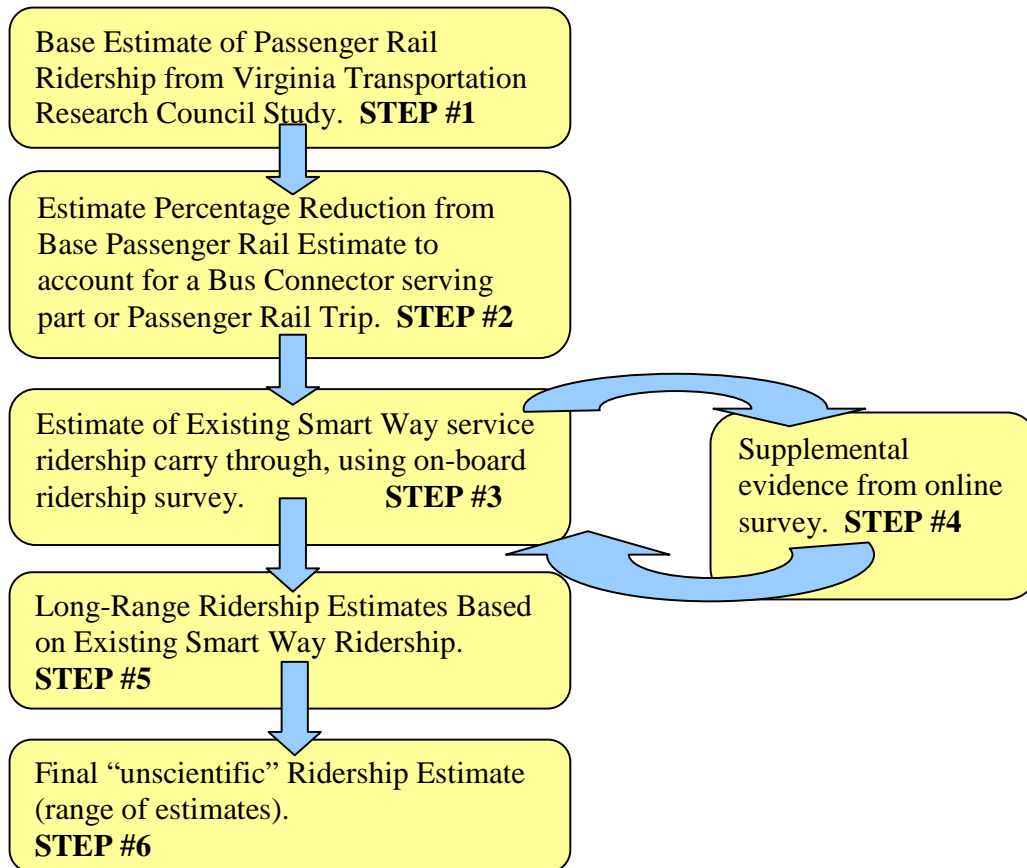


### Roanoke to Lynchburg Bus Connector to Passenger Rail Study

**Purpose:** The purpose of this report is to provide preliminary information concerning the potential viability of a bus connector service from the Roanoke Valley to the Lynchburg Area (Region 2000) in order to connect with existing passenger rail service at Lynchburg’s Kemper Street Station. The intended audience for this report is state and local elected and appointed officials.

**Constraints:** The Roanoke Valley-Alleghany Regional Commission (RVARC) was requested to take on this study in late December 2009 for study delivery in early January 2010. Due to the tight timeframe, the study methodology is not statistically “scientific.” Instead, this study is a synthesis of the best information available and able to be collected within the timeframe available.

#### Methodology:



**Base Estimate of Passenger Rail Ridership (STEP #1):** Starting in 1996 Virginia began a series of studies considering the cost and ridership potential for passenger rail service crossing the Commonwealth. The proposed TransDominion Express (TDX) line would

run from Bristol to Washington D.C. and would include stops in Roanoke, Lynchburg, Richmond, Charlottesville, and other smaller localities in between.

In each of the five studies that have been completed since its proposal, operation costs and ridership numbers have varied significantly. For example, the initial 1996 study undertaken by the Virginia Department of Rail and Public Transportation projected an annual ridership of over half a million, while a 2000 study by Amtrak projected only 26,000. Ridership in particular has been a difficult number to pin down, and experience with similar projects across the country have revealed whereas forecasting improvements in existing systems is relatively easy, determining potential ridership for new systems can be extraordinarily difficult. In 2007, an *Update on Status of Proposed TransDominion Express (TDX) Passenger Rail Service* was completed that summarized the conclusions of the previous five reports and selected those results that seemed the most reasonable in light of the most current data available at the time and the experience of similar systems across the country.

The findings of the *Update* put the cost of TDX infrastructure improvements at \$180.4 million in current dollars, annual operating expenses at \$18 million, and ridership numbers topping out at 58,000 a year (Miller vi). Revenues generated from this level of ridership are projected to be \$1.8 million.

As part of the 2008 Roanoke Valley Area Metropolitan Planning Organization (RVAMPO) work program, staff were directed to undertake a study narrowing the scope of the TDX proposal to service which terminated in Roanoke as opposed to Bristol, but retained all other stops and ridership assumptions as determined in previous studies. This summary reflects the results of that study and largely utilizes the conclusions made in the 2007 *Update*, modified somewhat by current data as well as an emphasis on the business traveler segment of the ridership market. It also assumes that the removal of the Roanoke to Bristol line will not have a measurable effect on ridership numbers. This seems consistent with previous studies, which concentrate on Roanoke to DC passenger-trips and do not take into account Roanoke to Bristol passenger-trips as part of the total ridership forecast.

### **Market Drivers for Ridership**

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Clearly, when discussing any kind of mass transit service, the question of ridership comes to the forefront, and the ability to forecast ridership is of utmost importance. The implementation and operation of an intercity passenger rail service is an expensive proposition, and high ridership is the main measure of success, particularly when that ridership translates to relatively low level of public subsidies for operation costs. Previous TDX ridership forecasts have relied heavily on level of service assumptions – trip time, on-time service, and amenities – as the primary decision drivers for travelers, along with historical trends and existing census data to formulate baseline numbers. It is not the intent of this report to challenge the validity of these forecasts; indeed, it will assume them to be accurate for purposes of capturing the incremental

changes between full TDX service and a shorter Roanoke to Washington D.C. route. Nonetheless, it is important to recognize that historical trends and level-of-service forecasts do not incorporate significant changes in market conditions over the years since DRPT's initial study, nor do they take into account Roanoke-specific market conditions that could alter basic assumptions about demand.

When discussing the consumer decision making process, it's helpful to distinguish between low-involvement and high-involvement products. Low involvement products are those which offer relatively little risk, minor differentiation between brands or quality, and invoke little to no brand loyalty (Silberger 11). High-involvement products indicate more risk and more planning required before the purchase, could be more expensive, but also invoke greater brand loyalty and often more emotional satisfaction (Silberger 9). The illustration Silberger uses in *The 10-Day MBA* is that of shoes. Once a purely practical, low-involvement good, aggressive marketing, endorsement by celebrity athletes, and innovative design changes have turned many brands of shoe into high-cost, high-involvement items that inspire rabid loyalty and even, incredibly, violence. A similar arc can be seen in the development of the automobile as a consumer good, which has seen it transform from a fairly practical machine into an increasingly high-tech, high-involvement device. Indeed, the transformation has come so far that the new CEO of Chrysler recently said "I think a vehicle today has to be your most favorite room under your roof...It's incidental that it gets you from Point A to B, right?" (Maynard 2007).

The service levels noted above reflect relatively low-involvement decisions in terms of a mode shift to passenger rail: trip times between rail and automobile are generally perceived as comparable, on-time arrival in a personal vehicle is generally assumed, and familiarity with one's own vehicle generally trump amenities of other modes, just to name a few. However, since its 1996 introduction, and even since the April 2007 *Update*, there have been demographic, environmental, and economic trends that increasingly support the implementation of passenger rail service across the state and have the potential to make the decision to use passenger rail a high-involvement one.

Primary among these trends is the increasing costs of fuel. In 1996, oil was running just over \$20 a barrel, or \$28 in 2007 dollars adjusted for inflation. In April of 2007, oil had increased to approximately \$70 a barrel, and on January 2008 oil reached an all-time high of \$100 a barrel ("Oil Price Increases Since 2003" 2008). In current dollars, this represents an increase of over 300%. In terms of fuel cost, this reflects an increase from roughly \$1.43 per gallon of gas at the end of 1996 to around \$3.00 a gallon by the end of 2007; in 1996, therefore, the average commuter would spend \$25 on fuel driving to Washington D.C. in 1996 versus \$54 in 2007. The drivers behind these price increases have been varied but are primarily linked to increases in demand, especially from growing economies like those in China and political instability in oil-producing markets (Shenk 2008). This global increase in demand shows no signs of slowing; indeed, China and India in particular are seeing rapid growth that will keep prices high "for the foreseeable future" (Esty 40). Further, even as gas prices have increased over the

last decade, not until December of 2007 did consumption in the U.S. fall (Hargreaves 2007).

Demographic changes, primarily reflected in an aging population, also suggest an audience for passenger rail service. Consistently rated among the top regions in the country to retire (Wood 2008), and with relatively small population growth and a challenging drain of younger citizens to other regions, the Roanoke Valley will likely see an increasing demographic shift to a more elderly citizenry over the next decade. This presents transportation and mobility challenges within the Valley itself, but also indicates that increase public transportation options provide an opportunity to keep the Commonwealth's retirees linked to the whole of the state and increase its ability to market itself as a desirable destination for retirees.

Finally, concern about global climate change and U.S. energy independence continues to grow, prompting the need for a response and strategy on the part of public officials. The Commonwealth has made strides in addressing these concerns, beginning with the adoption of the Virginia Energy Plan in 2007. That plan establishes as one of its goals the reduction of energy growth in the Commonwealth 40% by 2017 (VDMME 2). The plan also notes that "[t]ransportation is the single largest energy using sector, accounting for approximately 43% of total energy use in the state" (VDMME 3). Providing the option of cross-state passenger rail, accompanied by aggressive marketing and promotion of the service, can be an important step both in meeting Virginia's these short-term energy goals as well as establishing the infrastructure for a long-term solution to increasing transportation energy demand. Concern about climate change has the greatest potential to make passenger rail a high-involvement consumer choice, particularly among business travelers and their employers who are increasingly under pressure from their customers to be environmentally-friendly.

## **Service Specifics**

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### *Ridership*

As noted above, forecasting ridership for new passenger rail service can be notoriously difficult. The following ridership numbers, taken from the 2007 *Update*, follow a conservative forecast model; actual ridership could be much higher depending on service levels offered including travel time, on-time service, and customer service amenities such as electric outlets for laptop use, food service, and others. These numbers reflect a travel time of approximately 4.5 hours between Roanoke and Washington D.C. with two trains running round-trip per day (given travel time projections, it does not seem likely that removing the Bristol to Roanoke segment of the route – a trip time of approximately 6 hours round trip - would provide sufficient time savings to add an additional train each day). This trip time is roughly comparable with automobile travel time, and reflects a significant improvement over automobile trip time during peak congestion periods. It is worth noting that, though important, travel time is an unreliable indicator of potential ridership. Miller relates that of systems similar to the proposed TDX service in terms of travel time and distance, those that have seen significant ridership increases have not always seen these increases coincide with improvements in

trip time but rather improvements in on-board amenities and the quality of stations (Miller 10). This further indicates that passenger rail service has the potential to become a high-involvement decision by travelers as price pressures make automobile travel less attractive.

The Roanoke to Washington D.C. segment of TDX is predicted to bear 91% of total ridership (Miller 20), all stops inclusive, amounting to 51,483 annual passenger-trips between stations along this segment. Roanoke itself is projected to generate **5,538 passenger-trips** (see Table 1, below, for a breakdown of the station-to-station passenger-trips), or 11% of total TDX ridership. The vast majority of the ridership – 37,072 annual trips - is projected to be generated by the Lynchburg, Charlottesville, and Alexandria stations (Miller 14).

**Table 1. Total Predicted Passenger-trips from Roanoke**

	To Lynchburg	To Charlottesville	To Alexandria	To Richmond
<b>From Roanoke</b>	1849	202	3446	41

Keep in mind that the original ridership forecasts did not take into account potential riders from outside the state. It is possible that a Bristol station would generate travel not only from Bristol itself, but from Washington D.C. travelers coming from Tennessee and surrounding states, linked through other passenger rail options.

A similar analysis from the TDX report (Miller 13) yields the following passenger rail estimates from the New River Valley, as represented by Radford in the Report.

**Table 2. Total Predicted Passenger-trips from New River Valley**

	To Roanoke	To Lynchburg	To Charlottesville	To Alexandria	To Richmond
<b>From Radford</b>	301	29	14	910	14

The New River Valley is included because of the possibility of using the existing Smart Way bus service to continue through to Lynchburg using the proposed bus connector service. The estimates are separated for Roanoke, New River Valley (NRV) and Combined Roanoke-NRV in the following callout boxes.

Base estimate of passenger rail trips generated from Roanoke **STEP #1**  
**5,538 passenger-trips**

Base estimate of passenger rail trips generated from New River Valley **STEP #1**  
**1,268 passenger-trips**

Base estimate of passenger rail trips generated from Combined Roanoke - NRV **STEP #1**  
**6,806 passenger-trips**

**Ridership Reduction to Account for Bus Connector Serving Part of Trip (STEP #2):**  
 The estimates provided in “STEP #1” are for passenger rail demand assuming that a train

is available for the entire trip. Some potential customers may not be willing to connect to a train using a bus for a portion of their trip. Staff could not find any reliable estimates as to how many potential riders would not take a bus connection to a passenger rail terminal for the rest of their trip in accepted studies or research. As an alternative analysis staff conducted a sensitivity analysis using the following assumptions:

- Low Impact on Ridership Assumption – 80% of train customers take bus connection
- High Impact on Ridership Assumption – 60% of train customers take bus connection

The results of the sensitivity analysis are presented in the following table:

**Table 3. Impact of Bus Connector in Rail Trip Estimates**

<b>Annual Passenger-trips (Step #2)</b>	<b><u>Low Impact (Optimistic Assumption – 80% of Step 1)</u></b>	<b><u>High Impact (Conservative Assumption – 60% of Step 1)</u></b>
<b>Roanoke Passenger-trips</b>	4430 passenger-trips	3323 passenger-trips
<b>Roanoke+NRV Passenger-trips</b>	5445 passenger-trips	4084 passenger-trips

Additional ridership estimates from Steps 3, 4 and 5 will be added to the results presented in Table 3 for a final range of estimates.

**Existing Smart Way Service On-board Ridership Survey (STEP #3):** Smart Way is an existing inter-regional bus service between the New River Valley (NRV) and the Roanoke Valley. Valley Metro operates the Smart Way and a distributed an on-board survey to current Smart Way riders to ascertain what percentage of current riders would be willing to continue on to Lynchburg on a separate or expanded bus connector service. The percentages obtained from the on-board survey are applied to one morning and one evening Smart Way bus that would correspond to the proposed Roanoke to Lynchburg bus connector service. The percentages are not applied to the all day Smart Way schedule. The results of the on-board survey are summarized for the respondents to the survey. The results are not extrapolated to the entire population of current Smart Way customers. The results indicate that a total of 389 additional yearly passenger-trips can be expected from current Smart Way riders electing to transfer to or remain on an extended Smart Way style service to Lynchburg. Applying the additional 389 yearly passenger-trips to the previous ridership estimates yields the results in Table 4.

**Table 4. Trip Estimates as a result of Step #3**

<b>Annual Passenger-trips (Step #3)</b>	<b>Optimistic Assumption</b>	<b>Conservative Assumption</b>
<b>Roanoke Passenger-trips</b>	4819 passenger-trips	3712 passenger-trips
<b>Roanoke+NRV Passenger-trips</b>	5834 passenger-trips	4473 passenger-trips

**Online Survey (STEP #4):** Staff developed and distributed an online survey closely based on the Smart Way bus on-board survey using SurveyMonkey.com. The survey was distributed primarily by word-of-mouth through social media efforts, initiated through the RIDE Solutions Facebook group and from there picked up by several other outlets, including the Carless Brit Experiment (a car-free lifestyle and environmental experiment), the blogs of Downtown Roanoke Incorporated and Dan Smith, Editor of Valley Business Front magazine, and other blogs and social media outlets. It should be noted that because the survey propagated by survey-takers sharing it via their own social networks, the survey self-selected for people who were likely to use the proposed bus connector service. This means that the survey results should not be taken to accurately reflect the population in general, but rather the high confidence that the survey takers themselves are very likely to behave exactly as they responded. For purposes of this study, we have projected potential passenger-trips based only on the number and responses of these survey takers (Table 6, below). Because this is not reflective of the population in general, it should be understood that these ridership projections are therefore extremely conservative.

Chart 1. 128 Responses

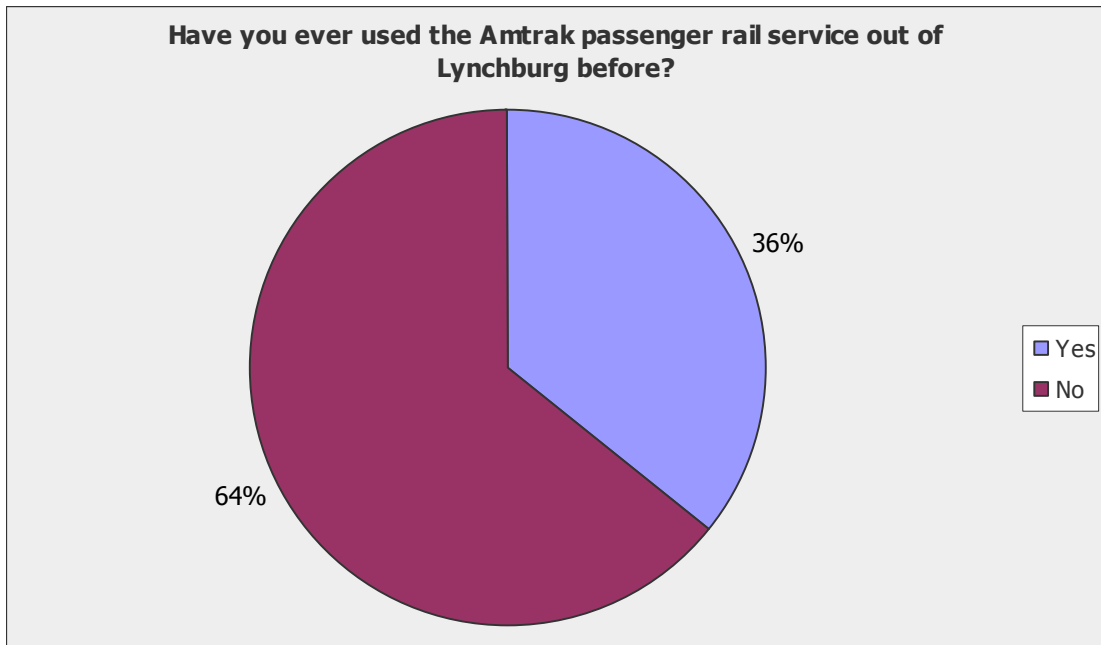


Chart 2. 128 Responses

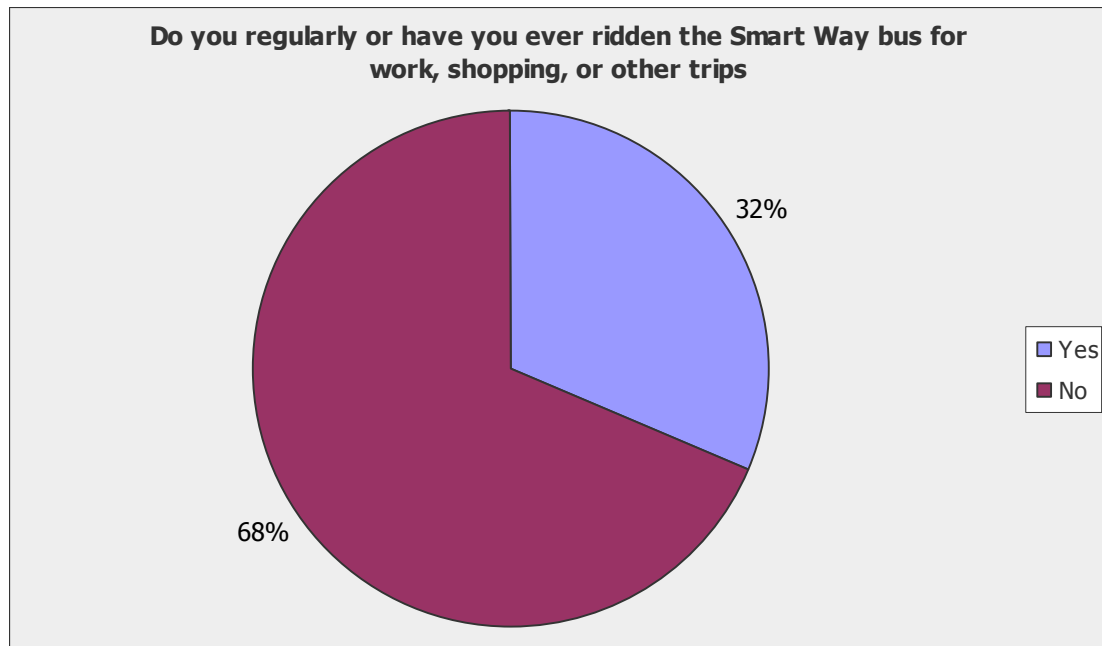


Table 5. Online Survey Ridership Responses

**How often would you go to Lynchburg, if the bus connector service were offered only in the early mornings (5:30 am departure time from Roanoke) and late evenings (10:30 pm arrival back to Roanoke), in order to coordinate with Passenger Rail service from Lynchburg to Washington D.C. and points North ending in Boston**

Answer Options	Response Percent	Response Count
More than one time per week;	4.0%	4
About one time per week;	2.0%	2
About one time every two weeks;	5.1%	5
About one time per month;	14.1%	14
About one time every few months;	44.4%	44
About one time a year;	30.3%	30
<b><i>answered question</i></b>		<b>99</b>
<b><i>skipped question</i></b>		<b>31</b>

Using the assumption that “More than one time per week” is equivalent to 2 times per week, and that “About one time every few months” is equivalent to one time every 2 months, the ridership resulting from these 99 responses is 1112 annual passenger-trips. Table 6 summarizes the trip estimates including the 1112 additional annual passenger-trips attributable to Step #4.



**Table 6. Trip Estimates as a result of Step #4**

<b>Annual Passenger-trips (Step #4)</b>	<b>Optimistic Assumption</b>	<b>Conservative Assumption</b>
<b>Roanoke Passenger-trips</b>	5931 passenger-trips	4824 passenger-trips
<b>Roanoke+NRV Passenger-trips</b>	6946 passenger-trips	5585 passenger-trips

**Long-Range Ridership Estimates (STEP #5):** Ridership on the Smart Way service between the Roanoke and New River Valleys has grown over the years as customers discover the service through marketing, word of mouth and other means. Likewise, a bus connector service between Roanoke and Lynchburg would likely develop increased ridership over the long-term for similar reasons. This step relates the observed Smart Way ridership increases to the first year ridership estimates for the proposed service. On average, Smart Way ridership has increased 146% from the first year of operation (2004-05) to the current year of operation (2008-09). The analogous Smart Way long-range percentage ridership increases will then be applied to the year one proposed service estimates and are summarized in Tables 9 and 10 below. The daily trip estimates assume 359 days of service per year as described in the next section of this report. The annual passenger-trips are distributed uniformly over the 359 days of service and are reflected in Table 8 for “Year One” and Table 10 “5+ Years.”

**Table 7. Trip Estimates as a result of Step #5 YEAR ONE**

<b>Annual Passenger-trips (final)</b>	<b>Optimistic Assumption</b>	<b>Conservative Assumption</b>
<b>Roanoke Passenger-trips</b>	5,931 passenger-trips	4,824 passenger-trips
<b>Roanoke+NRV Passenger-trips</b>	6,946 passenger-trips	5,585 passenger-trips

**Table 8. Daily Trip Estimates assuming 359 days of service per year (excluding major holidays) YEAR ONE**

<b>Daily Passengers (final)</b>	<b>Optimistic Assumption</b>	<b>Conservative Assumption</b>
<b>Roanoke Passengers</b>	16.5 passengers	13.4 passengers
<b>Roanoke+NRV Passengers</b>	19.3 passengers	15.6 passengers

**Table 9. Trip Estimates as a result of Step #5 FUTURE YEAR (5+ Years)**

<b>Annual Passenger-trips (final)</b>	<b>Optimistic Assumption</b>	<b>Conservative Assumption</b>
<b>Roanoke Passenger-trips</b>	14,590 passenger-trips	11,867 passenger-trips
<b>Roanoke+NRV Passenger-trips</b>	17,087 passenger-trips	13,739 passenger-trips

**Table 10. Daily Trip Estimates assuming 359 days of service per year (excluding major holidays) FUTURE YEAR (5+ Years)**

<b>Daily Passengers (final)</b>	<b>Optimistic Assumption</b>	<b>Conservative Assumption</b>
<b>Roanoke Passengers</b>	40.6 passengers	33.1 passengers
<b>Roanoke+NRV Passengers</b>	47.6 passengers	38.3 passengers

***Proposed Service:*** MORNING SERVICE FROM ROANOKE TO LYNCHBURG- MONDAYS THROUGH FRIDAYS: The projected departure time from Campbell Court, Roanoke to AMTRAK Station, Lynchburg is 5:45 a.m. with arrival time of 7:00 a.m. based upon AMTRAK Northeast Regional service departing from Lynchburg at 7:38 a.m.. This schedule allows for 1 hour and 15 minutes one-way travel time and 38 minutes for AMTRAK processing or total time of 1 hour and 53 minutes outbound. Wait time (22 minutes) to return from AMTRAK Station, Lynchburg to Roanoke allowed for returning passenger/luggage processing with the return trip departure time from Lynchburg to be 8:00 a.m. and arrival in Roanoke at 9:15 a.m. This schedule allows for 1 hour and 15 minutes travel time and 22 minutes wait time for total time of 1 hour and 37 minutes inbound.

SATURDAYS AND SUNDAYS: The projected departure time from Campbell Court, Roanoke to AMTRAK Station, Lynchburg is 8:10 a.m. with arrival time of 9:25 a.m. based upon AMTRAK Northeast Regional service departing at 9:59 a.m.. This allows for 1 hour and 15 minutes one-way travel time. Wait time (16 minutes) to return from AMTRAK Station, Lynchburg and depart at 10:15 a.m. from Lynchburg with arrival time of 11:30 a.m. in Roanoke (travel time of 1 hour and 15 minutes).

**EVENING SERVICE FROM ROANOKE TO LYNCHBURG-**

MONDAYS THROUGH FRIDAYS: The projected departure time from Campbell Court, Roanoke to AMTRAK Station, Lynchburg is 6:45 p.m. with arrival time of 8:00 p.m. based upon AMTRAK Northeast Regional service scheduled to be in Lynchburg at 8:36 p.m. Allows for 1 hour and 15 minutes one-way travel time and 36 minutes for processing at AMTRAK. Wait time (24 minutes) to return from AMTRAK Station, Lynchburg to Roanoke allowed and depart from Lynchburg at 9:00 p.m. and arrival in Roanoke at 10:15 p.m. (travel time of 1 hour and 15 minutes).

***Estimated Operating Cost of Proposed Service (note: does not include capital – new busses- costs):***

See next page:

**AMTRAK CONNECTION SERVICE**

**ROANOKE TO LYNCHBURG AND RETURN- 359 DAYS PER YEAR**

<b>REVENUE (PROJECTION OF 8 PASSENGERS PER DAY OR 2,920 WITH FARE BEING \$4 PER ONE-WAY TRIP)</b>		<b>\$11,488</b>
<b>PERSONNEL COSTS:</b>		
BUS OPERATOR (2,872 HRS X \$15.57 PER HR	\$	44,717
BUS OPERATOR EXTRA BOARD	\$	3,829
MECHANIC (52 SUNDAYS x \$27 PER HR-OT x 572 HRS)	\$	15,444
SUPERVISOR (FULL-TIME)	\$	32,000
INFORMATION OFFICER (FULL-TIME)	\$	19,500
MAINTENANCEN WORKER (FULL-TIME)	\$	21,500
CLEANER (FULL-TIME)	\$	25,563
SUBTOTAL	\$	162,553
FRINGE BENEFITS (33% X TOTAL WAGES/SALARIES)	\$	48,757
<b>TOTAL PERSONNEL COSTS</b>		<b>\$ 211,309</b>
<b>MATERIALS &amp; SUPPLIES:</b>		
FUEL (78,980 MILES- 9,872 GAL BASED ON 8 MILES PER GALLON)	\$	30,000
OIL	\$	500
OTHER LUBRICANTS	\$	500
TIRES	\$	3,660
PARTS FOR REVENUE VEHICLE	\$	5,000
TICKETS & TRANSFERS	\$	1,500
INSURANCE FOR VEHICLE	\$	15,000
PRINTING EXPENSE-SCHEDULES & MAPS	\$	2,500
UTILITIES (ELECTRIC & WATER)	\$	12,300
<b>TOTAL MATERIALS &amp; SUPPLIES</b>		<b>\$ 70,960</b>
<b>TOTAL PERSONNEL &amp; MATERIALS &amp; SUPPLIES</b>		<b>\$ 282,269</b>
ADMINISTRATIVE FEE (7.5% OF TOTAL)		\$ 21,170
<b>TOTAL OPERATING COST</b>		<b>\$ 303,440</b>
<b>NET COST</b>		<b>\$ 291,952</b>

NOTES: OPERATING COST ONLY AND DOES NOT INCLUDE COST FOR BUS  
 MARKETING GRANT WILL ALSO BE NEEDED FOR PUBLICITY OF SVC

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**APPENDIX-A – SUMMARY OF RELATED INFORMATION**

**SMART WAY EXPANDED SERVICES FOR  
AMTRAK CONNECTION IN LYNCHBURG  
BACKGROUND**

- Present Smart Way inter-city bus services began in 2004 to connect New River communities and Virginia Tech with Roanoke Valley communities. Distance is 42 miles one-way from the Squires Student Center at Virginia Tech to Campbell Court Transfer Center in downtown Roanoke.
- The present stops are: (1) Higher Education Center/Hotel Roanoke (2) Roanoke Regional Airport (3) Exit 140 Park N Ride (4) Exit 118A Park N Ride (5) Christiansburg K-Mart Lot and (6) Corporate Research Center besides Campbell Court in downtown Roanoke and Squires Student Center at Virginia Tech.
- Travel time varies from Virginia Tech to Roanoke and from Roanoke to Virginia Tech from 1 hour and 20 minutes when the bus has a stop at the Roanoke Regional Airport to 1 hour and 10 minutes without a stop at the Roanoke Regional Airport.
- The number of one-way trips is 13 Mondays through Fridays and 10 on Saturdays.
- The operating hours for Roanoke to Virginia Tech begin with first run at 5:15 a.m. and ends with last bus arriving in Roanoke at 9:40 p.m.
- The operating hours for Virginia Tech to Roanoke begin with first run at 6:20 a.m. and ends with last bus arriving at 8:20 p.m. except for Fridays and Saturdays with last bus arriving at Virginia Tech at 9:40 p.m.
- The fare is \$4 for one-way and \$120 for monthly pass effective January 4, 2010.
- Greyhound has bus service Mondays through Sundays from Roanoke to Lynchburg with one-way fare being \$14.75 and \$27 round-trip subject to discounts and seasonal discounts. Departure times from Roanoke to Lynchburg are: 1:45 a.m. and arriving in Lynchburg at 2:50 a.m.; departs Roanoke at 5:30 a.m. and arriving in Lynchburg at 6:35 a.m. and departs Roanoke at 1:45 p.m. and arriving in Lynchburg at 2:50 p.m.
- Greyhound has bus service Mondays through Sundays from Lynchburg to Roanoke with departure times from Lynchburg being 8:20 a.m. and arrives in Roanoke at 9:25 a.m.; departs Lynchburg at 2:55 p.m. and arrives in Roanoke at 4:00 p.m.; departs Lynchburg at 11:20 p.m. and arrives in Roanoke at 12:25 a.m.

- One way distance from Campbell Court in downtown Roanoke to the AMTRAK station in Lynchburg is 55 miles.
- Since Greyhound operates passenger bus service between Roanoke and Lynchburg will Smart Way be eligible or need to apply for operating authority with the Motor Carrier Division of the Virginia Division of Motor Vehicles.
- Greyhound bus service operating hours are not convenient for connection with AMTRAK in Lynchburg except for the morning run arriving in Lynchburg at 6:35 a.m. Mondays through Fridays to depart at 7:38 a.m.. Potential AMTRAK riders would have to wait for almost three and half hours on Saturdays and Sundays to depart at 9:59 a.m.
- Greyhound does not have convenient bus service for AMTRAK riders needing to return from Lynchburg to Roanoke or the New River Valley and Virginia Tech. AMTRAK arrives in Lynchburg Mondays through Fridays at 8:36 p.m.; Saturdays at 7:39 p.m. and Sundays at 8:29 p.m. Wait time would be three to four hours with Greyhound departing Lynchburg at 11:20 p.m. There also would be connection between Roanoke and the New River Valley communities and Virginia Tech due to no service by Greyhound.
- AMTRAK connection bus service without any stops between Virginia Tech and Roanoke would have a projected travel time of 50 minutes (allowing for any traffic delays on I-81) as compared to 1 hour and 10 to 20 minutes if you stopped at the six listed stops.
- AMTAK connection bus service without any stops between Roanoke and Lynchburg would have a projected travel time of 1 hour and 5 minutes which is the same as Greyhound.
- Two (2) additional MCI coach style buses would be required for the inter-city service, one in service, the other in reserve. This type of bus is needed for the luggage capacity, Wi-fi and monitor communication capability and comfort in order to better market the service. Projected capital cost would be approximately \$500,000 per bus or a total of \$1 million. Assuming a purchase with a Federal Transit Administration (FTA) grant for each coach, the 20% match would require \$100,000 in local funding or \$50,000 assuming a 10% state match for each bus or a total of \$200,000 or \$100,000 if the state provides the 10% state match.
- Operating costs will increase if operating seven days per week as Sunday service is not provided at this time. Later hours of service due to the return time of AMTRAK in the evening. Minimum of one trip and return in the morning and one trip in the evening for the return of passengers from AMTRAK. Operating hours would be 8 hours each day with 4 hours in the morning and 4 hours in the evening. Late arrival to Lynchburg would also increase operating costs for overtime on occasion.

**APPENDIX – B – ON-BOARD SURVEY QUESTIONS**

**1) As a current SmartWay customer, would you take a similar service, or extension of current SmartWay service to Lynchburg? (please check one)**

- Yes, I would take bus connector service from the New River Valley to Lynchburg. (*specify destinations*)\_\_\_\_\_
- Yes, I would take bus connector service from the Roanoke Valley to Lynchburg. (*specify destinations*)\_\_\_\_\_
- No, I am not interested in travelling to Lynchburg on a bus connector service.

**2) If you answered yes to Question 1, how often would you go to Lynchburg on a bus connector service with Lynchburg as your primary destination, assuming an all day schedule? (please check one)**

- More than one time per week; (*specify*)\_\_\_\_\_
- About one time per week;
- About one time every two weeks;
- About one time per month;
- About one time every few months;
- About one time a year.

**3) If you answered yes to Question 1, how often would you go to Lynchburg, if the bus connector service were offered only in the early mornings (5:30 am departure time from Roanoke) and late evenings (10:30 pm arrival back to Roanoke), in order to coordinate with Passenger Rail service from Lynchburg to Washington D.C. and points North ending in Boston. (please check one)**

- More than one time per week; (*specify*)\_\_\_\_\_
- About one time per week;
- About one time every two weeks;
- About one time per month;
- About one time every few months;
- About one time a year;
- I would not travel to Lynchburg for Passenger Rail service.

**4) Other comments you feel were unaddressed by these questions (please write below).**

APPENDIX – C – RICHMOND TIMES-DISPATCH ARTICLE

The screenshot shows the top portion of a web browser displaying a news article. At the top left is the "Richmond Times-Dispatch" logo. To its right is a promotional banner for "Get up to \$5350/Year to Finish School" with a photo of a woman and a "Get details..." link. Below the logo is a navigation bar with links for NEWS, BUSINESS, SPORTS, ENTERTAINMENT, LIFESTYLES, WEATHER, OBITUARIES, VIDEO, and TOOLS. A search bar is present with "Keyword" selected and "Go" and "YAHOO! SEARCH" buttons. The date and weather are shown as "Tuesday, January 12, 2010 | New Kent, VA 36° Feels Like: 32° Clear". Below this is a "Metro & Virginia" section header and a "Celebrations" sidebar with the text "Share your good news. click here...". A navigation breadcrumb reads "HOME > NEWS > STATE REGIONAL". The article title is "New Va. Amtrak line exceeds ridership expectations". The byline is "By AP" and the publication date is "December 17, 2009". There are "15 Comments" and a "Post a Comment" link. The main text includes a "vote now" button, a "buzz up" button, and a paragraph: "The new Amtrak train between Lynchburg and Washington had twice as many passengers as state officials expected during its first month of operation in October. Kevin Page, the Department of Rail and Public Transportation's rail transportation chief, told the Commonwealth Transportation Board on Wednesday that passenger fares totaled \$414,000, 87 percent higher than expected. Total ridership on the new train in October totaled 8,500 passengers. The train stops in Charlottesville en route to Washington. Ridership normally is lower in the winter months, and while October results are promising, a better performance indicator will be known after the train has operated for three full months."