

### Task 1 – Project Initiation and Rail Patronage Study

#### Study Goal

The objective of this study is to assist the City of Roanoke and Valley Metro (Greater Roanoke Transit Company, GRTC) in examining the feasibility of a new intermodal transportation facility that supports the re-introduction of passenger rail service to the City and better accommodates the space needs of the current and future downtown transit operations.

Several recent developments led to the desire and need for this type of study. One is the announcement that Roanoke will be the next locality to which Amtrak passenger rail service will be extended from Lynchburg, with the goal of starting this service by January of 2017. This is currently the highest priority project for the Virginia Department of Rail and Public Transit (VDRPT). Another important development that brought about a need for this study is Valley Metro will be transitioning its fleet to buses that are 8'-6" wide, which will have a significant cumulative space impact on the current Campbell Court Transit Station in regard to bus bay sizes and bus movements. In this sense, the current configuration at Campbell court has reached its useful life. The facility may be retrofitted but at a significant cost of time and resources. The proximity of the proposed location of the future passenger rail platform to the existing Valley Metro transit hub at Campbell Court provides an excellent potential opportunity to construct a state of the art intermodal transportation facility in Downtown Roanoke that brings together passenger rail, local bus, regional and/or express bus, inter-city bus, bicycles, shuttle services, taxi and/or other shared ride modes of service.

#### Project Team and Stakeholders

The stakeholder committee provided project guidance and clarification throughout the course of the study. The stakeholders met regularly to review the work performed by the design team and provide feedback to continue project progression. In addition to the stakeholder group, other city staff members participated in the project dialog including Christopher Morrill, City Manager and Assistant City Managers Sherman Stovall and Brian Townsend.

##### Committee Members

Chris Chittum, City of Roanoke

Priscilla Cygielnik, City of Roanoke

Phil Schirmer, City of Roanoke

Carl Palmer, Valley Metro

Kevin L. Price, Valley Metro

Neil Sherman, Virginia DRPT

Cristina Finch, Roanoke Valley – Alleghany Planning Commission

Chip Badger, Wendel

Sean Beachy, Wendel

Ron Reekes, Wendel

Paul Anderson, AECOM  
Bruce Williams, AECOM  
Xiaobing Shuai, Chmura Economics  
Carolyn Howard, Draper Aden Associates  
Sri Nathella, Draper Aden Associates  
Gerald Salzman, Desman Associates  
William Wuensch, EPR  
Brenda Landes, SFCS

The project design team was led by Wendel. The team included the following specialized firms to perform the tasks:

- AECOM – Rail Patronage and Ridership
- Chmura and Associates – Economic Analysis
- Draper Aden and Associates - Civil Infrastructure review and NEPA Preparation
- Desman and Associates – Parking Capacity Study
- Engineering and Planning Resources – Traffic Engineering Studies
- SFCS – Architectural Services

### Project Initiation

Immediately upon award of the work, project initiation activities began and project kick-off meeting was scheduled between the Wendel design team and the City, Valley Metro and VDRPT. This meeting provided the foundation of the study effort by defining the project goals and objectives, project team structure, key points of contact and communication for all stakeholders, appropriate communication protocols and an overview of the anticipated study schedule.

Also discussed during the meeting were the multiple platform locations currently under consideration, the City's recent parking study for downtown, the need to quickly initiate the ridership forecast work, the potential framework for a Categorical Exclusion document, possible public input and informational meetings, and the next steps for developing the project space needs through site visits and stakeholder interviews.

Following the meeting there was a site visit to the general location of the train platform, where the City provided an overview of the general discussions occurring with Amtrak, Norfolk Southern (NS), and VDRPT as to siting and Amtrak requirements. Additional discussion was held on Norfolk Ave and the need to preserve as much right-of-way and roadway as feasible.

The meeting minutes for the kick-off meeting are contained in Appendix A of this report.

In addition to programming interviews, project initiation activities included gathering of pertinent existing data, reports and studies, and detailed on-site analysis and observation of the existing Valley

Metro transit operation at the Campbell Court station. The project team also gathered information regarding the existing transportation and utility infrastructure of the study area.

The results of these various project initiation activities form the basis of the contents of this report, and the information gathered and analyzed are included in the section they most appropriately pertain to.

In order to transition from the project initiation phase into the full effort of performing the feasibility study, it was first necessary to produce the ridership forecast. This is because the projected ridership information would assist in defining the project programming and space needs, determining the parking requirements, selecting the preferred site location, identifying the appropriate passenger amenities, and ultimately, informing the concept design for the building and site. It would also be part of the information needed in order to assess and analyze the project's projected economic benefit to the City and surrounding region.

### **Rail Patronage Study**

#### **Model Structure and Parameters**

The study was conducted for the City of Roanoke with the participation of the Virginia Department of Rail and Public Transportation (VDRPT). The proposed service would replace the existing Smart Way Connector Bus between Lynchburg and Roanoke, with the bus continuing service from Roanoke to the Blacksburg/Virginia Tech area.

Data collected for this effort included demographic data for the Roanoke Transportation Management Area, including population and employment for years 2010 and 2040, national demographic data including population, employment, and income at the Census Division level for the entire study area for years 2010 and 2013, total ridership for the Washington-Lynchburg Amtrak route for FY13 and FY14, and total ridership for the Smart Way Connector Bus for FY12, FY13, and FY14.

The station ridership was developed using a national intercity rail model developed by AECOM for corridor analysis for Amtrak's Northeast Corridor, Southeast Corridor, Florida, and multiple corridors in the Midwest, calibrated to match the base Amtrak ridership data provided by VDRPT for the Washington-Lynchburg existing service.

The travel demand forecasting approach utilizes a two-stage model system. The first stage forecasts the growth in the total number of person trips in each market, and the second stage predicts the market share of each available mode in each market. Both stages are dependent on the service characteristics of each mode and the socio-economic characteristics of the corridor. The key markets addressed in the forecasting model system are defined by geographical location (i.e., origin-destination zone pair).

The study area is focused on the existing Washington-Lynchburg-Roanoke corridor, but also includes connecting service up the Northeast Corridor to Boston. The zonal system was developed for the study area, and defines the geographic level of detail at which the intercity travel demand forecasting process is applied.

#### **Forecast Results**

The ridership forecast was prepared based on 2013 demographics and FY2013 Amtrak base ridership. Table 3 provides the annual boardings and alightings for the Roanoke extension for the

proposed Roanoke station and the connecting Blacksburg bus service for trips entirely south of Washington and trips which travel through Washington and connect to the Northeast Corridor.

### Annual Rail Boardings/Alightings for Roanoke Extension

	South of Washington	Through Washington	Total
Roanoke	20,076	28,209	48,246
Blacksburg (connecting bus service)	6,134	11,114	17,248
Total Boardings/Alightings	26,210	39,323	65,534

### Task 2 - Facility Needs Assessment

An initial step in the planning and design of the intermodal transportation facility for the City of Roanoke was the development of the program for the facility. The central purpose of this process is to identify and understand the nature of the challenges and needs associated with the facility. The program is a detailed list of the activities that will take place at the intermodal facility and a determination of the level at which the activities will occur. The program identifies the different modes of transportation and forms of vehicle, pedestrian and bicycle access that will serve the facility, as well as appropriate passenger amenities. It also identifies the number and types of vehicles that will operate in and out of the intermodal facility, including peak period demands and the number of passengers that will use the facility.

Because the transit center would serve both Valley Metro and Amtrak riders and employees, planning for shared functional spaces is essential in the design of an efficient intermodal facility.

Information to develop the facility program was collected by the design team through interviews with City administration and planning individuals and Valley Metro staff. In individual discussions and joint meetings, the current and future needs for the facility were established and a list of activities was developed for the facility program. Both current and future needs were discussed since the intermodal facility must be designed to accommodate any future expansion of transit services that is likely to take place during the forty year useful life of the facility. From these discussions, the program information was developed for vehicle operations, slip alignment and juxtaposition, building envelope and passenger amenities. In addition, a public information meeting was held to solicit ideas, suggestions and recommendations from system users and the general public for the proposed facility. Attendants were able to give verbal and written comments for the City and designers to consider while developing the program and designing the new intermodal facility.

The total recommended program for the proposed intermodal transportation project is a facility component of approximately 10,102 square feet, an approximate total site program of 114,306 square feet, and an Amtrak platform of 11,900 square feet.

---

### Task 3 - Site Evaluation

#### Overview of Selection process

The Site Selection process for this study involved several related tasks in addition to examining potential locations to build an intermodal facility. As part of the site selection process, an environmental study was conducted to determine if any adverse environmental impacts would result from the construction of an intermodal transportation facility. Also conducted at the time of site selection was an examination of the rail patronage that can be expected at the Roanoke Amtrak station. Rail patronage is directly related to the size of the passenger waiting area, amenities, and the need for parking. A review of the economic impacts or benefits was conducted as well as reviews of impacts on traffic and parking availability that might result from the construction of an intermodal facility in Roanoke. The findings of all of these studies are presented in this report.

#### Initial Sites and Concepts

In order to locate the site that best would accommodate all functions of the intermodal facility, Wendel began by working with City and GRTC staff to identify the boundaries of an appropriate study area and property parcels within the study area that potentially could accommodate the facility. The key factor that drove the definition of the study area for the multimodal facility was the location of the future Amtrak platform. The location of the rail platform had previously been determined by the Virginia Department of Rail and Public Transportation, the City of Roanoke, Amtrak, and Norfolk Southern.

The rail platform is located adjacent to Norfolk Avenue near the intersection with Jefferson Street and on the southern side of the Norfolk Southern tracks which served as the northern boundary of the study area. Potential properties within a quarter-mile of the platform were identified, and these were then developed into five distinct areas that were considered large enough to accommodate the total program. Based on the walking distances to the platform, it was agreed two of these areas were too distant to be considered as further viable sites. The three remaining areas were considered to be within an acceptable walking distance to the platform and also located near the existing bus transfer area at Campbell Court.

#### Preferred Site Concepts

After defining this more compact focus area, several conceptual layouts for an intermodal facility were developed. Design concepts for the sites are reviewed in the following section of this report. The conceptual layouts included the train platform, intermodal center, GRTC bus and Greyhound bus access, pedestrian movements, kiss-n-ride drop offs, and future development. The study area also was adopted to define the boundaries for the NEPA investigations and study.

#### Civil

Standards and codes which govern site development for this project include the City of Roanoke Erosion and Sediment Control, Stormwater Management, and Zoning Ordinances, and other commonwealth and federal regulations.

#### Existing Site Conditions

The subject properties are located within downtown Roanoke south of the Norfolk Southern Railroad and Norfolk Avenue, west of Jefferson Street and other private properties fronting Jefferson Street, north of Campbell Avenue and east of 1<sup>st</sup> Street SW and the Martin Luther King pedestrian bridge. Current land uses within the project areas include the following:

1. A surface parking lot consisting of three (3) parcels owned by John N. Lampros;
2. A parking garage owned by Merchant's Parking Company, Inc.; and
3. A bus station and parking garage owned by Greater Roanoke Transit Company (GRTC).

The existing topography is relatively flat within the project area with elevations ranging from approximately 918 to 920 (southeast to northwest) within the Lampros parking lot.

### Floodplain Considerations

The majority of the proposed project lies within the one (1) percent annual chance (100-year) Zone A floodplain of Trout Run / Lick Run. A Zone A floodplain does not have an established base flood elevations (the water surface elevation of the one (1) percent annual chance flood).

If the project proceeds to subsequent design phase, existing hydraulic (floodplain) models should be acquired from FEMA (Federal Emergency Management Agency) to determine the base flood elevation and floodway limits, if any, within the project area. The proposed project would be analyzed and designed, as required, to result in no change from the existing base flood elevation upstream or downstream of the proposed project or encroach on the newly defined floodway limits. Proposed buildings will be designed in accordance with FEMA regulations and the City of Roanoke ordinances.

### Zoning

The subject properties are zoned Downtown District. The purpose of this district is to “protect and enhance the public interest in downtown as a source of economic vitality.” As per Section 36.2-315 of the City of Roanoke Code, bus passenger terminal or station and parking lot facilities are uses permitted only by special exception; parking structure facility and railroad passenger terminal or station are permitted uses. The Downtown District does not require building setbacks from lot lines.

### Demolition

During Phase 1, the Lampros parking lot would be modified to accommodate the construction of a train station along Norfolk Avenue, new pedestrian walkways and a new parking configuration. Existing sidewalks within the adjacent rights-of-way of the subject properties along Norfolk Avenue and Salem Avenue would also be demolished and replaced, which may also require relocation of existing fire hydrants, street lights, and/or stormwater structures.

Phase 2 includes the demolition of the existing Merchants parking garage adjacent the Lampros parking lot to allow for the construction of the proposed Transit Station. Additionally the GRTC building will be demolished to allow for the construction of a proposed parking garage with retail space on the ground floor. Existing sidewalks within City rights-of-way adjacent to these demolition activities will be removed and replaced to provide an improved pedestrian experience and access among the proposed Transit Station, parking garage, and retail spaces.

### Other Planned Improvements

The City of Roanoke is currently planning to reconstruct Norfolk Avenue to facilitate construction of the Amtrak platform north of Norfolk Avenue. As part of this project, Norfolk Avenue will be reconfigured and the existing Roanoke Rail Walk preserved and/or relocated as needed.

### Utility Systems

The existing utility infrastructure in the project study area has sufficient capacity to accommodate the potential new intermodal transportation center. These utilities include gas, electric, communications, fire protection, water, sanitary sewer, and storm sewer. Additional utility detail is contained in section three of this report.

### Stormwater Management

Water quantity and quality control will be designed in accordance with the Part IIB criteria of the Virginia Stormwater Management Program (VSMP) Regulations (9VAC25-870), and Roanoke City Stormwater Management Ordinance. This project will be considered to be a redevelopment scenario.

Based on the Phase 1 and 2 concept plans, the following is a summary of approximate land cover per phase.

Phase 1:	Existing Impervious Area	=	106,890	square feet
	Proposed Impervious Area	=	99,270	square feet
	Proposed Managed Turf Area	=	7,630	square feet
Phase 1 and 2:	Existing Impervious Area	=	99,270	square feet
	Proposed Impervious Area	=	94,640	square feet
	Proposed Managed Turf Area	=	12,250	square feet

### Quantity Control – Preliminary Analysis

Because the proposed project does not increase impervious surface area, stormwater quantity control facilities will not be required per 9VAC25-870-66[B,1,a]. The existing stormwater system may require additional research to determine whether or not the area currently experiences localized flooding during the 10-year 24-hour storm event in which case additional stormwater quantity controls would be required. If the area currently experiences localized flooding, post-development peak flow rates for the 10-year 24-hour storm event must be (a) confined within the stormwater conveyance system to avoid localized flooding, or, (b) the post-development peak flow rate for the 10-year 24-hour storm event must be less than the predevelopment peak flow rate. If option b is utilized no further downstream analysis is required to show compliance with flood protection criteria.

### Quality Control – Preliminary Analysis

Although the proposed project does not result in an increase of impervious area, the total phosphorus load must be reduced by at least 20% per 9VAC25-870-63[2.a.] for both Phases independently. Compliance may be achieved with a combination of increasing greenspace areas and Best Management Practices (BMP) such as permeable pavement, rainwater harvesting, urban bio-retention, or manufactured BMPs (e.g. Filterra). Any BMP's selected shall meet the Standards and Specifications of the Virginia Stormwater BMP Clearinghouse. For example, approximately two (2) to three (3) Filterras treating 1.2 acres of impervious area will meet the required pollutant removal.

### Traffic Analysis

The purpose of the traffic analysis was to assess potential impacts to traffic conditions adjacent to the potential site of the intermodal transportation facility in downtown Roanoke. In particular, the study considered the impact of changes in both vehicular and pedestrian traffic related to the relocation of the city's bus terminal, the relocation of a major downtown parking venue, and the addition of a new Amtrak passenger rail service.

An analysis of existing traffic conditions was performed on the four intersections that are will be most directly affected by the new development: 1st St SW at Salem Ave SW; 1st St SW at Campbell Ave SW; Jefferson Ave SW at Salem Ave SW; and Jefferson Ave SW at Campbell Ave SW.

When assessing the traffic impact of the new development, three primary changes were considered:

- Relocation of the Bus Terminal
- Relocation of the Parking Garage
- Addition of the Amtrak Station

### Results of the Study:

#### *Peak Hour Traffic Impact*

This project is not expected to result in significant changes to future peak hour traffic volumes. The bus station will not generate new vehicular traffic. New trips generated by the train station will occur well outside of peak traffic hours—6 a.m. and 10 p.m. on weekdays.

The parking garage is not expected to generate any more trips than the existing parking facilities, but does have the potential to change the routes that users utilize to access the facilities. While all entrance and exit points for the parking facilities are currently located on Salem Ave SW, the new parking garage will provide entrance and exit points on both Salem Ave SW and Campbell Ave SW.

#### *Pedestrian Infrastructure Improvements*

While the new Intermodal Transit Center is not expected to have a major effect on vehicular traffic patterns during peak travel hours of the day, it can be expected to change pedestrian traffic patterns at these intersections. In order to anticipate and accommodate these pedestrians, the city may be interested in pursuing some basic infrastructure improvements. Recommendations for improvements at three intersections are provided in the Traffic Analysis portion of section three of this report.

### Parking Analysis

A parking study was conducted to determine an appropriate approach to providing parking to support the future intermodal facility. This analysis included capturing the parking inventory and occupancy during a typical weekday to understand the amount of public parking available to support the displacement of existing parking and the additional parking demand generated by the future Amtrak operations. The addition of passenger rail to downtown Roanoke will not only generate parking demand, but potentially could involve displacing one or two existing public parking facilities.

A parking inventory of the study area was compiled, along with occupancy counts. Based on the parking surplus/deficit analysis there are approximately 155 spaces available to support the Amtrak parking demand within one block of the proposed station.

The parking projection analysis for the Roanoke Intermodal facility based on both parking supply and demand shows a range between 20 and 113 vehicles. Since there is a parking surplus of 155 spaces projected within a block of the proposed Roanoke Intermodal facility, there is adequate supply available in the area to support the station without constructing additional parking. However, adequate ADA parking should be provided at a convenient location to the station.

Additional detail is contained in the complete parking study which is contained in Appendix B of this report.

### Task 4 - Conceptual Design

The conceptual design of the Roanoke Intermodal station began with the space program and general layouts for a combined train and transit station, including bus slips, parking and other amenities. The design team considered the general area of the preferred sites as identified, and used single designated sites or parcels as well as combinations of sites and parcels to offer various concept designs. The designs varied from how buses enter and exit the site, plus the different juxtapositions they have with boarding and alighting passengers.

GRTC prefers a sawtooth configuration for their bus slips. This design requires more area to function for buses circulation and passenger boarding and alighting; however it gives the transit operator much more operational flexibility in providing their core service. In developing the initial concepts, the sawtooth configuration was used as the preferred layout.

Using the space program, the preferred bus configuration and circulation and the designated sites, the design team prepared several designs for review and feedback from the steering committee. Committee members appreciated the amount of area required for the bus circulation and parking. However, during the course of presenting the various options, the design team was made aware of physical constraints to which the site must conform. First, the MLK, Jr. Pedestrian bridge should be considered historic and off limits for any significant alterations. Secondly, it is desirable to have at least one lane of Norfolk Avenue remain open once the passenger platform is completed. Lastly, Salem Avenue should remain a two way street. Salem Avenue may be altered to constrain vehicular traffic flow (traffic calming) and/or add additional parking, but the street must remain two way.

With this new information in hand, the design team prepared new concepts that took into account these three requirements. The new concepts included sawtooth bus slips, as well as modified herringbone bus slips. The concepts were prepared for the preferred site, which uses the entire Lampros property and the adjacent Merchants Parking Deck.

Following review of these concepts, the steering committee preferred the sawtooth layout for the GRTC bus operations, and those concepts were further developed, including three dimensional (3D) modeling. Once the models were ready, the design team presented to the steering committee for comment and feedback. The primary comment received was the design should support a phased plan whereby the train component could be developed while funding and right of way acquisition progress toward implementing the ultimate plan.

The design team has prepared a phasing plan for several of the options. One includes utilizing both the Lampros Property and the Merchants Parking Deck, and a second option that utilizes the Lampros Property only. The latter option does not use a sawtooth configuration for bus slips, but rather the modified herringbone slip configuration. This option reduces the overall right of way required and subsequent costs for the project, while still allowing for operations to continue as they do currently.

### Task 5 - NEPA Analysis and Documentation

A National Environmental Policy Act (NEPA) study was undertaken as required by federal agencies for receipt and use of federal funds. There are three (3) levels of study that NEPA reviews may fall under. For this project, a Categorical Exclusion (CATEX), the minimal of all studies was required to document any environmental effects and potential mitigation measures to address those.

On behalf of the City of Roanoke, and as part of the Wendel project team, Draper Aden Associates completed a Categorical Exclusion and Documented Categorical Exclusion Worksheet (CATEX) for a proposed project in downtown Roanoke (Proposed Action). The Proposed Action for the Categorical exclusion was defined as the development of a Passenger Rail and Transit Intermodal facility in Downtown Roanoke.

Federal funding likely will be sought for these transportation-related project elements; therefore, the Proposed Action is subject to the regulations and guidance established by National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.). Projects or actions which do not have significant effects on the human and natural environment may be categorically excluded from certain documentation requirements of NEPA. Categorical Exclusions as defined in 23 CFR 771.118 include actions which do not induce significant impacts to planned growth or land use for an area, do not require the relocation of significant numbers of people, and do not involve significant impacts to any natural, cultural, recreational, historic, community or other resource. Furthermore, the action must not have significant impacts to air, noise, or water quality or have a significant impact on existing travel patterns. An action that qualifies as a Categorical Exclusion does not require the preparation of an environmental assessment (EA) or environmental impact statement (EIS) (i.e., it is categorically excluded from the need for such documentation).

The Proposed Action does not qualify as an Automatic CE or a PCE. Results of technical studies and resource analyses that were prepared clearly demonstrate the Proposed Action will not have significant environmental impacts.

#### Criteria Required for Documented Categorical Exclusion

The CATEX documents the following natural, cultural, and community resources and issue areas required by NEPA for the Proposed Action:

- Traffic, Transportation and Parking;
- Land Acquisition and Displacements;
- Land Use and Zoning;
- Air Quality;
- Noise;
- Cultural and Natural Resources;
- Visual/Aesthetics;
- Public Safety and Security;
- Ecologically Sensitive Areas and Endangered Species;
- Wetlands;
- Water Resources/Water Quality;
- Floodplains;
- Wild and Scenic Rivers, Navigable Waterways, and Coastal Resources;
- Farmlands;
- Socioeconomics;
- Environmental Justice (EJ);

- Environmental Risk Sites and Hazardous Materials;
- Seismic;
- Property Acquisition;
- Construction Impacts; and
- Indirect and Cumulative Impacts.

### Conclusion of NEPA

Based on a review of environmental components and evaluation of impacts associated with the City of Roanoke's implementation of the proposed action, no significant direct, indirect, or cumulative impact on the human or natural environment is anticipated. The existing management and control systems combined with implementation in compliance with existing environmental regulations and best management practices (BMPs) would mitigate potential impacts associated with the new passenger rail and transit intermodal facility. It should be noted that Draper Aden Associates was unable to determine the potential for negative impacts to historical resources at this time given the preliminary nature of this project. This information will need to be further evaluated as additional details are available via official consultation with Virginia Department of Historic Resources (VDHR) to be initiated by FTA.

The full Categorical Exclusion and Documented Categorical Exclusion Worksheet are located in Appendix B of this report.

### **Task 6 - Economic Analysis**

The economic impact of the intermodal facility project will be realized in two phases: (1) initial capital investment, which provides a one-time impact during the construction period, and (2) intermodal facility operations, which include the operations of Amtrak and bus services after the project is completed as well as commercial developments at the station. For both phases, the direct, indirect, and induced impacts in spending and job creation were estimated.

The initial investment would generate a sizable economic impact in the City of Roanoke. From 2016 to 2017, initial investment activities would generate a total economic impact (including direct, indirect, and induced impacts) of \$17.2 million that can support 114 cumulative jobs in the City of Roanoke. Among the total economic impact, \$10.9 million is derived from direct spending during the project development phase of intermodal facility. This spending can directly support 59 cumulative jobs in the region from 2016 to 2017. The indirect impact in the region during the development phase is \$4.1 million and 37 cumulative jobs from other industry support of the initial investment, such as equipment rental or truck transportation. The induced impact during the development phase is expected to be \$2.2 million, which can support 17 cumulative jobs—these jobs are expected to be concentrated in consumer service-related industries such as restaurants, hospitals, and retail stores. The annual average economic impact (including direct, indirect, and induced impacts) of project development activities is estimated to be \$8.6 million, which can support 57 jobs per year in the city from 2016 to 2017.

The total annual operational impact (direct, indirect, and induced) of the Roanoke intermodal facility is estimated to be \$14.3 million in 2018, which can support 59 jobs in the city. Among those, direct revenues from the intermodal facility operation, Amtrak operation, bus service, taxi service, and other retail and food establishments are estimated to be \$9.8 million, which can support 48 jobs. The indirect impact is estimated to be \$2.6 million and 6 jobs, benefiting other businesses within the city that support all businesses at intermodal facility. The induced impact is estimated to be \$1.8 million

and 5 jobs in the city, mostly benefiting consumer-related businesses such as retail shops, healthcare facilities, and restaurants.

Additionally, there are three broad user benefits estimated in this study. The first is travel time savings from congestion mitigation. The second benefit is motor vehicle-related cost savings. The third benefit is safety. The total user benefits are estimated to be \$9.1 million per year if Amtrak services remain at the existing level in 2018.

In regard to the fiscal impact for State and City governments, the ongoing operation of the intermodal transportation facility can contribute \$63,068 in various taxes leveraged on meals, lodging and other goods per year to the City of Roanoke, and \$177,377 in taxes to the state in 2018.

### Recommended Next Steps

Following the final public information meeting in August, 2015, the Roanoke Valley – Alleghany Regional Commission contracted for a transportation visioning consultant to better understand regional transportation opportunities, and improve operations of GRTC. The results of this study could impact GRTC service, and thus the location of an intermodal transportation center. Once the results of the study are available, further analysis and site evaluation may be warranted.