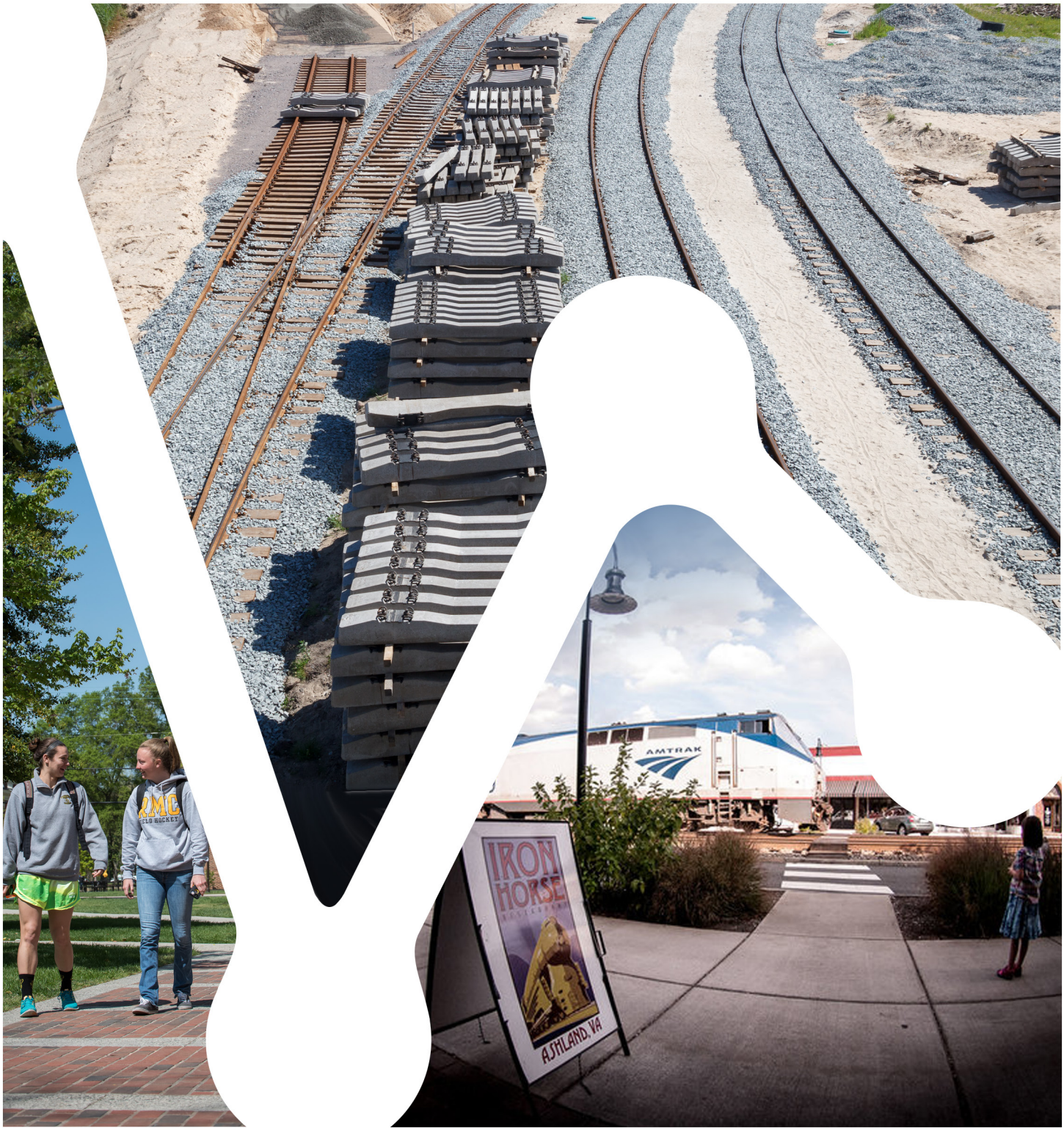
Estimated Impact of

PROPOSED DC2RVA RAIL ALTERNATIVES ON THE TOWN OF ASHLAND



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Executive Summary

This report assesses the potential economic and fiscal impact on the Town of Ashland from proposed construction alternatives associated with Alternative Area 5, the ten-mile portion of the 123-mile DC2RVA High-Speed Rail Project that encompasses the Town of Ashland. The principal findings from that assessment are as follows:

1. The DC2RVA High-Speed Rail Project:
    - The purpose of DC2RVA is to increase rail capacity along the Washington, D.C. to Richmond corridor in order to provide reliable, frequent, and high-speed passenger service, and also to better accommodate freight rail movement through the corridor, including freight going to and from Virginia's ports.
    - In addition to proposed improvements to stations, parking, signals, and other safety systems, the primary infrastructure improvement associated with the DC2RVA High-Speed Rail Project would be to add an additional main track to the existing two main tracks within this corridor.
2. Proposed construction alternatives for the Ashland portion of the DC2RVA corridor:
    - In September of this year, Federal Rail Administration (FRA) and the Virginia Department of Rail and Public Transportation (DRPT) proposed five general construction alternatives for the Ashland portion of the DC2RVA High-Speed Rail Project. Those alternatives were: 1) maintain two tracks through Ashland (the 3:2:3 option), 2) add one track east of the existing two tracks running through Ashland, 3) construct three tracks running through Ashland that would be centered within the existing right of way, 4) construct a three-track trench running through Ashland, and 5) add a two-track western bypass.:
        - Maintain two tracks through Ashland (the 3:2:3 option).
        - Add one track east of the existing two tracks running through Ashland.
        - Construct three tracks running through Ashland that would be centered within the existing right of way.
        - Construct a three-track trench running through Ashland.
        - Add a two-track western bypass>
    - Subsequent to the release of the FRA and DRPT proposed construction alternatives:
        - The Hanover County Board of Supervisors passed a resolution endorsing the 3-2-3 construction alternative.
        - The Ashland Town Council passed a resolution endorsing the western bypass.

3. Our analysis:

- Focused on the two general categories of these proposed alternatives that are likely to have a significantly disruptive impact on the Town of Ashland's economy during their construction phase – proposals for an above-ground third-track through downtown Ashland (which are generally assumed to entail a two-year construction period), and the three-track trench through downtown Ashland (which is generally assumed to entail a three-year construction period).
- Used stakeholder focus group input, the results of an informal telephone survey of businesses along the existing railroad right of way on Center Street and Railroad Avenue, and a review of the existing empirical literature on the impact of transportation construction projects on adjacent businesses, to construct a *High Impact* and a *Low Impact* scenario around two general categories of these proposed alternatives.
- Determined that according to the assumptions of the *High Impact* scenario:
    - Construction-related business closures and reduced sales among businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road would generate an annual loss of approximately 133 full-time-equivalent jobs, $4.2 million in local labor income, and $10.9 million in local economic output within the Ashland/Hanover community.
    - Those losses would persist for at least two years under the above-ground third-track construction options, and at least three years under the three-track trench construction option, and then gradually abate over an unspecified period of time.
    - The cumulative construction-related direct loss of tax revenue during the two-year construction period for the above-ground third-track construction options would likely be at least ($345,134) for the Town of Ashland, and ($179,296) for Hanover County. While, the cumulative construction-related direct loss of tax revenue during three-year construction period for the proposed three-track trench would likely be at least ($517,702) for the Town of Ashland, and ($268,944) for Hanover County.

- Determined that according to the assumptions of the *Low Impact* scenario:
    - Construction-related business closures and reduced sales among businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road would generate an annual loss of approximately 77 full-time-equivalent jobs, $3.0 million in local labor income, and $7.9 million in local economic output within the Ashland/Hanover community.
    - Those losses would persist for at least two years under the above-ground third-track construction options, and at least three years under the three-track trench construction option, and then gradually abate over an unspecified period of time.
    - The cumulative construction-related direct loss of tax revenue during the two-year construction period for the above-ground third-track construction options would likely be at least ($140,891) for the Town of Ashland, and ($80,526) for Hanover County. While, the cumulative construction-related direct loss of tax revenue during three-year construction period for the proposed three-track trench would likely be at least ($211,337) for the Town of Ashland, and ($120,790) for Hanover County.
- Also demonstrated that the construction of an above-ground third track or the three-track trench through the center of Ashland would likely have negative impacts that, although difficult to quantify, are nonetheless important to qualify. Chief among those is the potential negative impact that the proposed construction alternatives could have on:
    - The 2,575 jobs, $51.1 million in payroll, and $13.8 million in state and local tax revenue that the Ashland/Hanover community derives from tourism.
    - The 447 faculty and staff jobs and $22.7 million in direct spending that Randolph-Macon College contributes to the Ashland/Hanover community.
    - The attractiveness to tourists, shoppers, and residents that the Town of Ashland derives from its small-town quality of life and reputation as a “train town.”

Estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing that information. However, because these estimates attempt to foresee circumstances that have not yet occurred, it is not possible to provide any assurance that they will be representative of actual events. These estimates are intended to provide a general indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.

Introduction

This report quantifies the potential economic and fiscal impact on the Town of Ashland from proposed construction alternatives associated with Alternative Area 5, the ten-mile portion of the 123-mile DC2RVA High-Speed Rail Project that encompasses the Town of Ashland. The remainder of the report is divided into five sections. *The DC2RVA High-Speed Rail Project* section provides a brief summary of the DC2RVA project and the evolution of the process that generated the currently proposed construction alternatives. The *Background Information* section provides a context for the economic and fiscal impact assessment to follow by providing general background on the Town of Ashland and the economy of the . The *Economic and Fiscal Impact* section provides an estimate of the potential economic and fiscal impact on the Town of Ashland associated with existing proposed Alternative Area 5 construction alternatives. While the *Other Impacts* section identifies and addresses some of the other potential consequences associated with those proposed construction alternatives. Finally, the *Conclusion* section provides a brief summary of our findings and concluding comments.

The DC2RVA High-Speed Rail Project

General Description

The DC2RVA High-Speed Rail Project involves service and infrastructure improvements to an existing 123-mile rail corridor owned by CSX Transportation that links Union Station in Washington D.C. to Centralia in Chesterfield County just south of Richmond. The purpose of the project is to increase rail capacity along the Washington, D.C. to Richmond corridor in order to provide reliable, frequent, and high-speed passenger service, and also to better accommodate freight rail movement through the corridor, including freight going to and from Virginia's ports. The need for these improvements is being driven primarily by population growth along the eastern seaboard, which is causing significant and ever-worsening congestion in the I-95 interstate highway corridor, and that is increasing the demand for efficient and reliable passenger rail service and freight rail service within the DC2RVA rail corridor.

In addition to proposed improvements to stations, parking, signals, and other safety systems, the primary infrastructure improvement associated with the DC2RVA High-Speed Rail Project would be to add an additional main track, either to the left or right, of the existing two main tracks within this corridor. According to the Federal Rail Administration (FRA) and the Virginia Department of Rail and Public Transportation (DRPT), it is anticipated that the proposed improvements to the DC2RVA corridor would be completed by 2025 and enhanced passenger and rail service could be made available at that

time. It is further anticipated that, that enhanced rail service would include nine additional Amtrak daily round-trip passenger trains within the DC2RVA corridor.

Proposed Construction Alternatives for Ashland

After a lengthy review and public engagement process that began in 2014, in September of this year, FRA and DRPT issued their "Tier II Draft Environmental Impact Statement Section 4(f) Evaluation" report. That report proposed five general construction alternatives for Alternative Area 5, the ten-mile portion of the DC2RVA High-Speed Rail Project that encompasses the Town of Ashland. Those alternatives were:

1) Maintain two tracks through Ashland: This is sometimes called the 3:2:3 option. It would involve constructing a third track north and south of the Town of Ashland but maintaining the existing two tracks through town. This option would mean that all tracks through town remain within their existing right of way. There were two variants of this option. One left the Town of Ashland's existing train station at its current location and one required relocating it to Ashcake Road.

2) Add one track east of the existing two tracks running through Ashland: This option would involve adding an additional track through the Town of Ashland to the east of the existing two tracks. This option would require the acquisition of additional right of way and could potentially impact 42 parcels, although impacts would generally be limited to frontage, sidewalks, and driveways. This option would also necessitate closing a portion or Railroad Avenue and Center Street. There were two variants of this option. One left the Town of Ashland's existing train station at its current location and one required relocating it to Ashcake Road. It is anticipated that this option would involve a two-year period of construction in downtown Ashland.

3) Construct three tracks running through Ashland that would be centered within the existing right of way: This option would involve adding an additional track through the Town of Ashland but centering all three tracks on the existing right of way. This option would require the acquisition of additional right of way and could potentially impact 76 parcels, although impacts would generally be limited to frontage, sidewalks, and driveways. This option would also necessitate closing a portion of Railroad Avenue and Center Street. In addition, this option would require relocating the Town of Ashland's existing train station to Ashcake Road. It is anticipated that this option would involve a two-year period of construction in downtown Ashland.

4) Construct a three-track trench running through Ashland: This option would the involve construction of a trench, 11,000 feet long, 50 feet wide, and 33 feet deep, between Vaughan Road and Ashcake Road to accommodate three tracks through the Town of Ashland. This

option would require the acquisition of additional right of way and could potentially impact 76 parcels downtown (although impacts would generally be limited to frontage, sidewalks, and driveways), and 56 parcels adjacent to planned overpasses at Vaughan Road and Ashcake Road. This option would also necessitate the temporary closing of a portion Center Street. In addition, this option would require relocating the Town of Ashland's existing train station to Ashcake Road. As part of the construction, trench covers could be used to create new green space in downtown Ashland over the trench. It is anticipated that this option would involve a three-year period of construction in downtown Ashland.

5) Add a two-track western bypass: This option would involve constructing a two-track bypass to the west of the Town of Ashland in Hanover County. This option would require the acquisition of additional right of way in Hanover County and could potentially impact between 71 and 81 parcels. This option would not require the acquisition of additional right of way within the Town of Ashland.

FRA and DRPT Recommendations

Based on its analysis, FRA and DRPT concluded in their "Tier II Draft Environmental Impact Statement Section 4(f) Evaluation" report that: 1) the existing right of way through Ashland is limited and any alternative that adds a third track through the town will necessitate the acquisition of additional right of way, and 2) additional stakeholder input would benefit the agency's recommendation. Based on those conclusions, DRPT opted to defer its recommendation of a preferred construction alternative for Alternative Area 5, the ten-mile portion of the DC2RVA High-Speed Rail Project that encompasses the Town of Ashland, pending additional study of rail capacity improvements through the area. It is important to note that Alternative Area 5 was the only area along the 123-mile DC2RVA corridor for which DRPT chose not to recommend a preferred construction alternative.

Community Resolutions

In response to the intensity of public concern expressed regarding the DC2RVA construction alternatives proposed for the Ashland portion of the corridor, FRA and DRPT established a Community Advisory Committee (CAC). The CAC was comprised of representatives from the Town of Ashland, CSX Transportation, Hanover County, Randolph-Macon College, and the Richmond Regional Transportation Planning Organization. The CAC was charged with reviewing all proposed construction alternatives and providing advice to DRPT to help inform its final recommendation of a preferred construction alternative. The CAC held five monthly meetings between May and September of this year.

Although the CAC was unable to establish consensus on a single preferred construction alternative, at its final meeting on September 11 it presented its recommendation for the three "least objectionable" options. Those three were:

1) The 3-2-3 option to maintain two tracks through the Town of Ashland.
2) The two-track western bypass option.
3) The three-track trench running through the Town of Ashland.

Subsequent to the September 11 CAC meeting, the Hanover County Board of Supervisors passed a resolution on October 16 endorsing the 3-2-3 construction alternative. In presenting that endorsement, the Board cited several reasons for its decision. Among those were:

1) The severe impact that the western bypass option would have on the 81 parcels and 21 homes it would affect.
2) The severe impact that adding a third above-ground track would have on the Town of Ashland and its businesses.
3) The impact that the three-track trench would have on the Town of Ashland and its businesses because of the long three-year construction period required.
4) The FRA's previously announced intention to adopt an incremental approach to rail enhancements along the corridor in which improvements would be added on an as-needed basis.

Then, on October 20 the Ashland Town Council passed a resolution endorsing the two-track western bypass construction alternative and opposing the relocation of the current Ashland train station. In presenting that resolution, the Council also cited several reasons in support of its decision. Among those were:

1) The addition of a third above-ground track would severely impact the economic vitality and historic character of the Town of Ashland; restrict access to Randolph-Macon College and damage the safety, character, and usability of its campus; and restrict the flow of traffic moving east-west within the Town of Ashland.
2) The three-track trench would severely impact the economic vitality and historic character of the Town of Ashland and had not been adequately studied.
3) The 3-2-3 option to maintain two tracks through the Town of Ashland would merely delay a final resolution of the issue as it would not adequately address projected future capacity needs; and had been rejected by CSX Transportation, the owners of the tracks.

Background Information

In this section, we provide a context for the economic and fiscal impact analyses to follow by providing some general background on the Town of Ashland and the Ashland/Hanover economy.

General Description

The Town of Ashland is a historic and picturesque locality with a population of around 7,200 residents. It was initially developed by the railroad as a mineral springs resort in the late 1840s. In 1868, Randolph-Macon College relocated to the Town of Ashland and that move eventually transitioned the character of Ashland into what it is today – a small college town where Randolph-Macon College not only provides a cultural locus for the Ashland community but is also the town's primary economic driver.

Recent Economic Trends

In this portion of the section, we set the stage for the economic and fiscal impact analyses to follow by providing background information on the Ashland/Hanover community's key economic characteristics. In reviewing these data, it is important to keep in mind that employment and wage data reported for Hanover County are inclusive of the Town of Ashland.[1]

Total Employment

Figure 1 provides data on the trend in total employment in Hanover County over the five-year period from the first quarter of 2012 through the first quarter of 2017. As these data demonstrate, employment growth in the county increased steadily over the period. Overall, between 1st quarter of 2012 and the 1st quarter of 2017 Hanover County experienced an increase of 5,723 jobs, or a 13.1 percent increase in total employment. To put that figure in perspective, over the same period the state of Virginia as a whole experienced a 6.0 percent increase in total employment.

[1] Because the Town of Ashland is not an independent city, its employment and wage data are not reported individually by the Virginia Employment Commission. Instead, they are included in data reported for Hanover County.

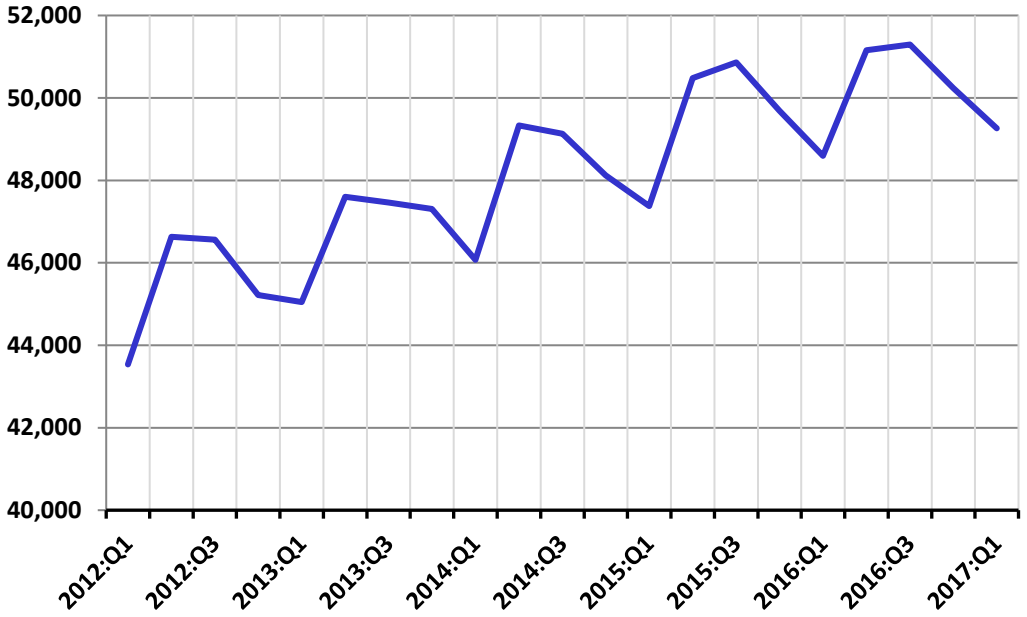

Figure 1: Hanover County Total Employment – 1st Quarter of 2012 through 1st Quarter of 2017[2]

To provide a point of reference, and to control for seasonality, Figure 2 compares Hanover County's year-over-year change in total employment over this same five-year period to comparable data for the state of Virginia as a whole. Any observation above the zero line in this graph denotes a year-over-year increase in employment, while any observation below the zero line denotes a year-over-year decline in employment. As these data indicate, up until 2016 year-over-year changes in employment in Hanover County generally exceeded the statewide average and typically by a substantial margin. However, in 2016 that changed as employment growth within the county collapsed back to the statewide trend. Moreover, in both cases, employment growth decelerated steadily throughout 2016. As of the first quarter of 2017, the year-over-year change in total employment was 1.4 percent in both Hanover County and the state of Virginia as a whole.

[2]*Data Source*: Virginia Employment Commission.

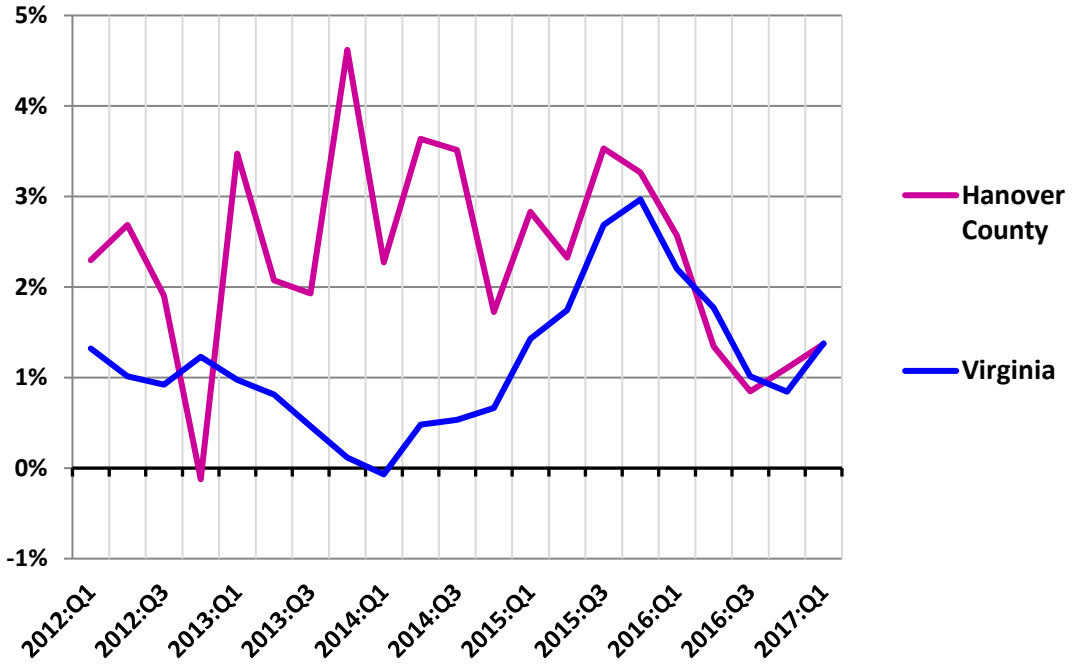

Figure 2: Year-Over-Year Change in Employment – 1st Quarter of 2012 through 1st Quarter of 2017[3]

Employment and Wages by Major Industry Sector

Figures 3 and 4 provide additional information on the factors underlying the employment trends displayed in Figures 1 and 2, by providing data on employment and wages by major industry sector in Hanover County in 2016. As these data show, the largest employment sector in the county that year was *Retail Trade* with 7,188 jobs (18th in wages at $585 per week), followed by *Health Care and Social Assistance* with 6,368 jobs (9th in wages at $927 per week), *Wholesale Trade* with 5,212 jobs (5th in wages at $1,110 per week), *Construction* with 5,209 jobs (8th in wages at $954 per week), and *Accommodation and Food Services* with 3,855 jobs (19th in wages at $292 per week). To place these figures in perspective, the average wage across all industry sectors in Hanover County in 2016 was $799 per week.

[3]*Data Source*: Virginia Employment Commission.

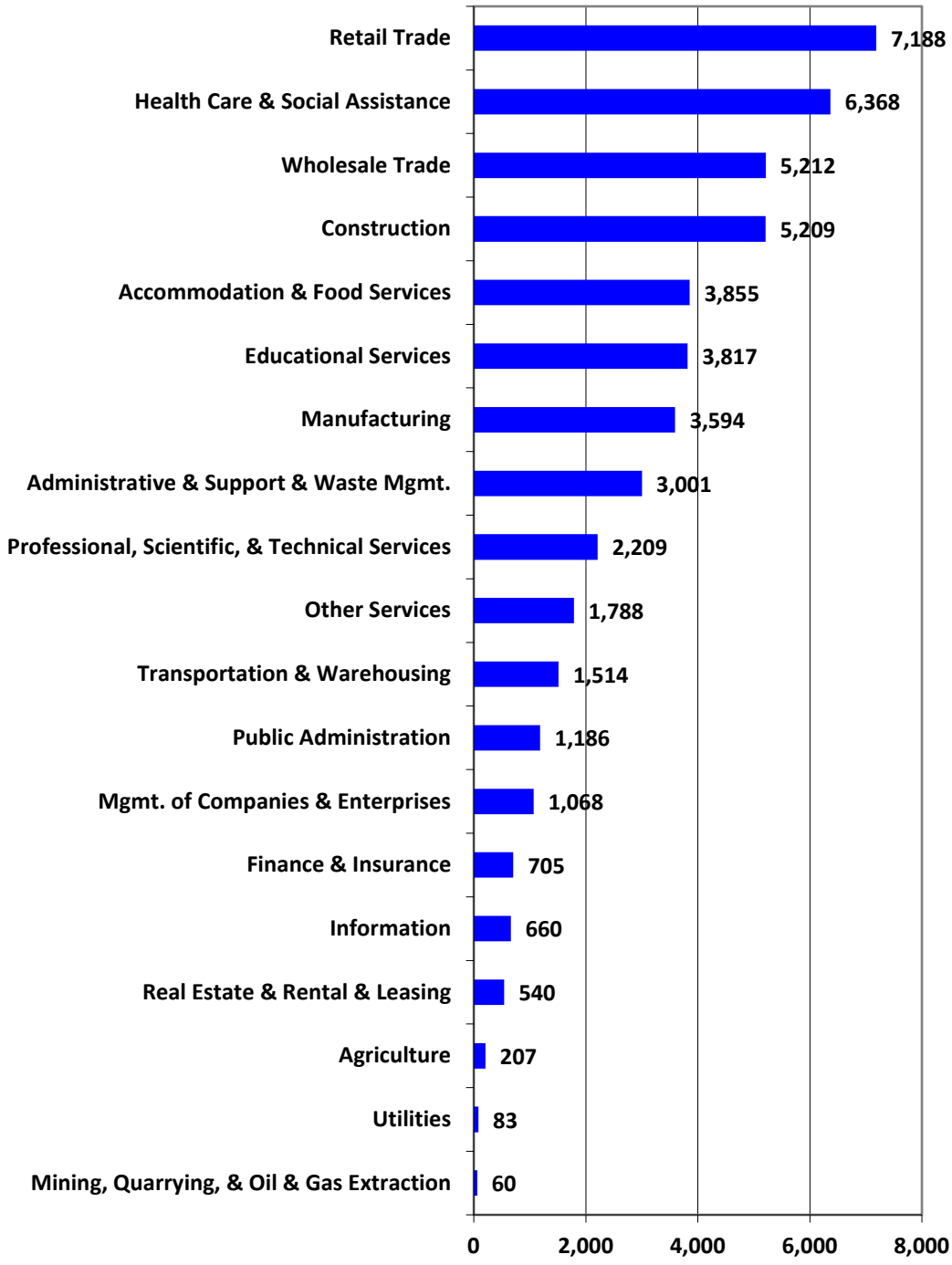

Figure 3: Employment by Major Industry Category in Hanover County in 2016[4]

[4]*Data Source*: Virginia Employment Commission.

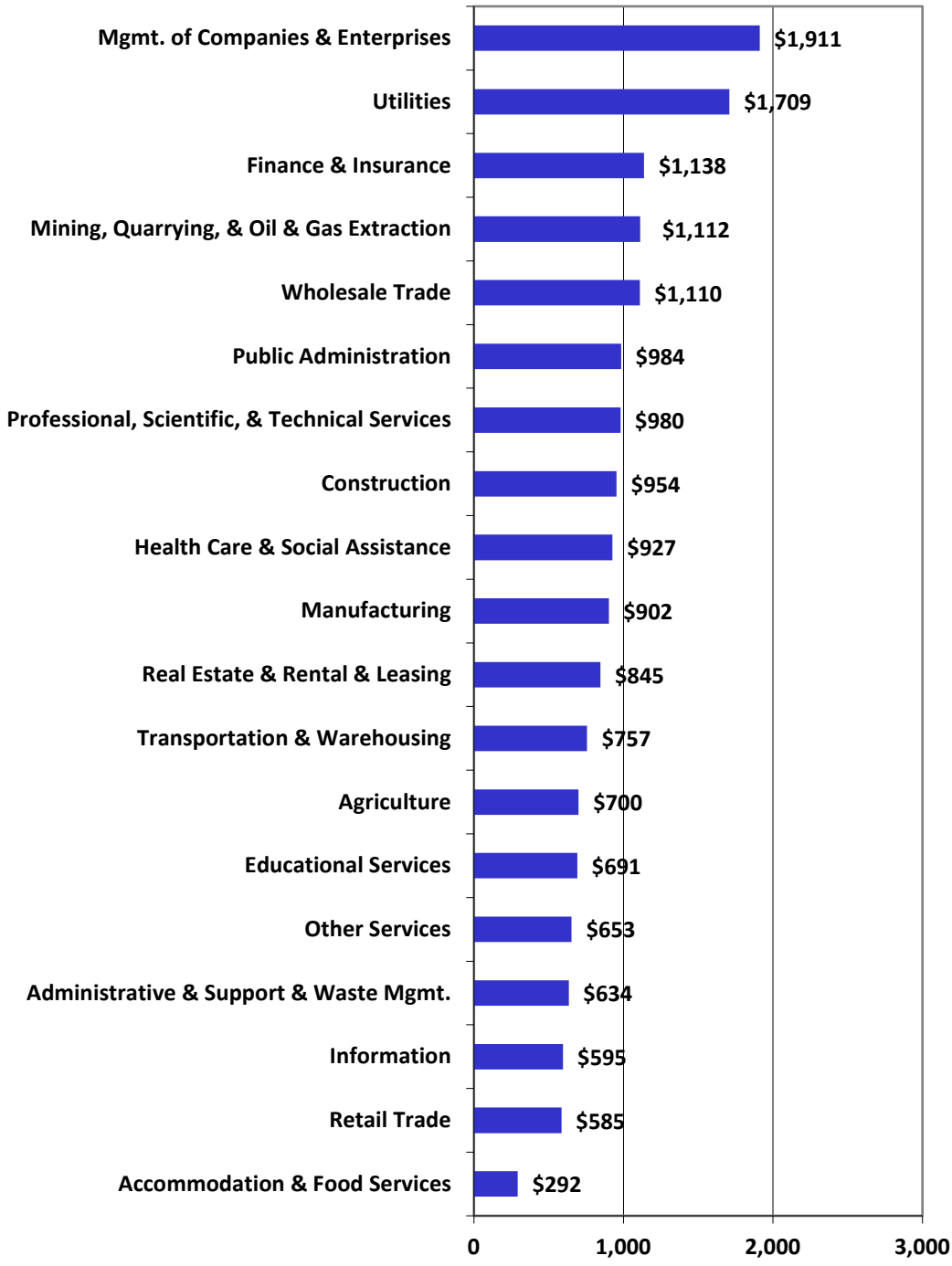

Figure 4: Average Weekly Wages Major Industry Category in Hanover County in 2016[5]

[5]*Data Source*: Virginia Employment Commission.

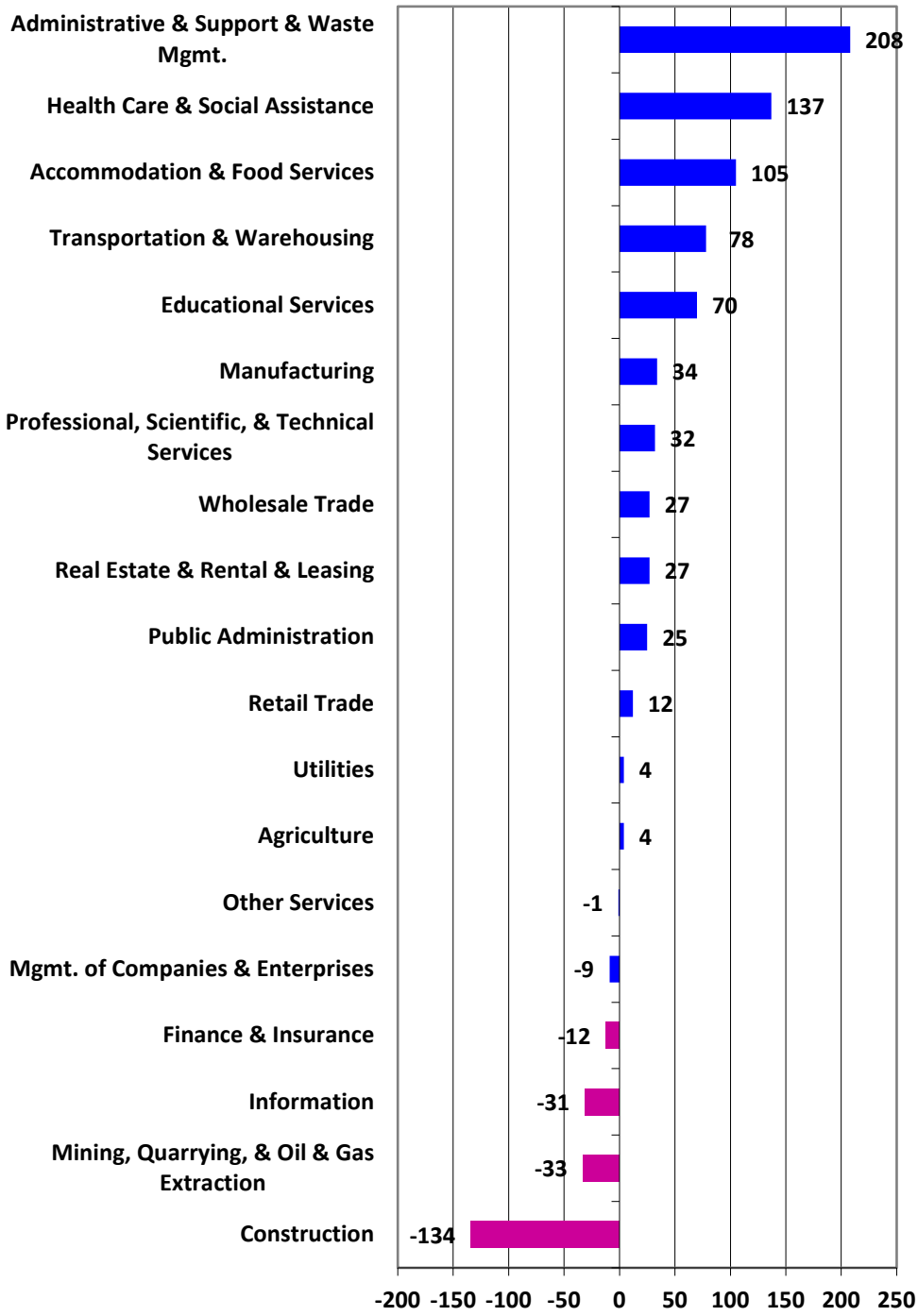

Figure 5: Change in Employment by Major Industry Category in Hanover County between 2015 and 2016[6]

[6] *Data Source*: Virginia Employment Commission.

Figure 5 depicts the change in employment in Hanover County by major industry sector between 2015 and 2016. As these data indicate, the largest employment gains in the county over this period occurred in the *Administrative and Support and Waste Management Services* (up 208 jobs), *Health Care and Social Assistance* (up 137 jobs), and *Accommodation and Food Services* (up 105 jobs) sectors. At the other end of the spectrum, the largest employment losses in Hanover County occurred in the *Construction* (down 134 jobs), *Mining* (down 33 jobs), and *Information* (down 31 jobs) sectors.

Unemployment

Figure 6 provides information on unemployment trends in Hanover County over the five-year period from August 2012 to August 2017 and benchmarks those data against the statewide norm. As these data show, throughout this period unemployment rates in the county tracked relatively closely with the statewide average. However, Hanover County's unemployment rate was typically about one half a percentage point below the statewide average. As of August 2017, unemployment stood at 3.4 percent in Hanover County and 3.8 percent statewide in Virginia.

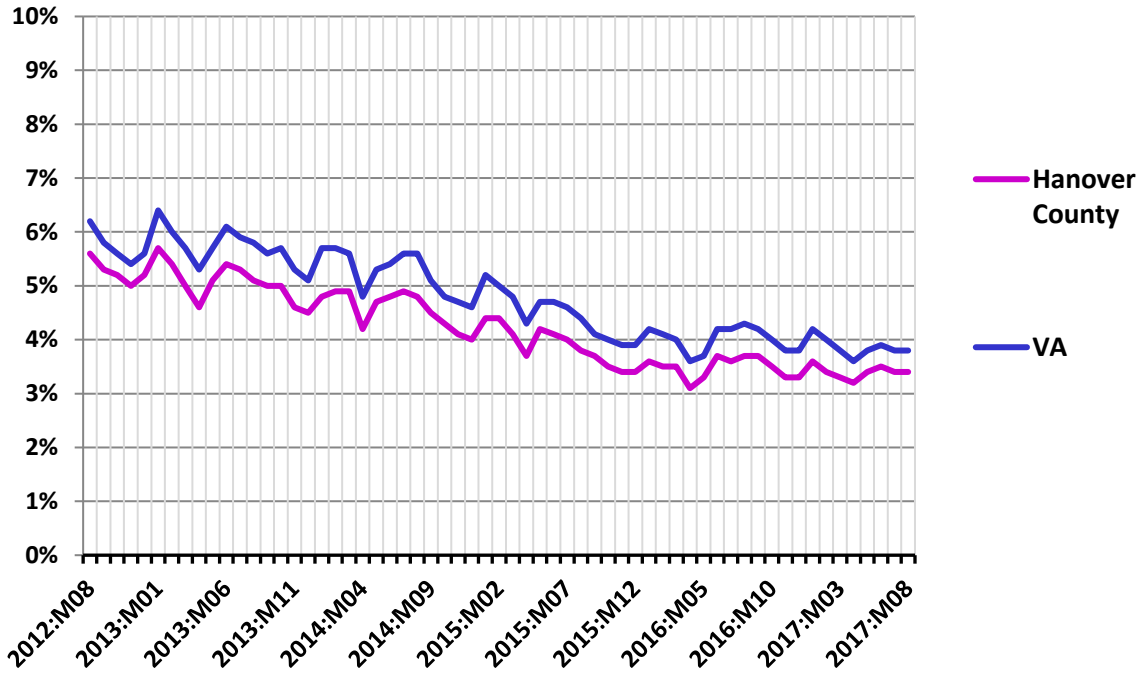

Figure 6: Unemployment Rate – August 2012 to August 2017[7]

[7]*Data Source*: Virginia Employment Commission.

Fiscal Trends

Because it is not possible to obtain employment and wage data for the Town of Ashland specifically, in this portion of the section we look at a different measure of local economic activity. That measure is local revenue derived from business activity. These data are available from the Virginia Auditor of Public Accounts for towns as well as counties and that allows us to better isolate recent economic trends in the Town of Ashland relative to trends in Hanover County.

Figure 7 depicts the year-over-year change in *Other Local Taxes* revenue in the Town of Ashland over the five-year period from 2012 through 2016 and benchmarks those data against comparable data for Hanover County, as well as the statewide average across all Virginia towns and all Virginia counties. *Other Local Taxes* is primarily comprised of revenue from the local Sales and Use Tax, Business License (BPOL) Tax, Hotel and Motel Room Tax, and Restaurant Meals Tax. As these data show, the overall trend for the Town of Ashland over this period has been one of growing revenue collections, with the year-over-year change in *Other Local Taxes* revenue rising from 2.7 percent in 2012 to 8.7 percent in 2016. It is significant to note, however, that much of that increase is attributable to a significant spike in 2016 when overall collections of *Other Local Taxes* increased by $373,825 relative to 2015.

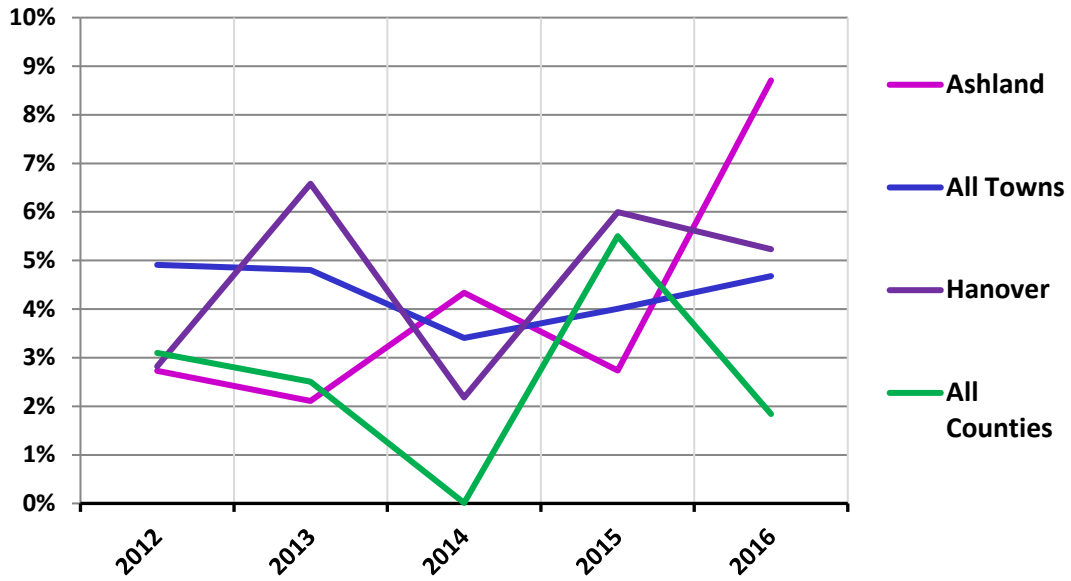

Figure 7: Year-Over-Year Change in Other Local Tax Revenue – 2008 through 2016[8]

[8]*Data Source*: Virginia Auditor of Public Accounts.

Figures 8 through 10 provide a drill-down of the data in Figure 7 for three key revenue streams that are directly related to changes in business activity: the Business License or BPOL Tax, which is a tax on a business' gross receipts; the Hotel and Motel Room Tax, which is a tax on hotel and motel room rentals; and the Restaurant Meals Tax, which is a local tax on restaurant meals in addition to the local sales tax.

As the data depicted in Figure 8 indicate, the overall trend for the Town of Ashland over this period with respect to Business License (BPOL) Tax revenue was again one of growth, with the year-over-year change in revenue from this tax rising from 0.2 percent in 2012 to 22.8 percent in 2016. Here again, however, it bears notice that much of that increase is attributable to a spike in 2016 when overall collections of Business License Tax revenue increased by $106,063 relative to 2015. Moreover, that increase accounted for 28 percent of the Town of Ashland's spike in revenue from *Other Local Taxes* that year.

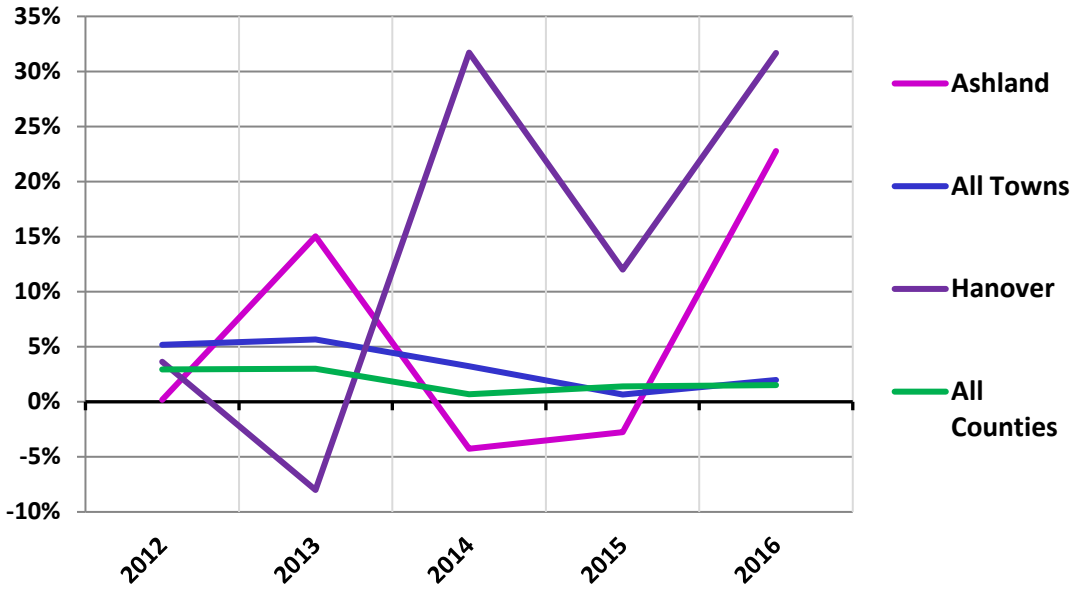

Figure 8: Year-Over-Year Change in Business License Tax Revenue – 2008 through 2016[9]

[9]*Data Source*: Virginia Auditor of Public Accounts.

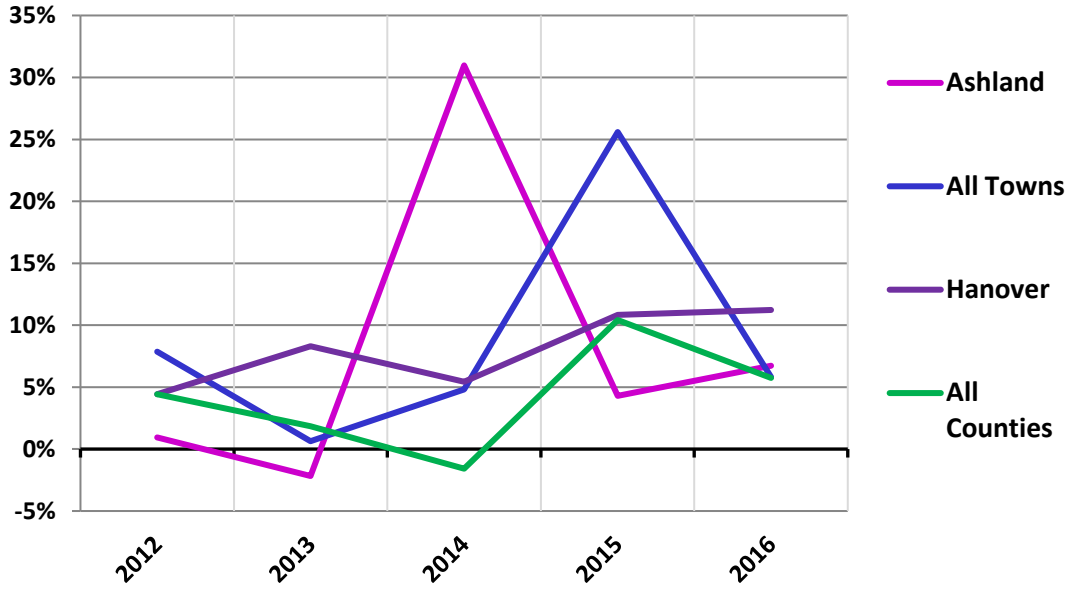

Figure 9: Year-Over-Year Change in Hotel and Motel Room Tax Revenue – 2008 through 2016[10]

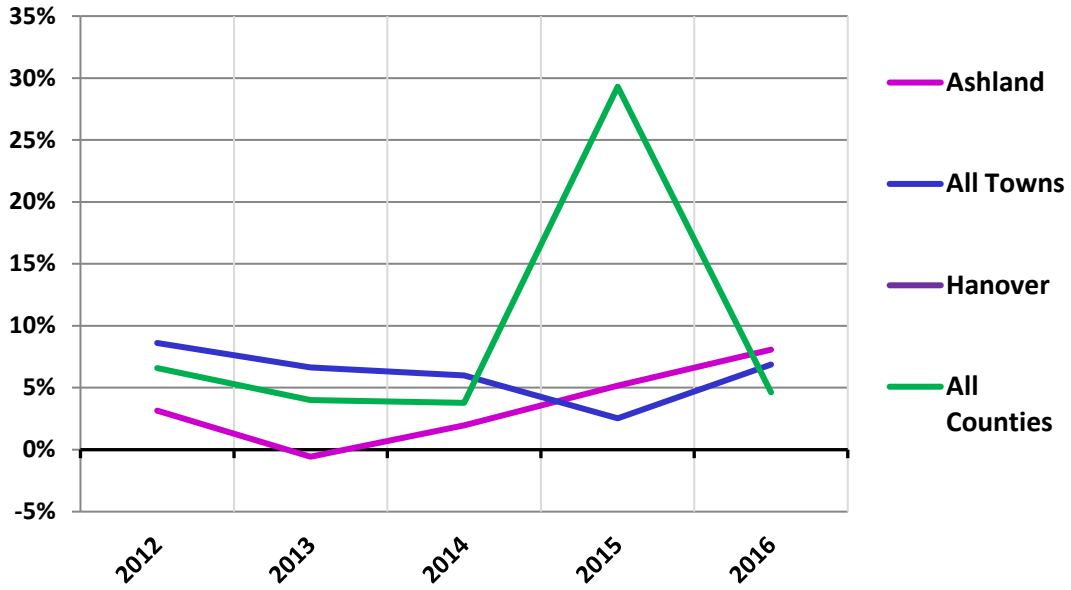

Figure 10: Year-Over-Year Change in Restaurant Meals Tax Revenue – 2008 through 2016[11]

[10] *Data Source*: Virginia Auditor of Public Accounts.
[11] *Data Source*: Virginia Auditor of Public Accounts.

As indicated in Figure 9, the overall trend with respect to Hotel and Motel Room Tax revenue in the Town of Ashland over this period was more varied. However, over the period as a whole Ashland's year-over-year change in revenue from this tax rose from 0.9 percent in 2012 to 6.7 percent in 2016. Focusing again on 2016, it should be noted that overall collections of Hotel and Motel Room Tax revenue increased by $41,012 that year relative to 2015, and that increase accounted for 11 percent of the Town of Ashland's spike in revenue from *Other Local Taxes* that year.

Finally, as shown in Figure 10, the overall trend for the Town of Ashland with respect to Restaurant Meals Tax revenue over this period was also one of growth, with the year-over-year change in revenue from this tax rising from 3.1 percent in 2012 to 8.1 percent in 2016 (please note that Hanover County does not impose a Restaurant Meals Tax). However, again, much of that increase occurred in 2016 when revenue from the town's Restaurant Meals Tax increased by $157,150 relative to 2015, and that increase accounted for 42 percent of the Town of Ashland's spike in revenue from *Other Local Taxes* that year.

In Sum

Over the last five years, the economy of the Ashland/Hanover community has out-performed the statewide average. Between the first quarter of 2012 and the first quarter of 2017, total employment in Hanover County area grew by 13.1 percent in contrast to a 6.0 percent average growth rate statewide. However, since 2016 year-over-year employment growth in Hanover County has collapsed back to the statewide trend, and in both cases that trend is one of decelerating growth. Although, our attempt to better isolate recent economic trends in the Town of Ashland from those in Hanover County by using data on business-related local revenue collections from the Virginia Auditor of Public Accounts, indicates that the Town of Ashland may have recently diverged from that trend and is experiencing a significant acceleration in business-related economic activity.

Economic and Fiscal Impact

Of the proposed construction alternatives for Alternative Area 5, the ten-mile portion of the DC2RVA High-Speed Rail Project that encompasses the Town of Ashland, there are two general categories that are likely to have a significantly disruptive impact on the Town of Ashland's economy during their construction phase, and potentially beyond. Those two categories are the proposals that add a third above-ground track to the two existing tracks running through the center of Ashland (which are generally assumed to entail a two-year construction period), and constructing the three-track trench

through the center of Ashland (which is generally assumed to entail a three-year construction period). In this section, we estimate the likely economic and fiscal impact associated with those two general construction alternatives.

Disruptive Impact of Construction

The first step in our analysis involved ascertaining what the likely impact of construction would be on economic activity within the Town of Ashland. To accomplish that task, we employed three approaches. The first entailed convening a focus group of interested stakeholders. The second entailed a telephone survey of businesses along the existing rail line on Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road. While the third involved a general review of the published literature on the impact of transportation construction generally, and rail construction specifically, on adjacent businesses.

Focus Group

With the assistance of Town Manager Joshua Farrar and other staff, on Monday, September 18, we convened a focus group of about forty interested stakeholders to obtain input on their perception of the likely impact on their businesses of constructing a third above-ground track or the three-track trench. Some of the key themes that emerged from that conversation were:

1) The construction period for either alternative would be long – two years for the above-ground options and three years for the trench. Many businesses would not survive that long a period of severe economic disruption.
2) The proposed options would negatively impact property values, the ability of current owners to sell or lease their property and could put some property owners "underwater" on their mortgages, where the balance of their mortgage would be higher than the fair market value of their property.
3) The prolonged disruption of economic activity would make it harder for businesses to secure working capital and that would limit future investment and expansion.
4) Businesses along Center Street and Railroad Avenue are inter-dependent and function something like a mall. Customer traffic for one business frequently spills over into customer traffic for other businesses. Restricting the flow of customers across the tracks and between businesses will eliminate those positive spillover effects.
5) Many of the businesses along Center Street and Railroad Avenue are dependent on the Town of Ashland's general small-town ambiance and reputation as a "train town." There were concerns

expressed that the proposed construction options would permanently destroy that character. One speaker specifically mentioned the proposed three-track trench option and stated that because the trains would no longer be visible, "all that would be left of the trains would be the fumes."

6) Concerns regarding the short-run, construction-driven, impact on tourism, and the potential long-run impact on tourism from relocating the existing train station and fundamentally altering the character of the town.

7) The potential negative impact on Randolph-Macon College, the Town of Ashland's primary economic engine.

Business Survey

To obtain more detailed information on the perceptions of affected businesses of the likely impact of constructing a third above-ground track or the three-track trench on their establishments, Town of Ashland staff also conducted an informal telephone survey of 19 businesses along the existing rail line on Center Street and Railroad Avenue. The businesses surveyed included restaurants, other food service establishments, retailers, lodging establishments, and professional services. Out of the 16 responses received:

1) Thirteen respondents indicated that they anticipated having to close or relocate their business.

2) Two respondents indicated that they anticipated a 50 percent loss of business.

3) One respondent indicated that they anticipated a 75 percent loss of business.

Literature Review

We reviewed the available literature on the impact of transportation construction on adjacent businesses. We identified a peer-reviewed analysis on the Los Angeles Metro Rail Red Line and an analysis of the Central Corridor light rail transit project in Minneapolis-St. Paul that was conducted by the Federal Transit Administration and the Minneapolis-St. Paul Metropolitan Council. The peer-reviewed analysis for the Los Angeles Metro Rail Red Line is especially important because its results are based on data verified by Dun & Bradstreet rather than only survey responses.

Los Angeles Metro Rail Red Line[12]

In July 2017, the *Journal of Transport and Land Use* published an analysis of the business-related impacts from construction of the Los Angeles Metro Rail Red Line. This analysis relied on actual establishment data from the National Establishment Time-Series database. The purpose of the analysis was to estimate the impact that construction of the Metro Rail Red Line from downtown Los Angeles to the San Fernando Valley had on the probability of businesses closures. The analysis found that businesses within 400 meters of construction were 46 percent more likely to fail during the construction period than those more than 400 meters away.

Central Corridor

In December of 2012, the Federal Transit Administration and the Minneapolis-St. Paul Metropolitan Council published the "Central Corridor Light Rail Transit Project Supplemental Draft Environmental Impact Statement for Construction-Related Potential Impacts on Business Revenues."[13] The Central Corridor Light Rail Transit Project involved construction of an eleven-mile, two-track, above-ground, light-rail line from downtown Minneapolis to downtown St. Paul. Based on survey data from a subset of 96 affected businesses that applied for loans from a mitigation program, the study found that affected businesses experienced a loss of between 2 percent and 84 percent of revenue during the construction phase of the project, with an average loss of 30 percent across all businesses within the sample.

Appendix D of the Federal Transit Administration report contains a review of several peer-reviewed, government, or academically published studies.[14] The following is a summary of those studies based on the Federal Transit Administration descriptions:

1) "Analyzing the Effects of Highway Rehabilitation on Businesses," De Solminihac and Harrison (1993):
    - Based on a survey of businesses along an 11.6-mile highway reconstruction project along the Southwest Freeway in Houston, Texas.
    - Found that negative impacts from construction were most severely felt by businesses in four retail categories: food stores (37 percent drop in sales), automotive sales (32

[12] Rosalie Ray, "Open for Business? Effects of Los Angeles metro Rail construction on adjacent businesses," *Journal of Transport and Land Use*, vol.10, no.1 (2017) pp.725-742.
[13] "Central Corridor Light Rail Transit Project Supplemental Draft Environmental Impact Statement for Construction-Related Potential Impacts on Business Revenues," Federal Transit Administration and Metropolitan Council, December 2012.
[14] "Appendix D: Literature review for the Central Corridor Supplemental EIS," Federal Transit Administration and Metropolitan Council, December 2012.

percent drop in sales), general merchandise (28 percent drop in sales), and home furnishings (17 percent drop in sales).

- Twelve percent of businesses surveyed reported experiencing a drop in sales of 40 percent or more during construction.

2) "Estimated Construction Period Impact of Widening State Highway 21 in Caldwell, Texas," Wildenthal and Buffington (1996):
   - Based on a survey of businesses along a 2.3-mile highway widening project along the Highway 21 in Caldwell, Texas.
   - Sixty-three percent of respondents reported a decline in sales during construction, and 37 percent reported a decline of 25 percent or more in sales during construction.
3) "Mitigating the Adverse Impacts of the Dallas North Central Expressway Construction on Businesses," Harrison and Waldman (1998):
   - Based on analysis of business-related construction impacts associated with an 18-mile highway reconstruction project on the North Central Expressway and the associated construction of adjacent Dallas Area Rapid Transit light rail line in Dallas, Texas.
   - Found no significant drop in business sales during construction.
   - Found a 10 percent drop in tenant occupancy rates during construction.
4) Highway Construction Impacts on Wyoming Business," Young, Wolfington, and Tomasini (2005):
   - Based on surveys of businesses along twelve highway construction projects in Wyoming.
   - Found that affected businesses generally experienced reduced growth rates rather than negative growth rates during construction.
   - However, found that food-related retail, gas stations, and hotels were particularly susceptible to negative sales impacts during construction.
5) "Development of Improved Procedures for Business Accommodation on Transportation Projects," Ellis and Washburn (2005):
   - Based on surveys of businesses along four highway reconstruction corridors in Florida.
   - Businesses reported issues with customers accessing their location, utility outages, and traffic congestion.
   - Found that fast-food retailers were more likely to report negative impacts on sales than destination businesses such as banks, specialty retailers, and insurance companies.
6) "Report on Mitigation of Transportation Construction Impacts," Minnesota department of Transportation (2009):
   - Based on surveys of businesses along seven transportation construction projects in Minnesota.
   - Sixty-two percent of respondents reported lost sales due to construction.

7) "Assessing Neighborhood and Social Influences of Transit Corridors," Fan and Guthrie (2012):
    - Based on surveys of businesses along two existing and two planned light rail line corridors in Minneapolis-St. Paul.
    - Forty percent of respondents along the Central Corridor Light Rail Transit corridor reported that construction had had and would continue to have somewhat negative or strongly negative impacts on their business.

In Sum

Ashland businesses located immediately along the existing rail line on Center Street and Railroad Avenue – those that would be most heavily impacted by construction of a third above-ground track through downtown Ashland, or the three-tack trench – report very dire expectations of what that construction would do to their businesses. Over 80 percent of respondents to an informal telephone survey indicated that they would likely be forced to close their business as a result of construction and the remaining 20 percent indicated that they expected sales losses of between 50 and 75 percent.

The available empirical literature on the effect of transportation-related construction on adjacent businesses is very limited and available studies exhibit a wide range of findings. However, based on those findings it appears that a minimum expectation of construction-related sales losses would be approximately 30 percent for surviving businesses and that businesses along the affected route would be approximately 46 percent more likely to fail during the construction period than businesses located further away.

There are also reasons to believe that the results from the literature review do indeed represent a minimum expectation and that the economic impact of the proposed above-ground and trench options for constructing a third track through the Town of Ashland could be larger and more lasting than those results indicate. Most of the localities involved in the studies reviewed were large metropolitan areas (*e.g.*, Dallas, Los Angeles, and Minneapolis-St. Paul). In a larger metropolitan area, economic activity can be more easily temporarily displaced as business customers have a larger number of local alternatives and may not need to dramatically alter their geographic purchasing patterns. Similarly, the options for avoiding traffic congestion are more numerous because of the larger number of streets and transit alternatives. In short, a larger metropolitan area provides room for more easily accommodating the economic disruption caused by the construction of transportation projects.

In a small town, however, such options are much more limited and that is likely to be particularly true of a small town that would be effectively cut in half by the proposed construction project. In this regard, anecdotal evidence from the effect of highway construction on the small town of Salado Texas

may be illustrative. According to a news report published in the *Texas Monthly* in December 2015, ongoing construction related to the expansion of I-35 had a major impact on the town, with 82 of the town's 127 businesses closing during the construction period. According to the article,

> *For major cities along I-35, the interstate's expansion means minor, temporary pain and future reward. But for the smaller towns in between, the pain is more acutely felt. When the construction crews come to town, it's a little like hosting an occupying army. Freedom of movement is restricted.*[15]

For these reasons, it is quite possible that the loss of economic activity suffered by affected businesses in the Town of Ashland would be larger, longer lasting, and more broadly dispersed than the available empirical literature would otherwise indicate.

Scenarios

Based on our analysis of the likely impact of construction on economic activity within the Town of Ashland, we have identified three scenarios for the economic and fiscal impact analysis. The first scenario is a baseline analysis and estimates the current economic and fiscal impact of existing businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road. The second scenario is a high-impact scenario that is based largely on input received through the focus group and telephone survey of affected businesses. The third scenario is a low impact scenario that is based largely on the results of our literature review.

[15] Christopher Hooks, "The Road Work Goes on Forever," *Texas Monthly*, December 2015.

Economic Impact

In this portion of the section, we provide estimates of the economic impact associated with the Baseline scenario, and the construction-related economic losses associated with the High Impact and Low Impact scenarios, discussed above.

Method

To assess the likely impact of adding a third above-ground track to the two existing tracks running through the center of Ashland, or constructing the three-track trench through the center of Ashland, we employ a commonly used regional economic impact model called IMPLAN.[16] The IMPLAN model uses regional and national economic data to construct traditional Keynesian multipliers and uses those multipliers to quantify economic impact.

Keynesian multipliers are named after the British economist John Maynard Keynes. They measure the ripple effects that an expenditure has as it makes its way through the economy. For example, as when a restaurant purchases goods and services or pays its workers, thereby generating income for someone else, which is in turn spent, thereby becoming income for yet someone else, and so on, and so on. Through this process, one dollar in expenditures generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total income generated is the Keynesian multiplier.

In the analysis that follows, for each of the identified scenarios we present estimates for three categories of economic impact. First-round direct impact measures the direct economic contribution that businesses make to the local economy (*e.g.*, own employment, wages paid, and goods and services purchased). Second-round indirect and induced impact measures the economic ripple effects of that first round direct impact in terms of business to business, and household (employee) to business, transactions. Total impact is simply the sum of the preceding two. These categories of impact are then further defined in terms of employment (the jobs that are created), labor income (the wages and benefits associated with those jobs), economic output (the total amount of economic activity that is created in the economy), and fiscal impact (the state and local, federal, and total tax revenues that are generated by this economic activity).

[16] IMPLAN is produced by Minnesota IMPLAN Group, Inc.

Baseline Scenario

In conducting our analysis of the current economic impact on the Ashland/Hanover community from businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road, we employ the following assumption:

- Businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road currently generate $15.7 million in annual gross receipts.[17]

By feeding this information into the IMPLAN model, we obtain the estimates of annual economic impact shown in Table 1. As these data indicate, we estimate that businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road currently generate the following annual economic activity within the :

- Total local employment impact of approximately 256 full-time-equivalent jobs.
- Total local labor income impact of approximately $10.1 million.
- Total local output impact of approximately $27.6 million.

Table 1: Estimated Current Annual Economic Impact of existing Businesses along Center Street and Railroad Avenue on the Ashland/Hanover Community

Economic Impact:			
	Employment	**Labor Income**	**Output**
First Round Direct Economic Activity	170	$5,841,009	$15,732,617
Second Round Indirect and Induced Economic Activity	87	$4,245,039	$11,837,884
Total, Direct, Indirect, and Induced Economic Activity*	**256**	**$10,086,048**	**$27,570,501**

**May not sum due to rounding.*

[17] *Data Source*: Town of Ashland.

High Impact Scenario

For the *High Impact Scenario,* we base our estimate of the likely annual loss in economic activity on the Ashland/Hanover community from construction-related closures and sales losses for businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road on the following assumptions:

- Businesses located in the affected areas currently generate $15.7 million in annual gross receipts.[18]
- Due to construction-related business closures and reduced sales, restaurants, other food service, retailers, and lodging establishments would experience a combined 75 percent reduction in gross receipts during the construction period.
- Due to construction-related business closures and reduced sales, professional services establishments would experience a combined 30 percent reduction in gross receipts during the construction period.

By feeding this information into the IMPLAN model, we obtain the estimates of annual negative economic impact shown in Table 2. As these data indicate, we estimate that construction-related business closures and reduced sales among businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road would generate the following annual losses in economic activity within the Ashland/Hanover community under the *High Impact Scenario*:

- Total reduction in local employment of approximately 133 full-time-equivalent jobs.
- Total reduction in local labor income of approximately $4.2 million.
- Total reduction in local output impact of approximately $10.9 million.

[18] *Data Source*: Town of Ashland.

Table 2: Estimated Annual Negative Economic Impact on the Ashland/Hanover Community from Construction-Related Business Closures and Reduced Sales among Existing Businesses along Center Street and Railroad Avenue – High Impact Scenario

Economic Impact:			
	Employment	**Labor Income**	**Output**
First Round Direct Economic Activity	(100)	($2,695,663)	($6,510,984)
Second Round Indirect and Induced Economic Activity	(33)	($1,546,995)	($4,400,614)
Total, Direct, Indirect, and Induced Economic Activity*	**(133)**	**($4,242,658)**	**($10,911,598)**

**May not sum due to rounding.*

It is anticipated that these losses would persist for at least two years under the above-ground third-track construction options, and at least three years under the three-track trench construction option, and then gradually abate over an unspecified period of time.

Low Impact Scenario

For the *Low Impact Scenario,* we base our estimate of the likely annual loss in economic activity on the Ashland/Hanover community from construction-related closures and sales losses for businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road on the following assumptions:

- Businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road currently generate $15.7 million in annual gross receipts.[19]
- Due to construction-related business closures and reduced sales, restaurants, other food service, retailers, lodging, and professional services establishments would experience a combined 30 percent reduction in gross receipts during the construction period.

By feeding this information into the IMPLAN model, we obtain the estimates of annual negative economic impact shown in Table 3. As these data indicate, we estimate that construction-related business closures and reduced sales among businesses located along Center Street and Railroad

[19] *Data Source*: Town of Ashland.

Avenue and between Vaughan Road and Ashcake Road would generate the following annual losses in economic activity within the Ashland/Hanover community under the *Low Impact Scenario*:

- Total reduction in local employment of approximately 77 full-time-equivalent jobs.
- Total reduction in local labor income of approximately $3.0 million.
- Total reduction in local output of approximately $7.9 million.

Table 3: Estimated Annual Negative Economic Impact on the Ashland/Hanover Community from Construction-Related Business Closures and Reduced Sales among Existing Businesses along Center Street and Railroad Avenue – Low Impact Scenario

Economic Impact:			
	Employment	**Labor Income**	**Output**
First Round Direct Economic Activity	(51)	($1,752,302)	($4,341,671)
Second Round Indirect and Induced Economic Activity	(26)	($1,273,512)	($3,551,364)
Total, Direct, Indirect, and Induced Economic Activity*	**(77)**	**($3,025,814)**	**($7,893,035)**

**May not sum due to rounding.*

It is anticipated that these losses would persist for at least two years under the above-ground third-track construction options, and at least three years under the three-track trench construction option, and then gradually abate over an unspecified period of time.

Fiscal Impact

In this portion of the section, we provide estimates of the direct fiscal impact, and the direct construction-related fiscal losses, associated with the Baseline, High Impact, and Low Impact scenarios detailed earlier. It is important to note, however, that these estimates pertain only to the direct fiscal contribution made by existing businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road, and the direct fiscal losses that would be attributable to construction-related business closures and reduced sales among these businesses. These estimates of fiscal impact do not capture the positive or negative consequences associated with the second round indirect and induced economic activity estimated in the *Economic Impact* portion of this section.

Baseline Scenario

As shown in table 4, based on data provided by the Town of Ashland we estimate that businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road currently generate a total $241,572 in tax revenue annually for the Town of Ashland and $281,011 in tax revenue annually for Hanover County.

Table 4: Current Direct Annual Fiscal Impact from Existing Businesses along Center Street and Railroad Avenue

Sector	Annual Gross Receipts[20]	Total Annual Ashland Tax Revenue[21]	Total Annual Hanover County Tax Revenue[22]
Restaurant	$4,160,881	$198,197	$66,334
Retail	$1,743,263	$2,454	$27,935
Lodging	$176,929	$14,862	$11,258
Professional Services	$9,651,544	$9,277	$30,247
Residential		$16,782	$145,237
Total	**$15,732,617**	**$241,572**	**$281,011**

[20] *Data Source*: Town of Ashland
[21] *Data Source*: Town of Ashland. These data include tax revenue from Business License Tax (BPOL), Hotel and Motel Room Tax, Restaurant Meals tax, and Real Estate Tax.
[22] *Data Source*: Town of Ashland and local sales and use tax revenue computations by Mangum Economics. These data include tax revenue from Local Sales and Use Tax and Real Estate Tax.

High Impact Scenario

In conducting our analysis of the likely loss of tax revenue associated with construction-related closures and sales losses among businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road under the *High Impact Scenario*, we employ the following assumptions:

- Due to construction-related business closures and reduced sales, restaurants, other food service, retailers, and lodging establishments would experience a combined 75 percent reduction in gross receipts during the construction period.
- Due to construction-related business closures and reduced sales, professional services establishments would experience a combined 30 percent reduction in gross receipts during the construction period.
- The market value of commercial and residential properties located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road would be reduced by 20 percent due to construction-related activity.

As shown in table 5, based on these assumptions we estimate that the annual construction-related loss of direct tax revenue from businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road associated with the *High Impact Scenario* would be approximately ($172,567) for the Town of Ashland and approximately ($89,648) for Hanover County.

Assuming a two-year period of construction for the proposed above-ground third-track construction options, these figures imply a minimum cumulative tax revenue loss of approximately ($345,134) for the Town of Ashland, and approximately ($179,296) for Hanover County. Assuming a three-year period of construction for the proposed three-track trench, these figures imply a minimum cumulative tax revenue loss of approximately ($517,702) for the Town of Ashland, and approximately ($268,944) for Hanover County. Although, it is important to note that the actual cumulative loss of tax revenue would likely be higher than these estimates due the fact that the construction-related losses in economic activity would likely extend beyond the construction period and gradually abate over an unspecified period of time, and that these estimates do not take into account losses from a reduction in second round indirect and induced economic activity.

Table 5: **Estimated Negative Fiscal Impact from Construction-Related Business Closures and Reduced Sales among Existing Businesses along Center Street and Railroad Avenue – High Impact Scenario**

Sector	Annual Gross Receipts[23]	Total Annual Ashland Tax Revenue[24]	Total Annual Hanover County Tax Revenue[25]
Restaurant	($3,120,661)	($155,666)	($36,152)
Retail	($1,307,447)	($1,162)	($15,175)
Lodging	($132,697)	($9,852)	($3,225)
Professional Services	($2,895,463)	($2,531)	($6,049)
Residential		($3,356)	($29,047)
Total Annual Loss	**($7,456,268)**	**($172,567)**	**($89,648)**
Minimum Cumulative Loss over 2 Year Above-Ground Third-Track Construction	**($14,912,536)**	**($345,134)**	**($179,296)**
Minimum Cumulative Loss over 3 Year Three-Track Trench Construction	**($22,368,804)**	**($517,702)**	**($268,944)**

[23] *Data Source*: Town of Ashland

[24] *Data Source*: Town of Ashland. These data include tax revenue from Business License Tax (BPOL), Hotel and Motel Room Tax, Restaurant Meals tax, and Real Estate Tax.

[25] *Data Source*: Town of Ashland and local sales and use tax revenue computations by Mangum Economics. These data include tax revenue from Local Sales and Use Tax and Real Estate Tax.

Low Impact Scenario

In conducting our analysis of the likely loss of tax revenue associated with construction-related closures and sales losses among businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road under the *Low Impact Scenario*, we employ the following assumptions:

- Due to construction-related business closures and reduced sales, restaurants, other food service, retailers, lodging, and professional services establishments would experience a combined 30 percent reduction in gross receipts during the construction period.
- The market value of commercial and residential properties located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road would be reduced by 10 percent due to construction-related activity.

As shown in table 6, based on these assumptions we estimate that the annual construction-related loss of direct tax revenue from businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road associated with the *Low Impact Scenario* would be approximately ($70,446) for the Town of Ashland and approximately ($40,263) for Hanover County.

Assuming a two-year period of construction for the proposed above-ground third-track construction options, these figures imply a minimum cumulative tax revenue loss of approximately ($140,891) for the Town of Ashland, and approximately ($80,526) for Hanover County. Assuming a three-year period of construction for the proposed three-track trench, these figures imply a minimum cumulative tax revenue loss of approximately ($211,337) for the Town of Ashland, and approximately ($120,790) for Hanover County. Although, it is again important to note that the actual cumulative loss of tax revenue would likely be higher than these estimates due the fact that the construction-related losses in economic activity would likely extend beyond the construction period and gradually abate over an unspecified period of time, and that these estimates do not take into account losses from a reduction in second round indirect and induced economic activity.

Table 6: **Estimated Negative Fiscal Impact from Construction-Related Business Closures and Reduced Sales among Existing Businesses along Center Street and Railroad Avenue – Low Impact Scenario**

Sector	Annual Gross Receipts[26]	Total Annual Ashland Tax Revenue[27]	Total Annual Hanover County Tax Revenue[28]
Restaurant	($1,248,264)	($62,011)	($14,955)
Retail	($522,979)	($489)	($6,280)
Lodging	($53,079)	($3,988)	($1,480)
Professional Services	($2,895,463)	($2,279)	($3,025)
Residential		($1,678)	($14,524)
Total Annual Loss	**($4,719,785)**	**($70,446)**	**($40,263)**
Minimum Cumulative Loss over 2 Year Above-Ground, Third-Track Construction	**($9,439,570)**	**($140,891)**	**($80,526)**
Minimum Cumulative Loss over 3 Year Three-Track Trench Construction	**($14,159,355)**	**($211,337)**	**($120,790)**

[26] *Data Source*: Town of Ashland

[27] *Data Source*: Town of Ashland. These data include tax revenue from Business License Tax (BPOL), Hotel and Motel Room Tax, Restaurant Meals tax, and Real Estate Tax.

[28] *Data Source*: Town of Ashland and local sales and use tax revenue computations by Mangum Economics. These data include tax revenue from Local Sales and Use Tax and Real Estate Tax.

Other Impacts

In this section, we identify potential economic consequences associated with the construction of an above-ground third track or a three-track trench through the center of Ashland, that are important to take into account, although they are difficult to quantify.

Tourism

One of the issues that emerged from our September 18 focus group with stakeholders was a concern about the impact that the proposed construction alternatives would have on tourism. That concern is not without merit. Tourism is a big business in Virginia and in the Ashland/Hanover community. According to data from the Virginia Tourism Corporation, in 2016 tourism generated $26.7 billion in overall expenditures in Virginia, and those expenditures were responsible for supporting 229,259 jobs, $5.6 billion in payroll, and $1.7 billion in state and local tax revenue.[29]

Closer to home, the Virginia Tourism Corporation data also indicate that in 2016 tourism generated $228.2 million in overall expenditures in the Ashland/Hanover community, and those expenditures were responsible for supporting 2,575 jobs, $51.1 million in payroll, and $13.8 million in state and local tax revenue.[30] Moreover, as shown in Figure 11, between 2015 and 2016 the Ashland/Hanover community experienced greater growth in tourism-related impact in expenditures, employment, payroll, state tax revenue, and local tax revenue than the state of Virginia as a whole. Finally, with respect to the Town of Ashland specifically, data provided by Randolph-Macon College indicate that the college attracts over 100,000 visitors to the Ashland/Hanover community each year.[31] While data from the Ashland/Hanover Visitors Center indicate that in 2016 the Center had 18,081 visitors and that the largest proportion of those annual visitors (5,131) came in November, the same month as the annual Ashland Train Day festival.[32]

Given the nature of the proposed construction alternatives and their direct, lengthy, and likely lingering impact on the Ashland/Hanover Community, it is reasonable to expect that they will negatively impact these numbers, even though it is not possible to quantify the precise magnitude of that effect.

[29] "The Economic Impact of Domestic Travel on Virginia Counties 2016," Virginia Tourism Corporation, September 2017.
[30] "The Economic Impact of Domestic Travel on Virginia Counties 2016," Virginia Tourism Corporation, September 2017.
[31] *Data Source*: Randolph-Macon College.
[32] *Data Source*: "2016 Ashland/Hanover Visitors Center Report," Ashland/Hanover Visitors Center.

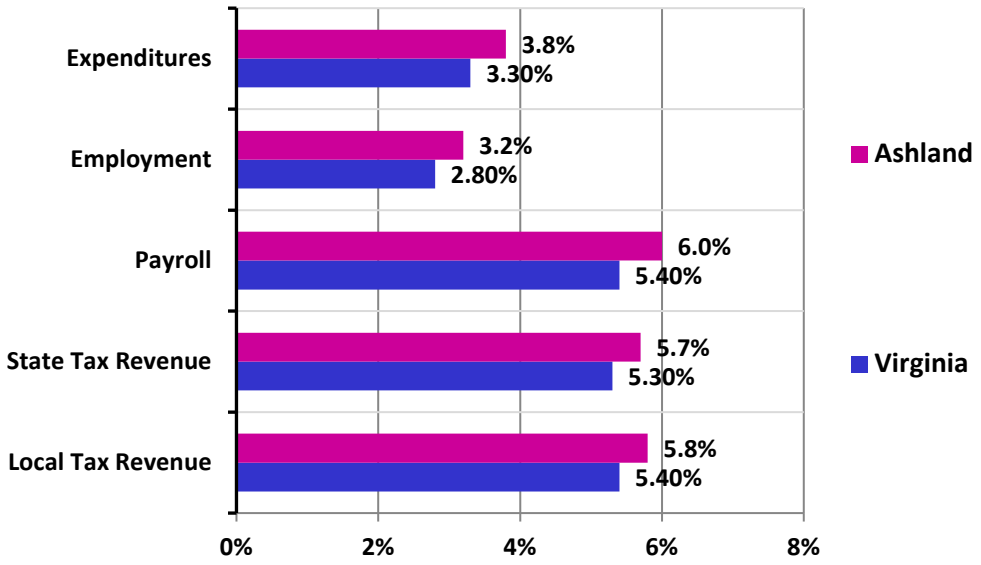

Figure 11: Year-Over-Year Change in Tourism Impact between 2015 and 2016[33]

Randolph-Macon College

Another issue that emerged from our September 18 focus group with stakeholders was a concern about the impact that the proposed construction alternatives would have on Randolph-Macon College. Randolph-Macon College is the primary driver of the Town of Ashland's economy. In the 2014-2015 academic year, Randolph-Macon College had a fall headcount enrollment of 1,394 students, employed 447 faculty and staff, and was directly responsible for contributing $22.7 million in spending to the Ashland/Hanover community.[34] In addition, in recent years the college has undertaken an ambitious capital expansion program that has resulted in $67.5 million in current and ongoing construction on campus. The most recent milestone in that expansion is the new 30,000 square foot science building that had its groundbreaking ceremony in May of 2016.

Because the current railroad right of way cuts right through the middle of Randolph-Macon College's campus, it is certain that either the construction of an above-ground third-track or the three-track trench would significantly disrupt the college's activities, and potentially impact its ability to attract students and continue to grow, expand, and invest. Moreover, that disruption would only further add to the list of significant challenges currently faced by Virginia's private, non-profit, four-year colleges and universities.

[33] "The Economic Impact of Domestic Travel on Virginia Counties 2016," Virginia Tourism Corporation, September 2017.
[34] *Data Source*: State Council of Higher Education for Virginia and Randolph-Macon College.

About three-quarters of Randolph-Macon College's students are Virginia residents. According to recent data from the Weldon Cooper Center, the number of college-age (20-24) individuals in Virginia is projected to decline by 4.3% between 2016 and 2020.[35] That decline will shrink the available pool of potential new students for Randolph-Macon College and other private and public Virginia colleges and universities. Moreover, it will likely place smaller private, non-profit, institutions such as Randolph-Macon College at a disadvantage, as they are forced to compete against larger, and heavily subsidized, public colleges and universities for a declining pool of potential new students.

Figure 12 depicts the year-over-year change in fall headcount enrollment in Virginia's public, four-year colleges and universities; private, non-profit, four-year colleges and universities; and Randolph-Macon College over the ten-year period from 2008 through 2016. As these data indicate, consistent with the demographic trends cited above, enrollment growth in Virginia's private, non-profit, four-year colleges and universities has generally been decelerating since 2009 and drifted into negative territory in 2015 and 2016.

To date, however, Randolph-Macon College has been able to out-perform that general trend. In 2016, Randolph-Macon College posted a 2.0 percent year-over-year increase in fall headcount enrollment, as compared to a 2.2 percent decline in enrollment across all Virginia private, non-profit, four-year colleges and universities, and a 0.6 percent increase in enrollment in the state's public, four-year colleges and universities. However, because of the significant, direct, and proximate impact that the proposed construction alternatives would have on the college, it is likely that they would negatively influence Randolph-Macon College's ability to continue to out-perform those statewide enrollment trends.

[35] "Population Projections by Age and Locality, 2020 to 2040," Weldon Cooper Center for Public Policy, June 2017.

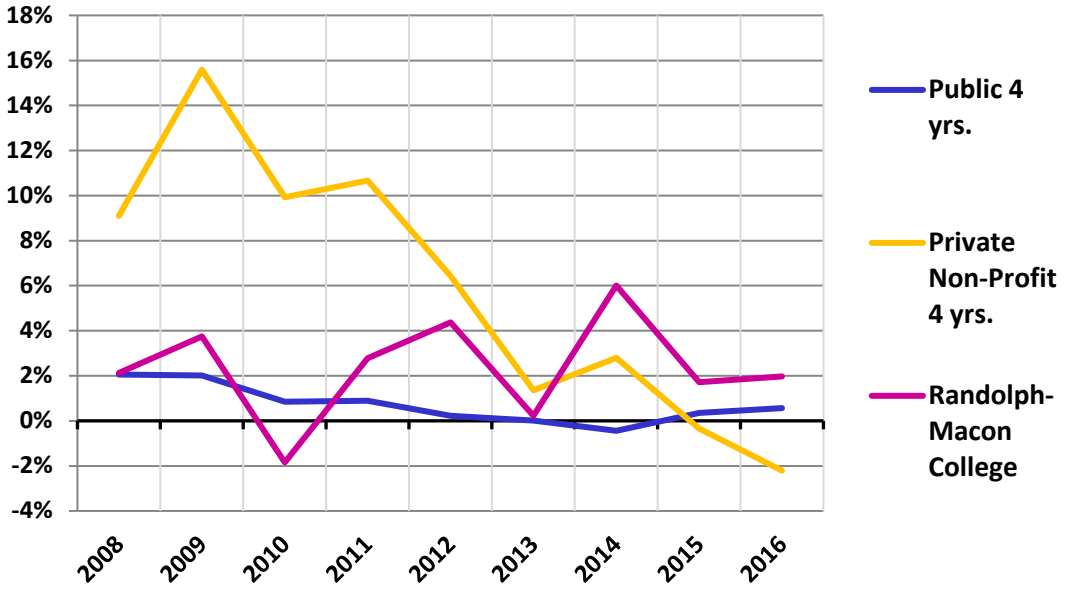

Figure 12: Year-Over-Year Change in Fall Headcount Enrollment[36]

Ashland as a "Train Town"

The last issue that emerged from our September 18 focus group with stakeholders that we address in this section is the impact that the proposed construction alternatives would have on Ashland's image as a "Train Town." As discussed earlier, many of the businesses along Center Street and Railroad Avenue indicated that much of their appeal to customers is linked directly to the Town of Ashland's general small-town ambiance and its reputation as a "train town." Moreover, that perspective is further supported by visitor data from the Ashland/Hanover Visitors Center that confirms that train-related activities such as the annual Ashland Train Day festival are responsible for a significant portion of the Center's visitor traffic. To the extent that the proposed construction alternatives negatively impacted that perceived image, they could have a significant and lasting negative impact on the character and economic vitality of the Town of Ashland that, although difficult to prospectively quantify, is nonetheless likely to be significant.

[36] *Data Source*: State Council of Higher Education for Virginia.

Conclusion

This report has quantified the potential economic and fiscal impact on the Town of Ashland from proposed construction alternatives associated with Alternative Area 5, the ten-mile portion of the 123-mile DC2RVA High-Speed Rail Project that encompasses the Town of Ashland. The purpose of the DC2RVA High-Speed Rail Project is to increase rail capacity along the DC to Richmond corridor in order to provide reliable, frequent, and high-speed passenger service between D.C. and Richmond, and also to better accommodate freight rail movement through the corridor, including freight going to and from Virginia's ports. In addition to proposed improvements to stations, parking, signals, and other safety systems, the primary infrastructure improvement associated with the DC2RVA High-Speed Rail Project would be to add an additional main track to the existing two main tracks within this corridor.

After a lengthy review and public engagement process that began in 2014, in September of this year, the Federal Rail Administration (FRA) and the Virginia Department of Rail and Public Transportation (DRPT) issued their "Tier II Draft Environmental Impact Statement Section 4(f) Evaluation" report. That report proposed five general construction alternatives for the Ashland portion of the DC2RVA High-Speed Rail Project. Those alternatives were: 1) maintain two tracks through Ashland (the 3:2:3 option), 2) add one track east of the existing two tracks running through Ashland, 3) construct three tracks running through Ashland that would be centered within the existing right of way, 4) construct a three-track trench running through Ashland, and 5) add a two-track western bypass. Subsequent to the release of the draft EIS, the Hanover County Board of Supervisors passed a resolution endorsing the 3-2-3 construction alternative, while the Ashland Town Council passed a resolution endorsing the western bypass.

Our analysis focused on the two general categories of these proposed alternatives that are likely to have a significantly disruptive impact on the Town of Ashland's economy during their construction phase – proposals for an above-ground third-track through downtown Ashland (which are generally assumed to entail a two-year construction period), and construction of the three-track trench through downtown Ashland (which is generally assumed to entail a three-year construction period). Based on stakeholder focus group input, the results of an informal telephone survey of businesses along the existing railroad right of way on Center Street and Railroad Avenue, and a review of the existing empirical literature on the impact of transportation construction projects on adjacent businesses, we also constructed a *High Impact* and a *Low Impact* scenario around those proposed alternatives.

What that analysis showed was that, based on the *High Impact* scenario, construction-related business closures and reduced sales among businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road would generate an annual loss of approximately 133 full-

time-equivalent jobs, $4.2 million in local labor income, and $10.9 million in local economic output within the Ashland/Hanover community. These losses would persist for at least two years under the above-ground third-track construction options, and at least three years under the three-track trench construction option, and then gradually abate over an unspecified period of time. In addition, our analysis indicated that the cumulative construction-related direct loss of tax revenue during the two-year construction period for the above-ground third-track construction options would likely be at least ($345,134) for the Town of Ashland, and ($179,296) for Hanover County. While, the cumulative construction-related direct loss of tax revenue during three-year construction period for the proposed three-track trench would likely be at least ($517,702) for the Town of Ashland, and ($268,944) for Hanover County.

Based on the *Low Impact* scenario, construction-related business closures and reduced sales among businesses located along Center Street and Railroad Avenue and between Vaughan Road and Ashcake Road would generate an annual loss of approximately 77 full-time-equivalent jobs, $3.0 million in local labor income, and $7.9 million in local economic output within the Ashland/Hanover community. As before, these losses would persist for at least two years under the above-ground third track construction options, and at least three years under the three-track trench construction option, and then gradually abate over an unspecified period of time. Our analysis also indicated that the cumulative construction-related direct loss of tax revenue during the two-year construction period for the above-ground third-track construction options would likely be at least ($140,891) for the Town of Ashland, and ($80,526) for Hanover County. While, the cumulative construction-related direct loss of tax revenue during three-year construction period for the proposed three-track trench would likely be at least ($211,337) for the Town of Ashland, and ($120,790) for Hanover County.

Finally, our analysis has also demonstrated that the construction of an above-ground third-track or the three-track trench through the center of Ashland would likely have negative impacts that, although difficult to quantify, are nonetheless important to qualify. Chief among those is the potential negative impact that the proposed construction alternatives could have on: 1) the 2,575 jobs, $51.1 million in payroll, and $13.8 million in state and local tax revenue that the Ashland/Hanover community derived from tourism, 2) the 447 faculty and staff jobs and $22.7 million in direct spending that Randolph-Macon College contributes to the Ashland/Hanover community, and 3) the attractiveness to tourists, shoppers, and residents that the Town of Ashland derives from its small-town quality of life and reputation as a “train town.”

Estimates provided in this report are based on the best information available and all reasonable care has been taken in assessing that information. However, because these estimates attempt to foresee circumstances that have not yet occurred, it is not possible to provide any assurance that they will be representative of actual events. These estimates are intended to provide a general indication of likely future outcomes and should not be construed to represent a precise measure of those outcomes.