces, and regional transit hub. Through the study process established by the TAC, final scoring revealed the following ranking:

1. **NORTH FRANKLIN WEST, SITE 8A-B:** located in Christiansburg, offers 21.5 acres and 2,800 feet of track frontage. The site offers the highest proximity to potential ridership, excellent proximity to the existing transportation system, and consistency with local planning. Less than desirable characteristics of the site include: approximately 40% of the site is located within the floodplain. Additionally, the Town of Christiansburg has existing infrastructure that will need to be relocated as a component of the project.
2. **NORTH FRANKLIN EAST, SITE 9A:** located in Christiansburg, offers 10.05 acres and 1,248 feet of track frontage. The site offers the highest proximity to job access and low income populations. Despite having one of the higher number of parcels to assemble, all affected property owners indicated their willingness to cooperate during the planning process in writing. Less than desirable characteristics of the site include: steep topography, inconsistency with local planning, and a water main may need to be relocated.
3. **WEST MAIN OPEN, SITE 4A-E:** located in Radford, offers 6.3 acres and 1,098 feet of track frontage. The site offers the highest proximity to population and employment (activity centers) within a 15-mile radius and households with 1 vehicle or less. Less than desirable characteristics of the site include: located adjacent to a spur track that is approximately 1-mile from the main line, and proximity to potential ridership is considerably lower than the top two sites.
4. **NORTH OF RANDOLPH PARK, SITE 2:** located in Dublin, offers 10.47 acres and 1,260 feet of track frontage. The site offers the highest overall site capacity and flexibility score and is located within 1 mile of Interstate 81. Less than desirable characteristics of the site include: highest proximity to threatened or endangered species, and is within proximity to approximately 53% of the total population and employment within 15-miles, compared to the top performing site. This site was not selected to move into the final scoring phase.
5. **EAST MAIN/NORTH OF DEPOT, SITE 1C:** located in downtown Pulaski, offers 6.17 acres and 1,780 feet of track frontage. The site offers one of the longest stretches of property adjacent to the main line. Less than desirable characteristics of the site include: approximately 20% of the site is located within the floodplain, and is in proximity to approximately 48% of the total population and employment within 15-miles, compared to the top performing site. The site was not selected to move into the final scoring phase.
6. **CAMBRIA VACANT BUSINESS, SITE 9B:** located in Christiansburg, offers 4.02 acres and 1,137 feet of track frontage. The site offers relatively good proximity to Activity Centers. Less than desirable characteristics included: property availability, majority of the site located within the floodplain, and inconsistency with local planning. The site was not selected to move into the final scoring phase.



Created by NRVRC. 2015. Source: Virginia Information Technologies Agency.



3.2.1 Identifying the Best Location

New River Valley partners began to identify potential passenger rail stop locations by initiating communication with Amtrak and the Virginia Department of Rail and Public Transportation (DRPT) in March 2015. Identifying all potential stop locations in the region was the next step of the planning process. In total, 29 unique sites were identified during the initial phase by TAC representatives with knowledge of land in their community. Before initiating a more detailed site analysis, TAC representatives selected nine locations for Phase 1 review. Based on Phase 1 scoring, three sites were selected to move into Phase 2 (final phase) of the analysis. The scoring criteria, methodology, and value for each phase is below.

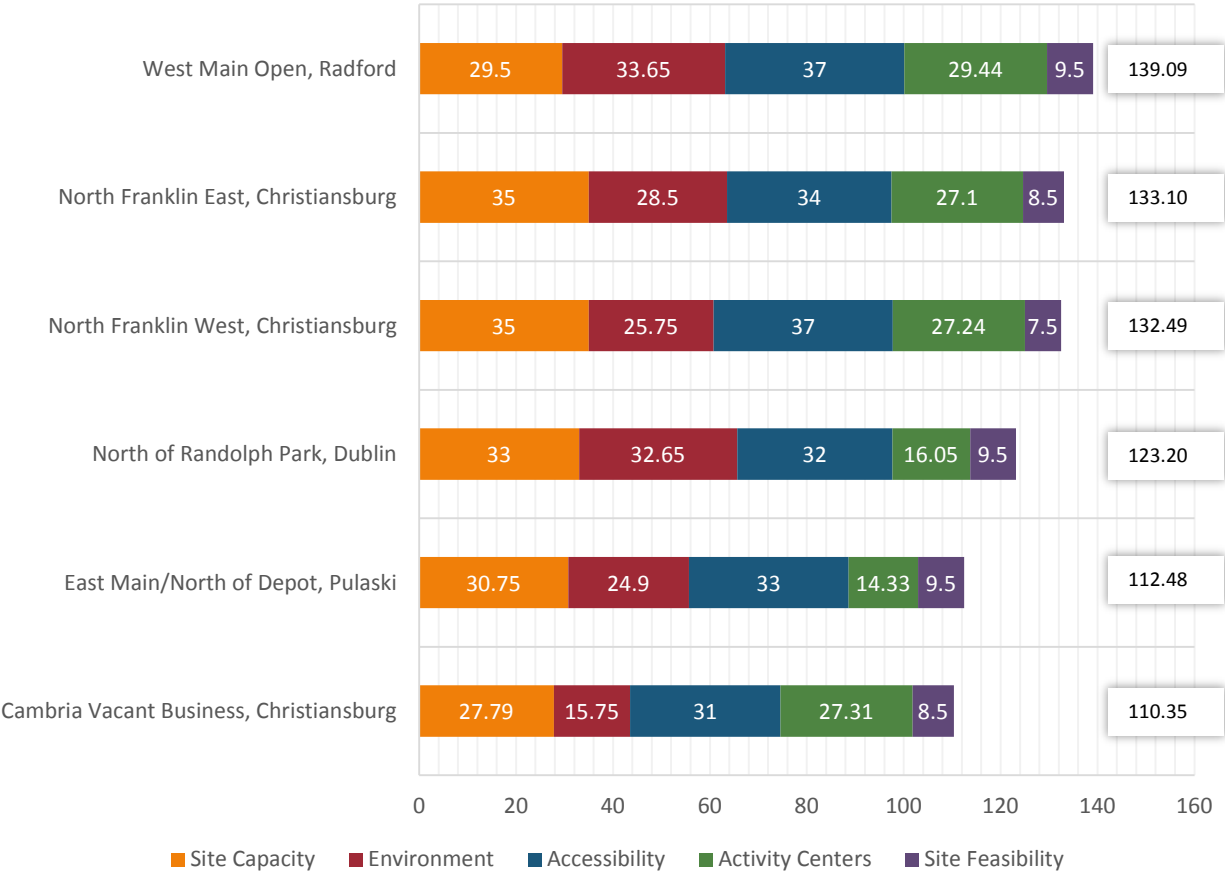
PHASE 1A			
<i>CATEGORY</i>	<i>CRITERIA DESCRIPTION</i>	<i>SCORING</i>	<i>VALUE</i>
<i>Site Capacity and Flexibility</i>	Proximity to primary rail	5 points if adjacent to main line, 3 points if 1 mile or less, 1 point otherwise	5
	Proximity to CoSS	5 points if less than 1 mile, -0.25 points for every 0.25 miles over 1 mile	5
	Space	10 points if 5 acres or more, acreage x2 down to 3.51 acres, less than 3.5 acres = 0 points	10
	Track frontage	10 points if 1,000 feet or more, track length divided by 100 otherwise	10
	Availability/Ownership	5 points if owned by local government or written permission from owner, 3 points if primarily vacant w/2 owners or less, 0 points otherwise	5
<i>Environment</i>	Potential displacement	3 points if 0 impacts; 2 points if vacant, available, or no more than 1 home/business; 1 point otherwise	3
	Floodplain	10 points if 0 impacts, 7 points if 25% or less, 3 points if more than 25% but less than 50%, and 0 points otherwise	10
	Migratory birds	3 points for lowest score, 3*(lowest impact/impact) otherwise	3
	Threatened/endangered species	5 points if 0 impacts, 3 points if simple mitigation, 0 points otherwise	5
	Historical resources	3 points if 0 impacts, -0.25 points each, 0.5 point low score	3
	Open Space/conservation easement	3 points if 0 impacts, 3*(lowest impact/impact) otherwise	3
	Agriculture district	3 points if 0 impacts, 3*(lowest impact/impact) otherwise	3
	Hazardous materials	5 points if 0 impacts, 3 points if potential encroachment, 1 point if difficult mitigation	5
TOTALS			70

*Note: CoSS is an acronym for Corridors of Statewide Significance.

PHASE 1B			
<i>CATEGORY</i>	<i>CRITERIA DESCRIPTION</i>	<i>SCORING</i>	<i>VALUE</i>
<i>Land Use and Accessibility</i>	Consistency with local Comprehensive Plan	10 points if yes, 7 points if Council willing to amend, 0 points otherwise	10
	Proximity to transit	10 points if available adjacent to property; 7 points if located within "go anywhere;" 5 points if identified in a future plan; 0 points otherwise	10
	Proximity to bike/pedestrian	5 points if located on or adjacent to property; 3 points if planned; 0 points otherwise	5
	Proximity to water	3 points if located on or adjacent to property; 1 point if planned or located within 600 feet; 0 points otherwise	3
	Proximity to sewer		3
	Proximity to power		3
	Proximity to internet		3
<i>Activity Centers</i>	Proximity to population + employment within 15-miles	30 points for highest score, 30*(impact/highest impact) otherwise	30
<i>Site Feasibility</i>	Percentage of property prime for construction	10*percentage of site prime for development and/or redevelopment	10
TOTALS			77

*Note: Three of the initial nine sites were removed from consideration due to challenges that could not be mitigated.

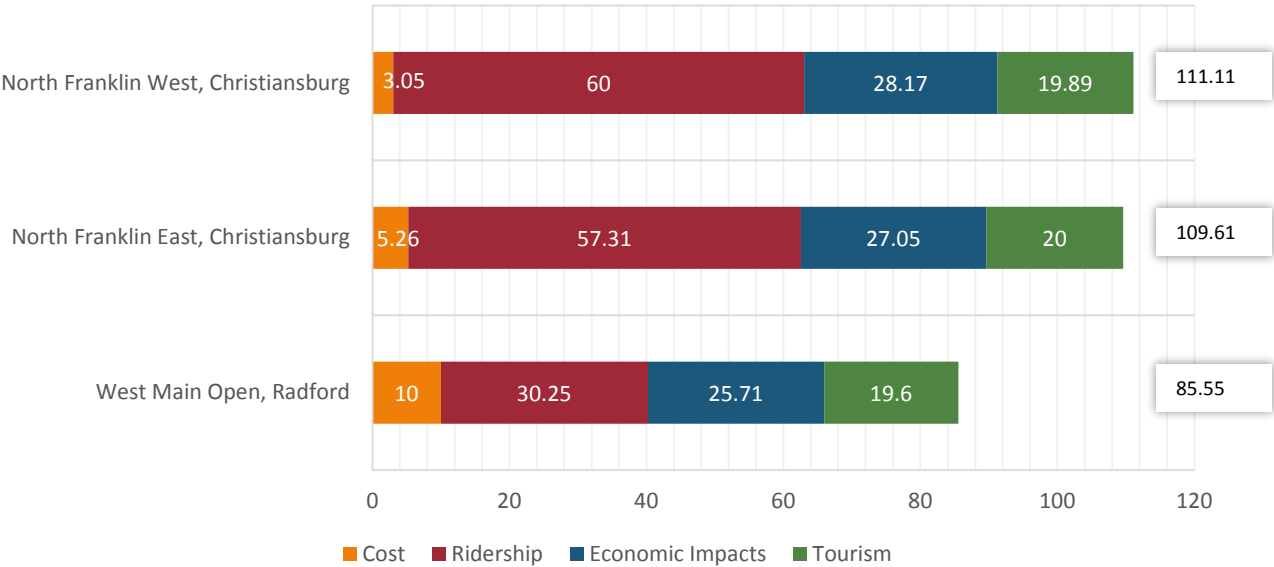
PHASE 1 RESULTS



PHASE 2 (FINAL)			
<i>CATEGORY</i>	<i>CRITERIA DESCRIPTION</i>	<i>SCORING</i>	<i>VALUE</i>
<i>Cost</i>	Low Cost	10 points lowest cost, 10*(lowest cost/cost) otherwise	10
<i>Ridership</i>	Proximity to 750,000 potential trips	Maximum points for closest proximity to number of trips; percentage based on number of trips at same radius otherwise. Example: Site A accumulates 250,000 trips at 2.3 miles. Site B has 125,000 trips at 2.3 miles. Site A = 12 points, Site B = 6 points.	30
	Proximity to 500,000 potential trips		18
	Proximity to 250,000 potential trips		12
<i>Economic Impacts</i>	Job accessibility within a 60-minute drive	9 points for highest score, 9*(impact/highest impact) otherwise	9
	Total commuting to points north	7.5 points for highest score, 7.5*(impact/highest impact) otherwise	7.5
	Development potential on or immediately adjacent to property	3 points for highest score, 3*(impact/highest impact) otherwise	3
	Development potential within a 10-mile radius	3 points for highest score, 3*(impact/highest impact) otherwise	3
	Proximity to households with 1 vehicle or less	4.5 points for highest score, 4.5*(impact/highest impact) otherwise	4.5
	Proximity to low income households	3 points for highest score, 3*(impact/highest impact) otherwise	3
<i>Tourism</i>	Household entertainment expenditures	20 points for highest score, 20*(impact/highest impact) otherwise	20
TOTALS			120

*Note: Only top three sites of Phase 1 were scored with the criteria shown above.

PHASE 2 RESULTS

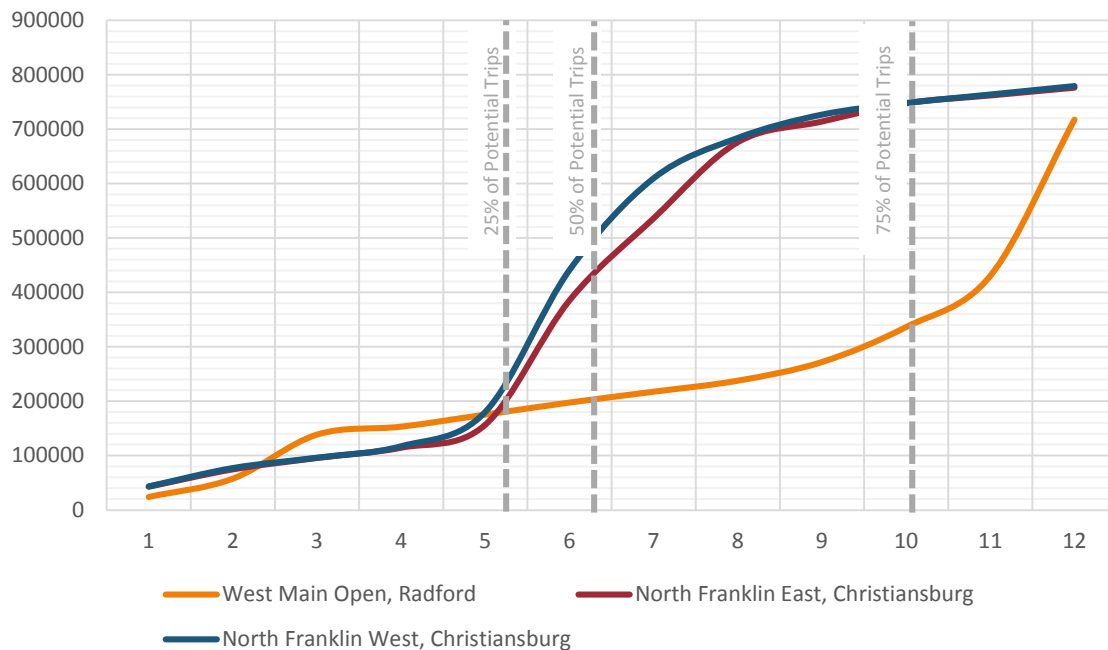


3.2.2 Determining Ridership

Much of the scoring criteria was developed utilizing data that is available through state and federal agencies. Amtrak develops Service & Ridership Fact Sheets to track annual ridership at existing stops; however, the Station Program and Planning Guide indicates that a region with our demographic profile may generate 20,000 – 100,000 annual trips. The guidelines further indicate that the presence of a college or university typically generates comparable ridership to more urbanized communities.

The New River Valley is home to Radford University and Virginia Tech. The two universities combined have more than 8,600 total personnel and more than 43,000 students. Each year both universities host thousands of visitors, including the families of current and prospective students, visiting faculty and professionals working with the universities, and attendees of conferences, sporting events and other activities. Amtrak’s Guide indicated early in the process that university related travel frequency is much higher than typical residents. The Passenger Rail Survey collected nearly 6,200 online responses and provided great insight into the travel habits of residents, faculty/staff, and students alike.

SITE PROXIMITY TO RIDERSHIP

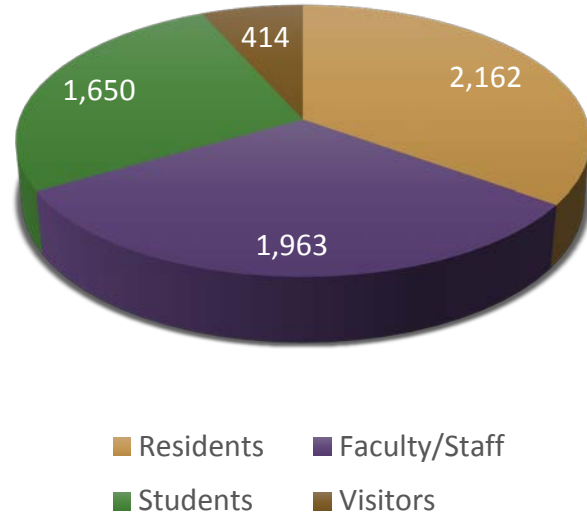


The table (above) indicates the differences in site proximity to potential north-bound trips generated from the region. According to Virginia Department of Transportation (VDOT) traffic data, the region generates nearly 1,000,000 annual trips to points north by vehicle alone. The traffic data was utilized to verify trip estimations for residents, faculty/staff, and students based on survey feedback. Combining the survey responses with decennial Census block-level data, the New River Valley Regional Commission developed a new geospatial database to assess potential advantages of locations closer to the universities. Trip frequencies were assigned to residents, faculty/staff, and students and distributed to block-level data.

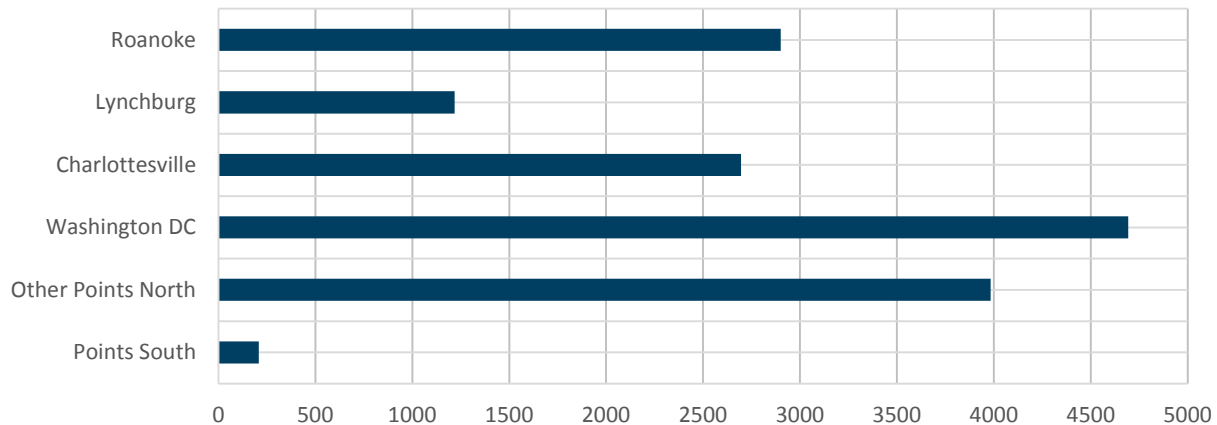
3.2.3 Measuring Demand

The New River Valley Regional Commission worked closely with local stakeholders to develop a survey to gauge ridership for the study. Originally launched on April 14, 2015, the survey captured 6,189 responses before closing on October 19, 2015. In general, the survey is reflective of 2.5% of residents, 3.8% of students, and 22.7% of faculty/staff. The response rate far exceeded initial goals and is attributed to the strong support for passenger rail in the region.

Survey feedback included information about travel habits, desirability to use a new service, importance of specific station amenities, preferences on departure/arrival, top destinations to points north, and how much potential users might be willing to pay. Top three amenities include: 1) restrooms, 2) long-term parking, and 3) on-site ticketing. The table below highlights the top destinations results.



TOP DESTINATIONS



In addition to the online survey, NRVRC staff and volunteers surveyed passengers at the Lynchburg Amtrak station in November 2015. According to Amtrak station personnel, an average of 50-60 passengers use the service on most weekdays, and 100-120 passengers use the services on Fridays and weekends. The train serves significantly more riders on holidays and the beginning and end of the semester at Liberty University.

Over 60% of passengers surveyed were from zip codes in central and southern Virginia, although 18% of respondents live in Washington DC or northeastern cities. Washington DC (35% of travelers), followed by New York City (16%) are the top destinations, with the remaining passengers travelling mainly to

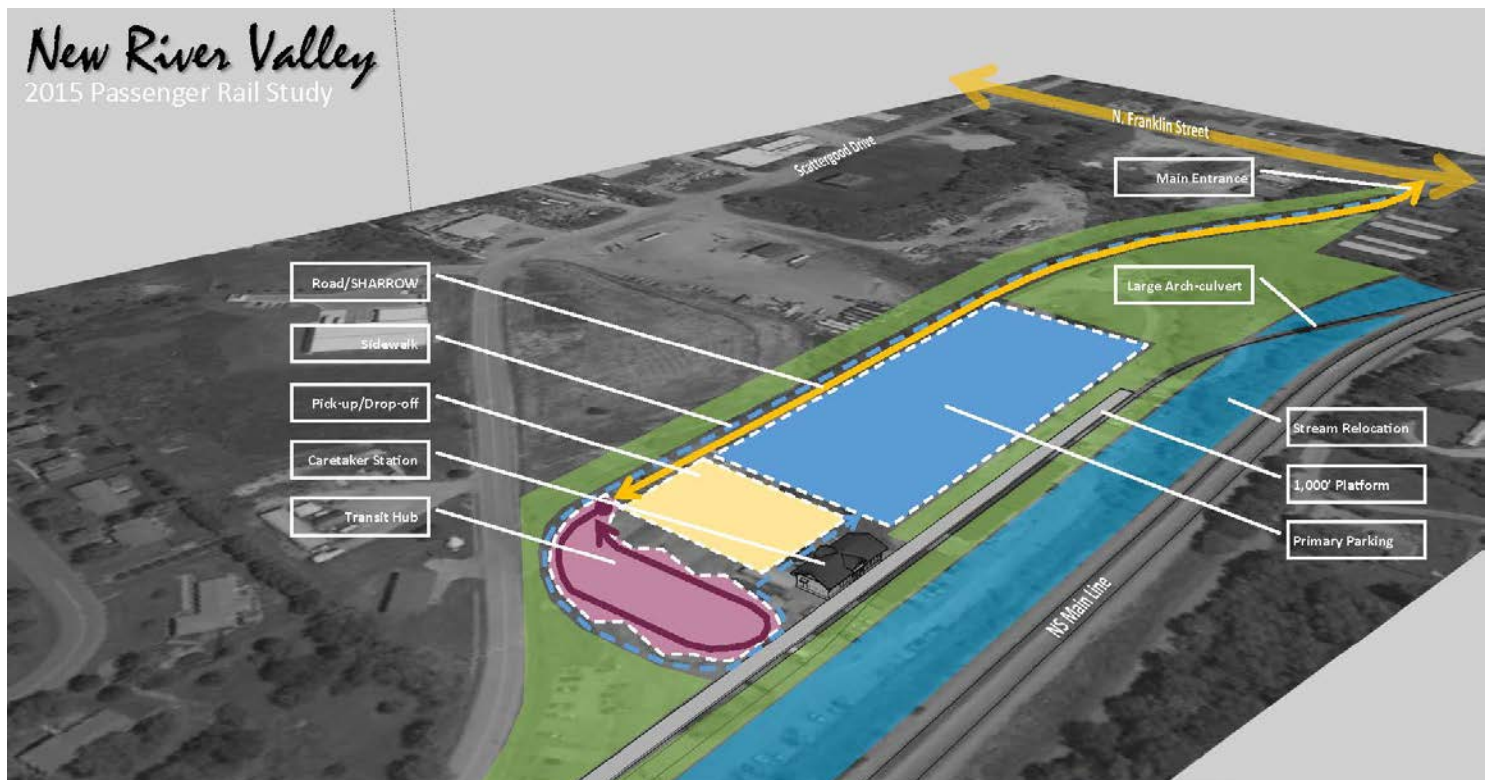
major northeastern cities. Nearly half of those surveyed indicated that they would be very likely (24%) or somewhat likely (24%) to use passenger rail services to visit the New River Valley.

Nearly half of surveyed passengers were travelling to visit family and friends, with the remaining passengers split evenly between business and vacation trips. Traveling by car is still the most frequently used mode amongst those surveyed. Passenger rail was the second most used option for those surveyed, with nearly half of all passengers using the train multiple times per year.

3.2.4 Conceptual Planning

The New River Valley Regional Commission facilitated a conceptual planning workshop on November 10, 2015. Representatives from the city of Radford, towns of Blacksburg and Christiansburg, Radford University, Blacksburg Transit, and the Blacksburg Partnership participated in the event. Workshop attendees were asked to focus on a single task at each of the final three locations: envision this site is selected as the region's passenger rail stop location, what are its needs?

Each meeting began on-site where participants were encouraged to walk the grounds and document findings. After spending 30-60 minutes on-site, participants met for an additional hour to share ideas regarding site access, location of station and platform, parking areas, and pick-up/drop-off areas for transit and vehicles. The graphic below illustrates the planning concept for Christiansburg Site 8A-B.



4 POTENTIAL ECONOMIC IMPACTS

In addition to the initial jobs and investment from the construction and ongoing operation of an Amtrak station in the New River Valley, passenger rail service would contribute to an array of other economic benefits for the region. These potential benefits include increased tourism and visitor spending, increased business activity in sectors that support tourism and transportation, and more reliable alternatives to highway travel for visitors, regional commuters and university students.

4.1 STATION IMPACTS

The construction of the station facilities and related infrastructure improvements creates a one-time economic impact during the construction period. The economic impact includes direct impacts from workers' wages and the purchases of goods and services in the region, as well as indirect and induced effects, as businesses and workers spend this new money at other businesses in the regional economy.

The initial cost of the station will vary based on the final site selection. Additionally, the final cost will vary depending on which station prototype is selected, amount of necessary parking, types of passenger amenities offered, and Amtrak operational needs. The New River Valley Regional Commission developed an economic impact model using an estimate of \$5 million for construction. Assuming that project spending is spread equally over two years, the station construction would support 37 jobs per year and generate more than \$1,220,000 in earnings.

The ongoing maintenance of the station would create several permanent jobs. Additionally, Amtrak would likely need to relocate a base crew to support new end of the line north-bound services. These new jobs would create an ongoing economic impact in the region, as workers spend a portion of their wages on other goods and services in the local economy. For example, assuming four jobs for Amtrak end of the line services and four jobs for station maintenance, three additional jobs would be created where these workers spend their earnings, generating more than \$510,000 in earnings.

4.2 VISITOR IMPACTS

The Virginia Tourism Corporation estimates that visitors spent approximately \$254,413,462 during trips to the New River Valley in 2014. The spending translates into \$5,699,909 in tax receipts and supports 2,523 jobs in hospitality related industries. VTC visitor surveys estimate that visitors spend an average of \$462 during their stay in the region (median spending was lower at \$230), at businesses such as restaurants, retail stores, hotels, gas stations, etc. Passenger rail service could draw even more visitors to the region, helping to grow these sectors of the regional economy.

Other regions analyzing the effects of passenger rail have estimated increases of 0.5% to 3% in annual visitors. A similar increase in the region would represent 2,500 to 15,000 additional tourists for the New River Valley each year. The impacts will vary depending on the number of visitors who may only visit the region because of Amtrak service; however, for every 10,000 visitors that the new service brings to the region, visitors will spend approximately \$1.92 million in the regional economy, creating 45 additional jobs in hospitality-related sectors, and generating more than \$890,000 in earnings for regional workers.

5 KEY STUDY FINDINGS & NEXT STEPS

- The New River Valley offers numerous locations for a potential passenger rail station.
 - A total of six sites meet or exceed minimum requirements to accommodate a Caretaker Station, 1,000 foot-long platform, 200+ parking spaces, and regional transit hub.
 - Each potential site location offers unique opportunities, such as: proximity to ridership, potential economic impacts, willing landowners, and site capacity.
 - Each potential site location offers unique challenges, such as: initial construction costs, necessary environmental mitigation, unwilling landowners, and proximity to ridership.
- A demand for passenger rail services exists in the New River Valley.
 - The demographic profile of the region meets Amtrak's criteria of a Caretaker Station, which typically serves 20,000 – 100,000 annual passengers.
 - Reviewing comparable service locations in Amtrak's 2014 Service & Ridership Fact Sheets for Virginia, West Virginia, and North Carolina, indicates that the region would generate 40,000 or more annual boardings/alightings.
 - To achieve 40,000 annual boardings/alightings, a 4% mode shift of NRV generated north-bound passenger vehicle trips would need to occur.
 - To achieve 40,000 annual boardings/alightings, survey respondents alone would need to choose passenger rail service 1 out of every 5 current north-bound trips.
- The idea of a new passenger rail service is strongly supported by the region's residents, university faculty/staff, and students.
 - 1,963 faculty/staff took the survey out of a total of 8,659 personnel, 22.7% response rate. Additionally, 3.8% of total students and 2.5% of residents took the survey.
 - Positive feedback includes: the need to provide more reliable access to points north; reducing the total number of household vehicles; less stressful way to travel as a family or with a large group; encourage more travel between schools for visiting friends; enhanced opportunities for economic development; compliment other existing modes of transportation (local transit, Megabus, etc.); many utilized the service through the 60's and would like to see it return; and a more appealing option for aging travelers. Overall, there was exceedingly more positive than negative feedback received through the online survey process.
- An operational analysis is needed to determine additional needs for a New River Valley Service.
 - Norfolk Southern will need to determine specific infrastructure needs between the proposed NRV location and Roanoke.
 - Amtrak will need to determine specific equipment and personnel needs.
 - The operational analysis is expected to cost \$350,000 - \$500,000 to develop.
- To stay up to date on the latest news and information, visit: www.nrvpassengerrail.org

***New River Valley
Metropolitan Planning Organization***

January 7, 2016

Resolution to approve the Passenger Rail Study for possible extension from Roanoke to the New River Valley.

On a motion by Michael Barber seconded by Anne McClung and carried with one abstention,

WHEREAS, the New River Valley Passenger Rail Committee through the New River Valley Regional Commission (NRVRC) requested the MPO to conduct a study for possible extension of passenger rail from Roanoke to the New River Valley; and

WHEREAS, VDRPT concurred that this study could be done by the MPO using FTA 5303 planning funds, and

WHEREAS, the MPO approved conducting this study at its August 7, 2014 meeting, and

WHEREAS, the NRV RC conducted this study for the MPO to determine the potential ridership as well as a preferred station location, and

WHEREAS, the study has been completed,

WHEREAS, the TAC has reviewed and recommends approval.

NOW, THEREFORE BE IT RESOLVED that:

The New River Valley MPO Policy Board approves the final report of the New River Valley Passenger Rail Study and recommends that one of the Christiansburg sites be the location of the rail station.


F. Craig Meadows, Chairman

