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# **ECONOMIC BENEFITS OF THE MVP SOUTHGATE PROJECT IN VIRGINIA AND NORTH CAROLINA**

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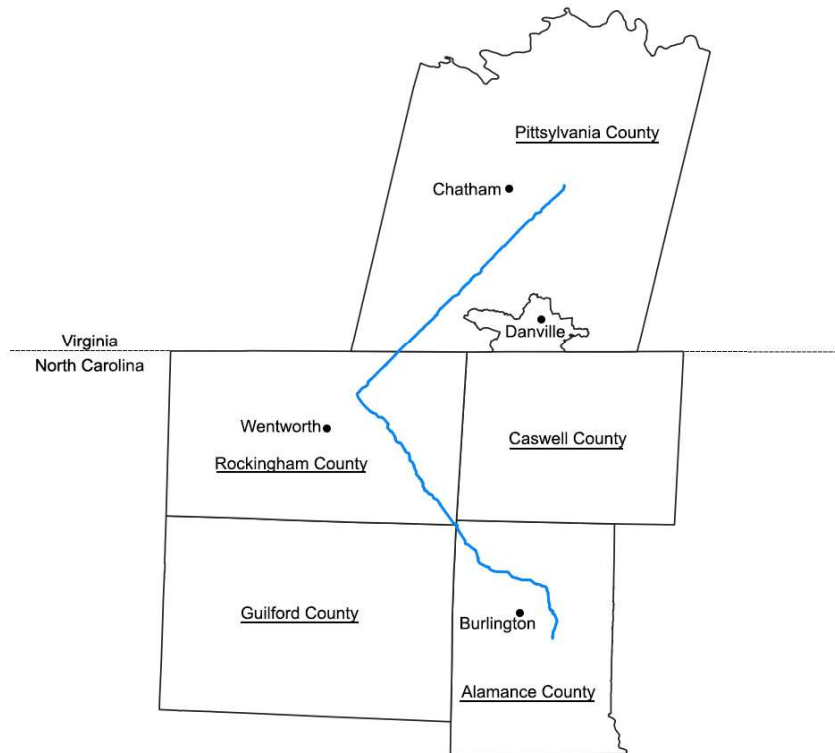
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## Executive Summary

Mountain Valley Pipeline, LLC (“Mountain Valley”) retained FTI Consulting (“FTI”) to examine the potential economic benefits of the MVP Southgate project to the states of Virginia and North Carolina through which the project would traverse. The MVP Southgate project is a natural gas pipeline system that would span approximately 73 miles from southern Virginia into central North Carolina through the counties of Pittsylvania, Rockingham, and Alamance, as shown below in Figure 1.

**Figure 1 - Proposed MVP Southgate Pipeline Route**



Specifically, the MVP Southgate pipeline would interconnect with the Mountain Valley Pipeline in Pittsylvania County, Virginia, pass through the county and by the City of Danville to Rockingham County, North Carolina, where it would interconnect with the PSNC Energy and East Tennessee pipelines, and terminate in Alamance County, North Carolina at an additional interconnect with PSNC Energy. The project would also include a new compressor station in Pittsylvania County, Virginia.

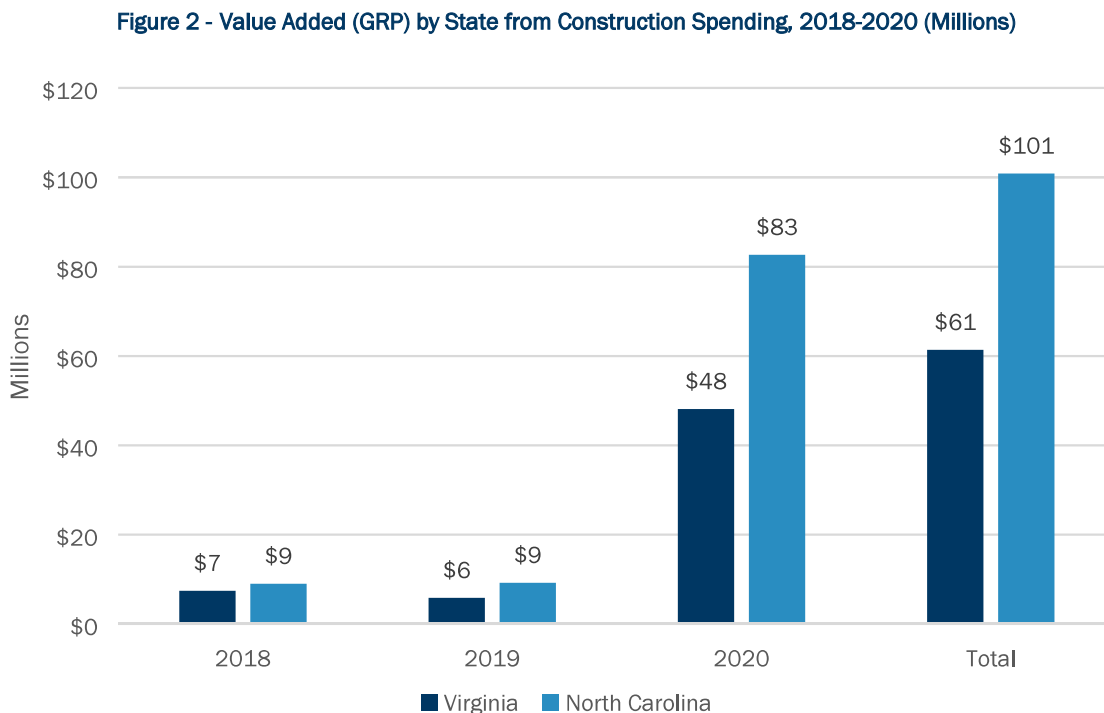
Three types of economic benefits would occur from the construction and operation of the MVP Southgate project. These benefits include:

- **Construction Spending Benefits:** Expenditures on goods and services in each state would translate into job creation along with economic benefits to Virginia and North Carolina suppliers, their employees, and the overall economy.

- **Operational Benefits:** Once in service, the project would generate annual property tax revenues for the counties, providing an additional stream of funds.
- **Direct-Use Benefits:** Each state would benefit from the potential direct use of gas from the MVP Southgate project. The project would enhance gas service already available, help enable new gas service, and expand opportunities for commercial and manufacturing activities.

## Construction Spending Benefits

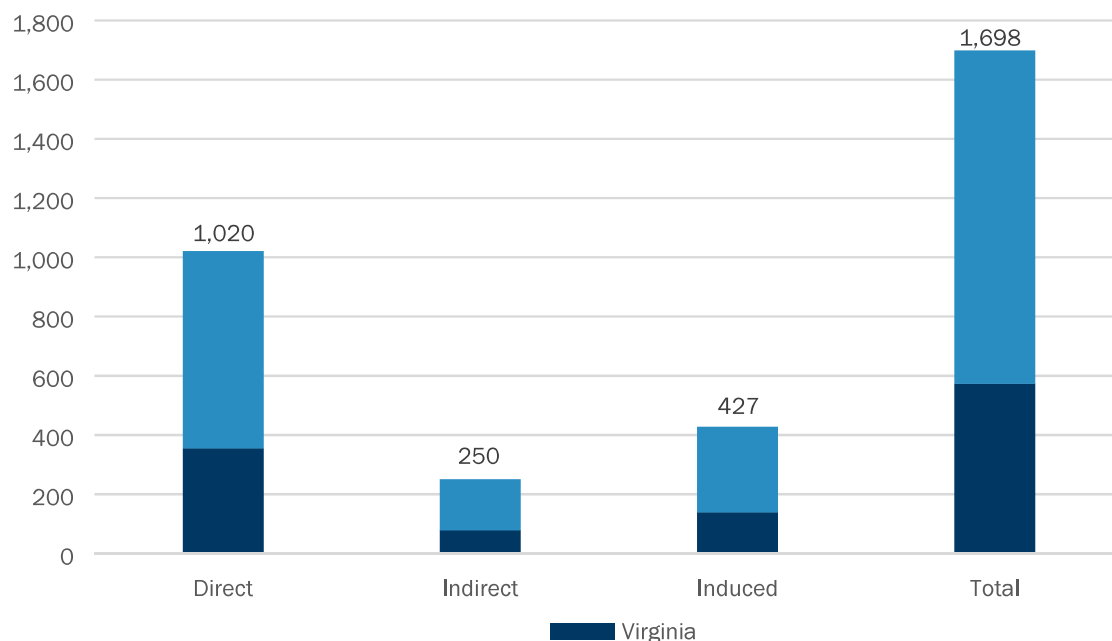
From 2018 to 2020, the MVP Southgate project owners plan to spend a total of almost \$468 million<sup>1</sup> on construction of the pipeline, spending \$68 million and \$113 million of this total directly on resources (equipment, materials, labor, and services) in Virginia and North Carolina, respectively. This direct spending would translate into approximately \$60 million and \$97 million in cumulative gross regional product (“GRP”) over the three-year period in Virginia and North Carolina, respectively, as shown in Figure 2 below.



The MVP Southgate project would create approximately 1,700 jobs at the peak of construction in 2020. Approximately 1,020 of these jobs would be directly associated with the project (labeled “direct” in Figure 3); 250 jobs would be created along the supply-chain (“indirect”); and 430 jobs would be created in the general economy (“induced”).

<sup>1</sup> This figure includes approximately \$4.6 million in ad valorem tax revenue during the first year of operations.

Figure 3 - Employment from Construction in 2020 by Category



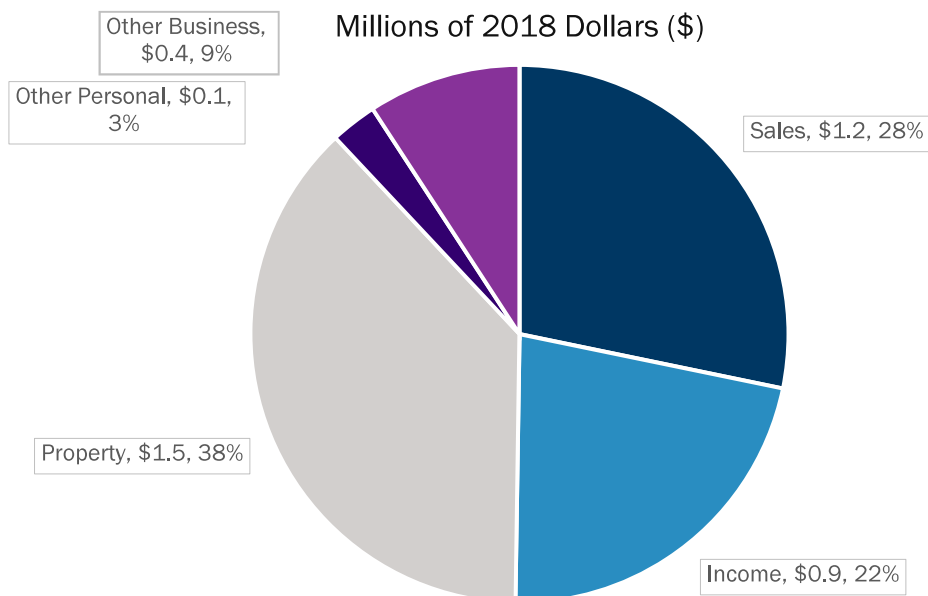
Cumulatively, the MVP Southgate project would create approximately 2,020 job-years over the course of construction.<sup>2</sup>

Another benefit of the MVP project is the increased state and local tax revenues that result from the economic ripple effect of construction expenditures. As shown in Figure 4, the project would generate approximately \$4.1 million in aggregate tax revenues from 2018 to 2020 during construction in Virginia. In addition, as shown in Figure 5, the project would generate approximately \$6.3 million in aggregate tax revenues over this same three-year period during construction in North Carolina.

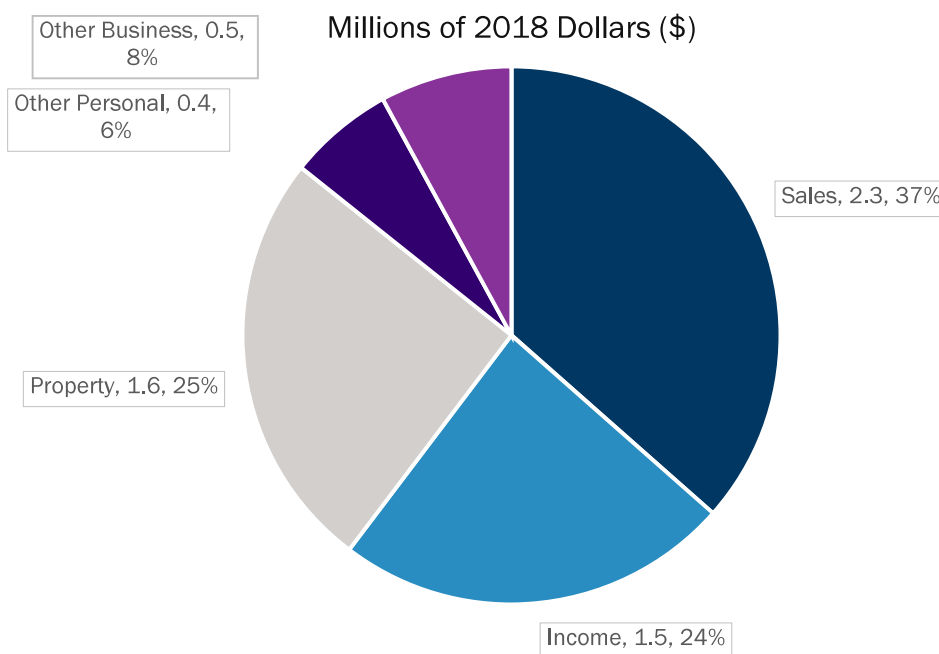
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<sup>2</sup> The MVP Southgate employment contributions are directly tied to the capital spending in each year and are best expressed in 'job-years.' A job-year is the equivalent of one full-time job lasting a single year.

**Figure 4 - Virginia State and Local Tax Revenues Generated during Construction, 2018-2020**



**Figure 5 - North Carolina State and Local Tax Revenues Generated during Construction, 2018-2020**



## Operational Benefits

Once in service, the MVP Southgate project would continue to benefit Virginia and North Carolina's economies along three main areas. The first is in operational employment and spending. Ongoing operation and maintenance of the MVP Southgate pipeline would support 12 jobs across both state economies, with four of these jobs directly supporting the pipeline's operations (two in North Carolina

and two in Virginia) and eight additional jobs across both states' economies (four in North Carolina and four in Virginia). These jobs would provide average annual wages and benefits of approximately \$79,000 and \$71,000 in Virginia and North Carolina, respectively. Notably, the Mountain Valley Pipeline and MVP Southgate pipelines together would support 40 jobs in Virginia.

The second area of economic impact during operations is tax revenue. Based on estimated pipeline investments and county property tax rates, the MVP Southgate project owners estimate that they would pay approximately \$1.2 and \$3.4 million in ad valorem taxes annually in counties in Virginia and North Carolina, respectively. Of the total for North Carolina, Alamance County would receive \$681,000 million in ad valorem tax revenues, Rockingham County would receive over \$1 million, and municipalities in the state of North Carolina would receive the remaining \$1.7 million. In addition, the MVP Southgate project would generate approximately \$269,000 and \$226,000 annually in other federal, state, and local taxes, in Virginia and North Carolina, respectively, during operations.

Finally, in addition to employment, labor income, and tax revenue benefits, the MVP Southgate project would generate almost \$1.6 million annually in GRP, with approximately \$732,000 and \$684,000 in Virginia and North Carolina, respectively.

Direct-use benefits of the pipeline's natural gas represent the third area where each state potentially could benefit from the project and are discussed in further detail below.

## Direct-Use Benefits

In terms of direct gas-use benefits, the MVP Southgate project could provide substantial savings from fuel switching (i.e., switching from propane, fuel oil, diesel, or electricity to natural gas) across Pittsylvania, Danville, Alamance, and Rockingham. For this analysis, we consider the impact of converting county vehicles, such as school buses and solid waste trucks, to natural gas, as well as converting residential households using electricity as their primary heating fuel to natural gas. Table 1 below summarizes our results, which show that fuel savings for switching to natural gas would total approximately \$1.8 million for municipal vehicles and \$8.4 million for household electricity consumption.



**Table 1 - Direct-Use Benefits from Fuel Switching**

<b>County/City</b>	<b>Annual Savings from Fleet Vehicle Fuel Switching</b>	<b>Annual Savings from Home Fuel Switching</b>	<b>Total Savings</b>
Pittsylvania	\$289,000	\$172,000	\$461,000
Danville	\$222,000	\$2,236,000	\$2,458,000
Alamance	\$802,000	\$2,185,000	\$2,987,000
Rockingham	\$478,000	\$3,833,000	\$4,311,000
<b>Total</b>	<b>\$1,791,000</b>	<b>\$8,426,000</b>	<b>\$10,217,000</b>

FTI's interviews with county leaders indicated that natural gas access can play a major role in business decisions to expand operations, particularly energy-intensive and advanced technology manufacturing. These manufacturers can provide significant economic benefits to communities from an employment, wage, and tax revenue perspective. For example, the average annual manufacturing wage in the City of Danville, where manufacturing employs 16 percent of workers, is approximately \$56,680, or 56 percent higher than the average annual wage of \$36,300 for all jobs in the city in 2017.

Altogether, the proposed MVP Southgate project would provide a number of economic and employment benefits to Virginia and North Carolina along the proposed route. During construction, these benefits would result from capital spent directly within Virginia and North Carolina, and the jobs created. Once in service, MVP Southgate would employ people within the state to help operate and maintain the pipeline. Also, counties would collect property taxes from the project. Finally, MVP Southgate would provide sizable opportunities for direct gas use, including additional supply reliability, fuel-switching savings, and new energy-intensive and advanced technology businesses started in both states.

# 1. Introduction

## 1.1. Project Background

The MVP Southgate project is a 24-inch and 16-inch diameter underground natural gas pipeline that would span approximately 73 miles from Pittsylvania County, Virginia, to Alamance County, North Carolina.<sup>3</sup> The pipeline would be regulated by the Federal Energy Regulatory Commission (“FERC”).

The line would interconnect with the Mountain Valley Pipeline in Pittsylvania County, and traverse past the City of Danville into North Carolina. It would then continue through Rockingham County, North Carolina, interconnecting with PSNC Energy and East Tennessee pipelines, and terminate at an interconnect with PSNC Energy in Alamance County, North Carolina. The MVP Southgate project would also include a new compressor station in Pittsylvania County. The project’s developers expect the Mountain Valley Pipeline to provide at least two billion cubic feet per day, or approximately three percent of current U.S. gas demand to markets in the Mid and South Atlantic regions.<sup>4</sup> In addition, PSNC Energy has already committed to 300 million cubic feet per day of firm transportation service on the MVP Southgate pipeline.<sup>5</sup>

Mountain Valley has retained FTI to examine the MVP Southgate project’s potential economic benefits along three areas: (1) economic growth and employment resulting from construction expenditures, (2) operational benefits in terms of jobs created and ad valorem taxes paid by the MVP Southgate project owners, and (3) direct gas-use opportunities that would result within each state.

## 1.2. Approach

### 1.2.1. Construction Economic Impacts and Job Creation Benefits

FTI applied the IMPLAN model to estimate the economic impact and jobs created from construction activities in Virginia and North Carolina. The IMPLAN model is a general input-output modeling software and data system that tracks the movement of money through an economy, looking at linkages between industries along the supply chain, to measure the cumulative effect of spending in terms of job creation, income, production, and taxes. The IMPLAN data sets represent all industries within the regional economy – rather than extrapolating from national averages – and are derived primarily from data collected by federal agencies.<sup>6</sup>

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<sup>3</sup> The MVP Southgate project would be constructed and owned by Mountain Valley Pipeline, LLC, a joint venture in which the primary partners are EQM Midstream Partners and NextEra US Gas Assets, LLC.

<sup>4</sup> <https://www.mountainvalleypipeline.info/overview>

<sup>5</sup> Draft Resource Report No. 1, Summary of Alternatives, and MOU of Mountain Valley Pipeline, LLC, Docket No. PF18-4-000, June 18, 2018.

<sup>6</sup> The 2012 IMPLAN Dataset includes data from the U.S. Bureau of Labor Statistics (“BLS”) Covered Employment and Wages program; U.S. Bureau of Economic Analysis (“BEA”) Regional Economic Information System program; U.S. BEA Benchmark I/O Accounts of the U.S.; BEA Output estimates; BLS Consumer Expenditure Survey; U.S. Census Bureau

The economic impacts that IMPLAN calculates can be broken into direct impacts, indirect impacts, and induced impacts, defined as follows:

- **Direct impacts:** the economic activity resulting from the MVP Southgate project's capital costs spent on industries residing in Virginia and North Carolina. These are the industries that provide the "direct" materials, construction labor, construction management, and technical services (e.g., engineering and design, surveying, and permitting) for the project. This is the first order impact of the MVP Southgate project expenditures within the two states.
- **Indirect impacts:** the economic activity resulting from the "direct" industries spending a portion of their revenues on goods and services provided by their supply chain in Virginia and North Carolina. These supply chain industries represent the second order or 'indirect' impacts of the original MVP Southgate project expenditures in Virginia and North Carolina.
- **Induced impacts:** the economic activity resulting from the spending of the income earned by employees within the "directly" and "indirectly" affected industries. The benefactors of induced impact are primarily consumer-related businesses such as retail stores, restaurants, and personal service industries. These 'induced' impacts represent the third order impact.

Through the direct, indirect, and induced impact calculations, IMPLAN provides the economic ripple effect, or multiplier, that tracks how each dollar of input, or direct spending, cycles through the economy to suppliers and ultimately to households.

The first step of the IMPLAN process was to collect the estimate for state-only spending for each of the major project cost categories. These categories included the following:

- Pipeline Materials
- Compressor materials
- Meters and regulator devices
- Technical services such as engineering design, survey, and permitting
- Construction and commissioning services
- Land and right of way acquisitions

The MVP Southgate project owners anticipate spending \$68 million and \$113 million in Virginia and North Carolina, respectively, of the project's total \$468 million estimated cost.<sup>7</sup>

FTI then assigned these cost categories to one of more than 500 IMPLAN economic sectors as inputs to the model. The model was then run from 2018 to 2020 to provide the following direct, indirect, and induced economic impacts:

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County Business Patterns Program; U.S. Census Bureau Decennial Census and Population Surveys; U.S. Census Bureau Censuses and Surveys; and U.S. Department of Agriculture Census.

<sup>7</sup> This figure includes approximately \$4.6 million in ad valorem tax revenue during the first year of operations.

- **GRP:** an industry's value of production over the cost of its purchasing the goods and services required to make its products. GRP includes wages and benefits paid to wage and salary employees and profits earned by self-employed individuals (labor income), monies collected by industry that are not paid into operations (profits, capital consumption allowance, payments for rent, royalties and interest income), and all payments to government (excise taxes, sales taxes, customs duties) with the exception of payroll and income taxes.
- **Employment Contributions:** direct, indirect, and induced annual average jobs for full-time, part-time, and seasonal employees and self-employed workers.
- **State, Local, and Federal Taxes:** payments to government that represent employer collected and paid social security taxes on wages, excise taxes, sales taxes, customs duties, property taxes, severance taxes, personal income taxes, corporate profits taxes, and other taxes.
- **Labor Income:** the wages and benefits paid to wage and salary employees and profits earned by self-employed individuals. Labor income demonstrates a complete picture of the income paid to the entire labor force within the model.

Section 2 provides the results of the IMPLAN construction and employment benefits analysis.

### 1.2.2. Operational Job Creation and Ad Valorem Tax Benefits

The MVP Southgate project would create jobs within the state to operate and maintain the pipeline and would generate ad valorem tax (property tax) revenues for the counties along the proposed route. To estimate the job benefits of ongoing operations, FTI collected data from the project owners on the annual direct employment (i.e., the number of full-time employees) and the amount of money they anticipate spending annually to support the pipeline's operations in Virginia and North Carolina. We then applied the data within the IMPLAN framework described above to determine the total statewide direct, indirect, and induced employment numbers and average wages.

In addition, Mountain Valley provided FTI with estimates for ad valorem taxes that were based upon the number of miles the MVP Southgate project would traverse in each county, the various county tax rates, and the monetary value of the project. FTI then reviewed the ad valorem tax estimates to verify that it is consistent with the methodology applied in the October 2, 2015 report on the Mountain Valley Pipeline ("2015 Mountain Valley Pipeline Report").<sup>8</sup>

### 1.2.3. Direct-Use Benefits

For this report, we supplemented the direct-use benefit data from the 2015 Mountain Valley Pipeline Report by calculating the amount of natural gas that could be used in municipal vehicles and residential households.

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<sup>8</sup> 2015 Mountain Valley Pipeline Report: <https://www.mountainvalleypipeline.info/en/Location/VA.aspx>

For municipal vehicles, we estimated the number of county vehicles, other school vehicles, and solid waste trucks based on the estimates obtained in the 2015 Mountain Valley Pipeline Report. We were also able to obtain the number of school buses for each county from state data. We then used the same methodology as in the 2015 Mountain Valley Pipeline to estimate the amount of gasoline and diesel consumption these vehicles consume and converted our results to MMSCF to demonstrate how much natural gas these vehicles would consume if converted.

To infer the effect of fuel-switching for households, we used data from the U.S. Census Bureau on the number of households that used various types of fuel for heating in 2016. We also obtained the average annual household site end-use consumption by fuel from the Energy Information Administration (“EIA”) for the South Atlantic census region. Next, we calculated the fuel consumption of households using electricity, propane, and fuel oil/kerosene for space and water heating and then calculated the approximate cost of using these fuels based on EIA prices. We then calculated the equivalent amount of natural gas and associated costs using EIA prices,

## 2. Economic Benefits of the MVP Southgate

### 1.1. Construction Benefits

The MVP Southgate project owners plan to spend a total of \$468 million on goods and services on constructing the pipeline, spending \$68 million and \$113 million of this total in Virginia and North Carolina, respectively. The project owners plan to spend the remaining \$283 million outside Virginia and North Carolina. The combined \$181 million in spending in Virginia and North Carolina would translate into job creation and economic growth for both states, as shown below in Figure 6.

**Figure 6 - Economic Benefits of Construction in Virginia and North Carolina, 2018 - 2020**

<b>Economic Indicator</b>	<b>Virginia</b>	<b>North Carolina</b>	<b>Total</b>
<b>Aggregate GRP</b>	\$60 million	\$97 million	\$157 million
<b>Peak Employment (2020)</b>	570	1,130	1,700
<b>Aggregate Labor Income</b>	\$38.7 million	\$65.6 million	\$104.3 million
<b>Average Labor Income</b>	\$55,800	\$49,300	\$51,600
<b>Aggregate State and Local Tax Revenues</b>	\$4.1 million	\$6.3 million	\$10.4 million

As shown above in Figure 6, the construction of MVP Southgate would generate over \$157 million in additional GRP during the three-year construction period. Figure 7 and Figure 8 below show the composition of MVP Southgate capital expenditures by category for Virginia and North Carolina.

Figure 7 - MVP Southgate Capital Expenditures in Virginia by Major Spending Category

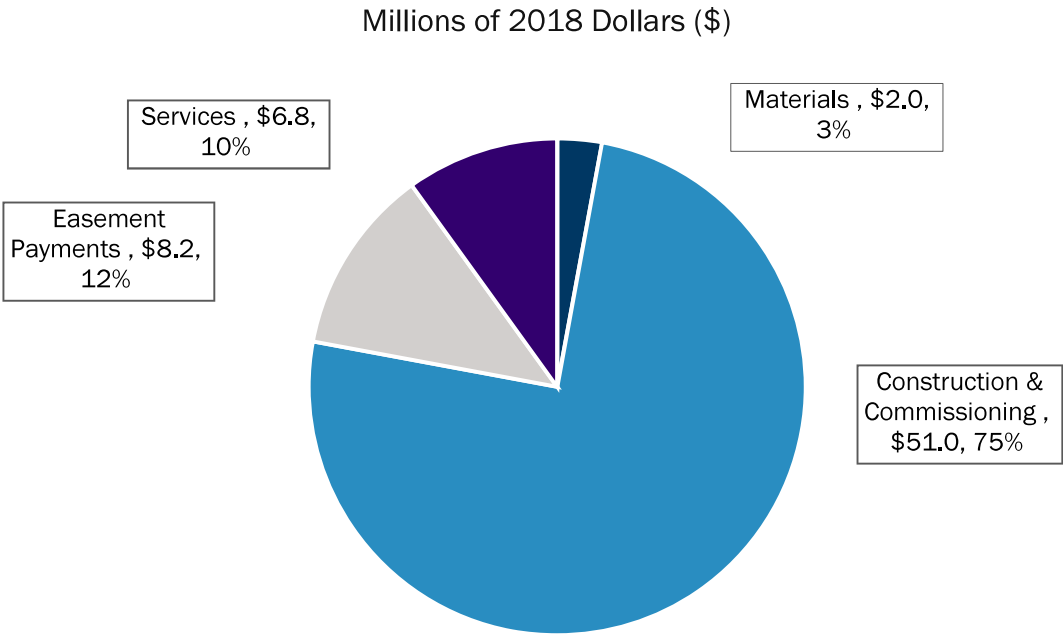
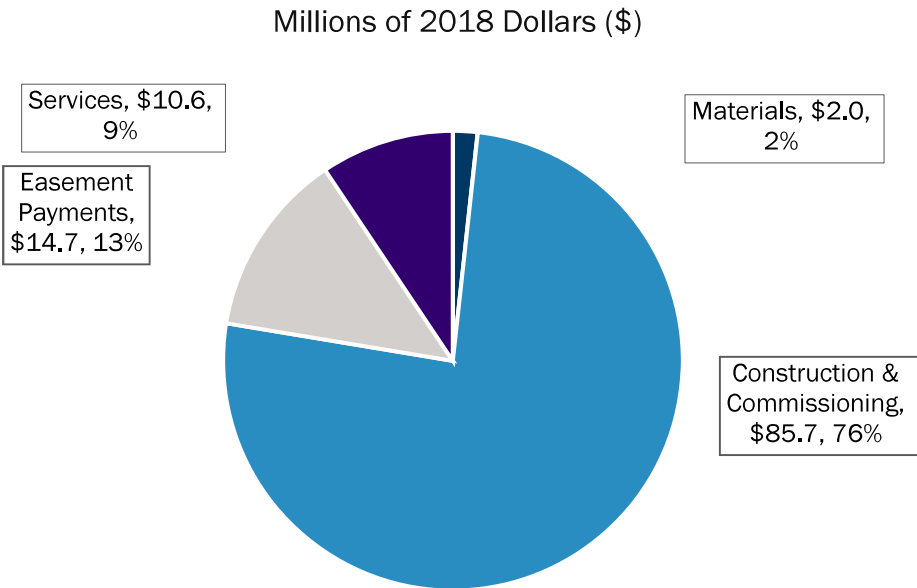


Figure 8 - MVP Southgate Capital Expenditures in North Carolina by Major Spending Category



This spending would also increase GRP by almost \$47 million in Virginia in the peak construction year (i.e., 2020). Over the course of the project construction, the project would generate over \$60 million in cumulative GRP in Virginia, as shown below in Figure 9.

Figure 9 - Impact of Construction Spending on Virginia GRP, 2018 - 2020

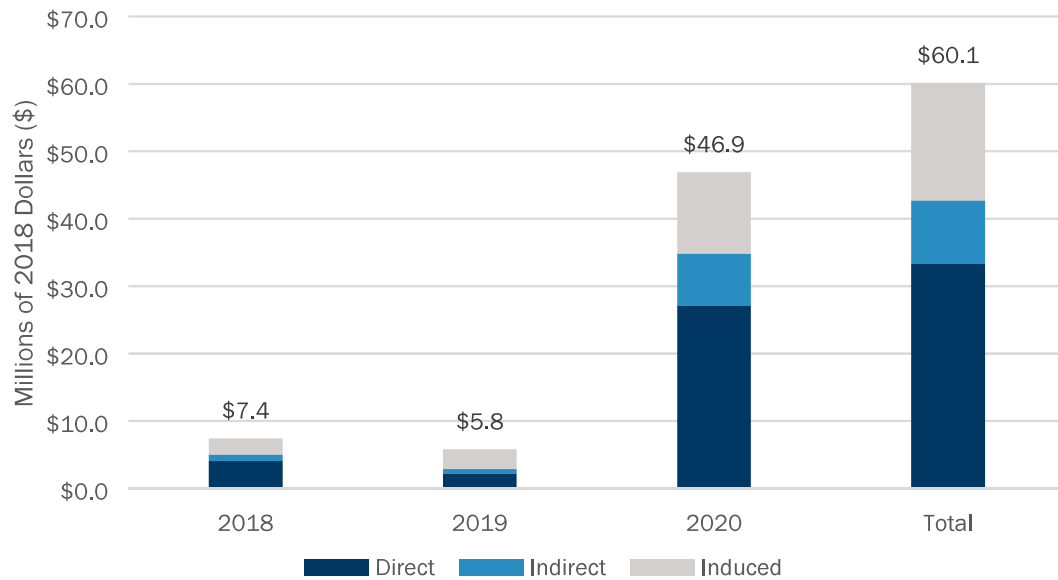
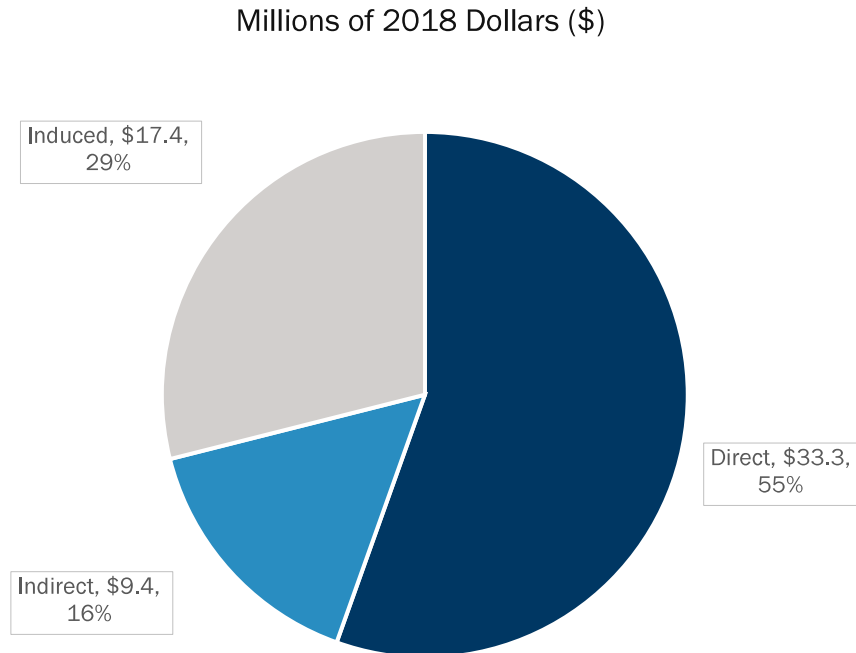


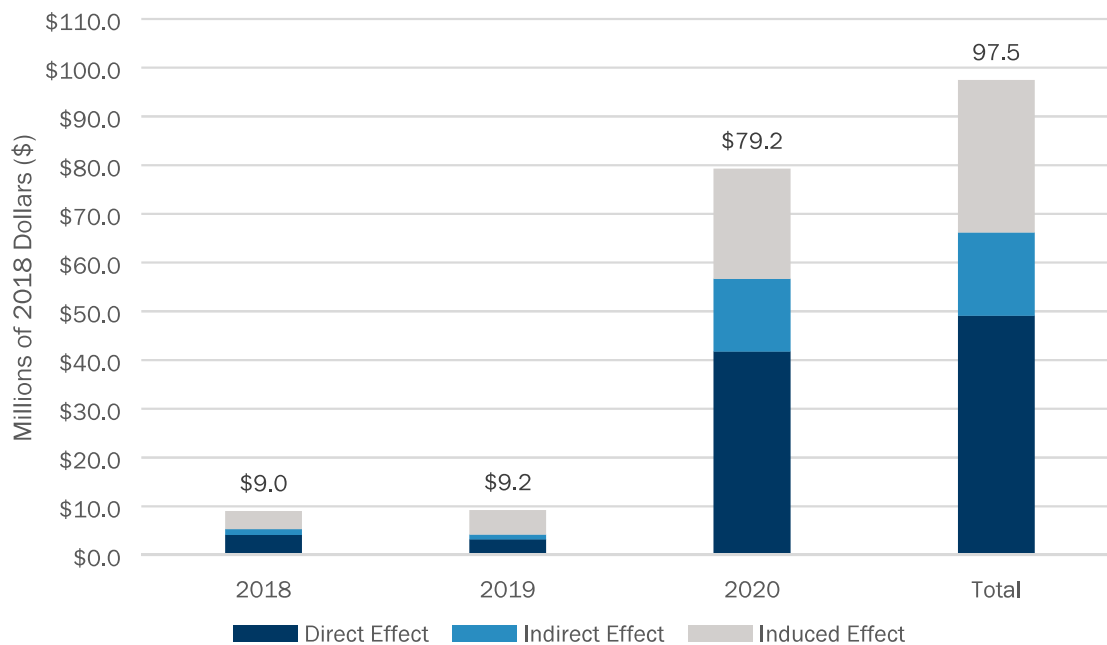
Figure 10 below shows the Virginia GRP added by MVP Southgate segmented into direct, indirect, and induced GRP. As discussed above, “direct” refers to the GRP occurring from the capital expenditures within the industry sectors immediately impacted. “Indirect” represents the GRP impacts from suppliers to the directly impacted industries. “Induced” GRP reflects the local spending of employee’s wages and salaries of directly and indirectly affected industries. Notably, construction of the MVP Southgate project would have the largest direct impact on Virginia’s GRP.

**Figure 10 - Impact of MVP Southgate Construction Spending on Virginia GRP by Category, 2018 – 2020**



Construction spending for the MVP Southgate project would also generate over \$79 million in GRP for North Carolina in 2020 at construction's peak and over \$97 million over the three-year construction period, shown in Figure 11 below.

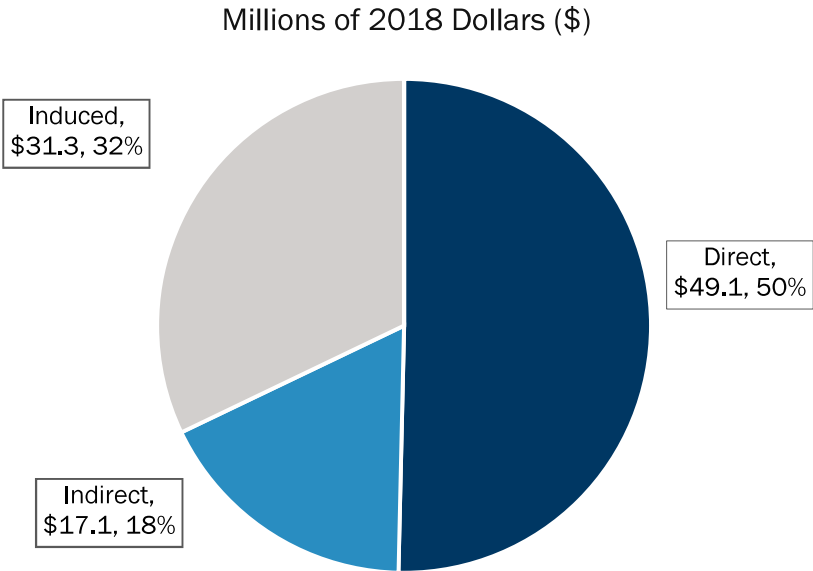
**Figure 11 - Impact of Construction Spending on North Carolina GRP, 2018 - 2020**





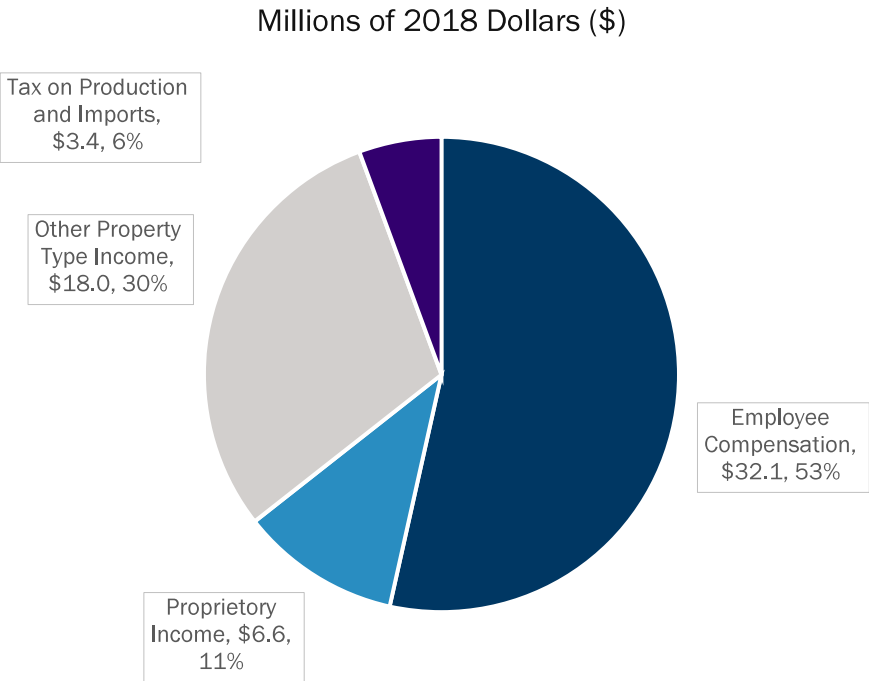
In addition, Figure 12 below shows MVP Southgate’s contributions to GRP by spending category both annually and in aggregate. Similar to spending in Virginia, construction of the MVP Southgate project would have the largest direct impact on North Carolina’s GRP.

Figure 12 - Impact of MVP Southgate Construction Spending on North Carolina's GRP by Category, 2018 – 2020

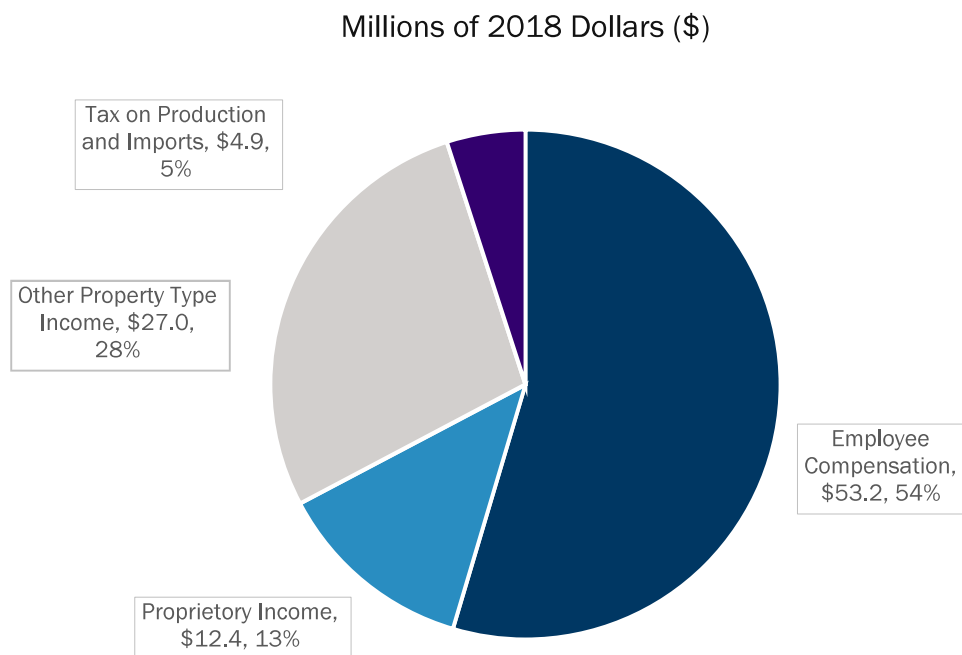


GRP is defined as the summation of employee compensation, proprietors’ income, other property income, and federal, state, and local taxes on production and imports. Figure 13 and Figure 14 show employee compensation would have the largest impact on GRP in both states.

Figure 13 - Composition of MVP Southgate’s Cumulative GRP Contributions in Virginia

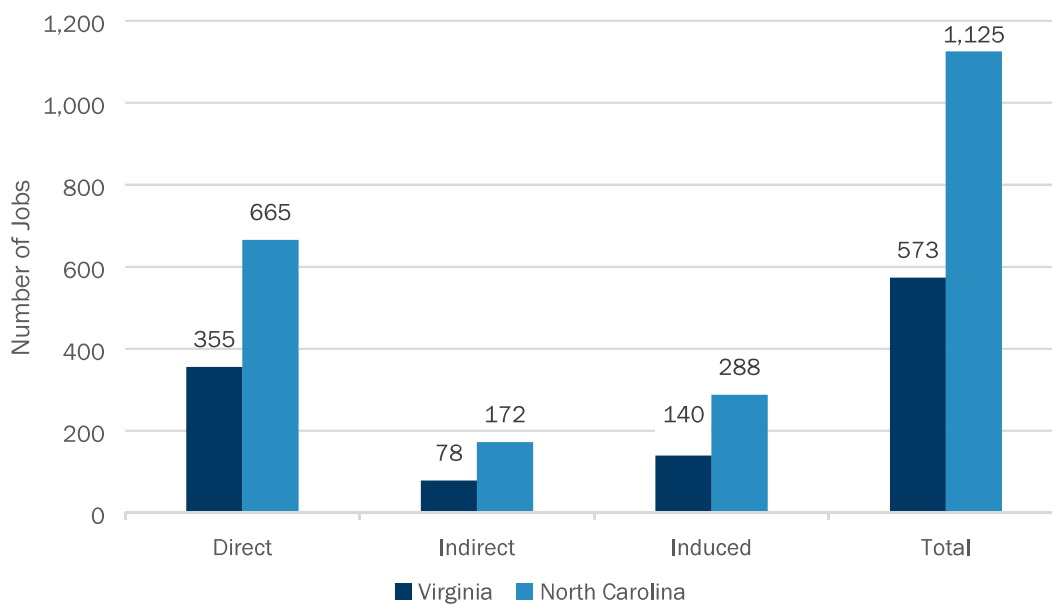


**Figure 14 - Composition of MVP Southgate's Cumulative GRP Contributions in North Carolina**



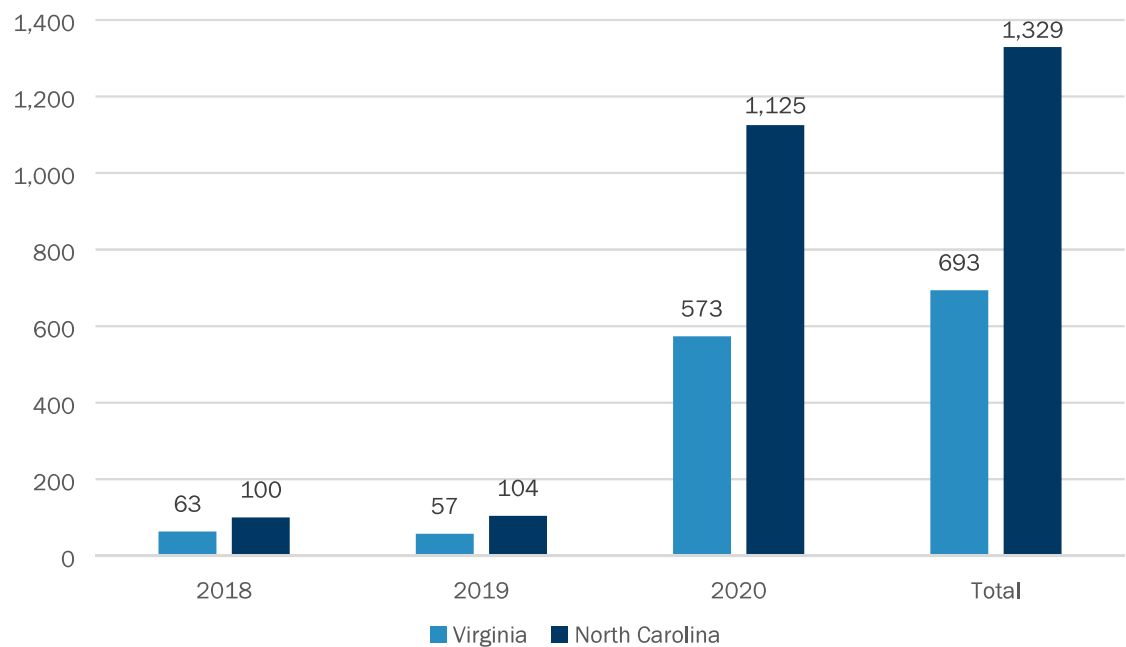
In addition to the GRP benefits, the project would generate approximately 570 and 1,130 jobs in Virginia and North Carolina, respectively, in 2020 at peak construction activity. These jobs include construction jobs, indirect jobs (i.e., jobs created in the state by suppliers to the direct industries impacted), and induced jobs (i.e., jobs created in the state via the spending of construction workers and employees of businesses hired to construct the pipeline). Figure 15 shows the impact of construction on employment in both states in 2020.

**Figure 15 - Impact of MVP Southgate Construction Spending on Employment in 2020 by Category**



Construction of the MVP Southgate project would create about 690 and 1,330 job-years in Virginia and North Carolina, respectively, over the three-year construction period as shown in Figure 16.<sup>9</sup>

Figure 16 - Impact of MVP Southgate Construction Spending on Employment, 2018 - 2020

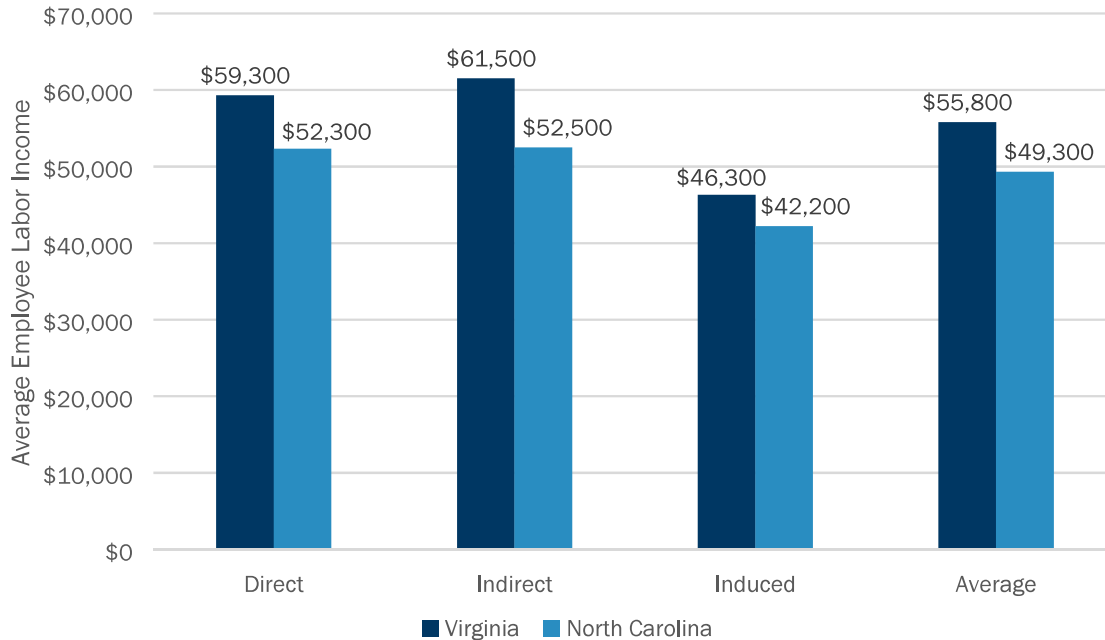


The MVP Southgate employment contribution also would have a positive impact on employee compensation relative to the median income in the state. Figure 17 shows the average employee compensation for direct, indirect, and induced jobs from the MVP Southgate project. Notably, the BLS reports that the average wage for construction occupations was \$44,610 and \$39,940 per year in Virginia and North Carolina, respectively, in 2017.<sup>10</sup>

<sup>9</sup> The MVP Southgate employment contributions are directly tied to capital spending in each year and are best expressed in “job-years.” A job-year is the equivalent of one full-time job lasting a single year.

<sup>10</sup> <https://www.bls.gov/oes/current/oesrcst.htm>

Figure 17 - Average Employee Labor Income by Category



As shown above, workers would earn an average of approximately \$55,800 and \$49,300 in Virginia and North Carolina, respectively, both of which are higher than the average annual wage for residents in counties along the pipeline route.

## 1.2. Operational Benefits

The MVP Southgate project would continue to contribute to employment and generate county property or ad valorem taxes after construction once it becomes operational, employing 12 people across both state economies. Specifically, ongoing operation and maintenance of the pipeline in Virginia would employ six people (two of whom would be employed directly by the pipeline) with average annual wages and benefits of approximately \$79,000. In combination with the Mountain Valley Pipeline, both pipelines would employ a total of 40 people in Virginia. In North Carolina, ongoing operation and maintenance of the MVP Southgate pipeline would also employ six people (two of whom would be employed directly by the pipeline), with average annual wages and benefits of almost \$71,000.

The MVP Southgate project would also continue to contribute to GRP, sales output, and tax revenue for each state while it is operational. Table 2 below summarizes the annual operational benefits of the project in each state.

**Table 2 - Annual Operational Benefits in Virginia and North Carolina**

<b>Category</b>	<b>Virginia</b>	<b>North Carolina</b>	<b>Total</b>
GRP	\$732,000	\$684,000	\$1.4 million
Ad Valorem Taxes	\$1.2 million	\$3.4 million <sup>11</sup>	\$4.6 million
Other State, Local, and Federal Taxes	\$269,000	\$226,000	\$495,000

## 1.3. Direct-Use Benefits

The following section reviews and discusses existing opportunities and savings in each county that could occur as a result of switching to natural gas from gasoline, propane, and diesel for transportation fuels and from electricity, fuel oil, or propane for household heating fuels. These opportunities exist in each of the city/county's end-use energy consumption sectors – residential & commercial, municipal buildings, manufacturing, and transportation (fleet vehicles). The shale gas revolution has enabled these switching opportunities as it has increased the supply of natural gas, lowered its cost, and stabilized prices.

### 1.3.1. Fleet Vehicles

For transportation, we used the same methodology as in the 2015 Mountain Valley Pipeline Report to estimate the number of fleet vehicles located in each county or town as well as their consumption of transportation fuels. Fleet vehicles include municipal solid waste trucks, school buses, other school vehicles, and county vehicles. Table 3 below shows estimates for the number of vehicles, current fuel consumption, and equivalent natural gas consumption.

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<sup>11</sup> Rockingham and Alamance counties will directly receive \$1.7 million of this total whereas municipalities in the state of North Carolina will receive the remaining \$1.7 million.

**Table 3 - Estimated Municipal Fleet Vehicle Annual Energy Consumption**

<b>County/City</b>	<b>Number of Fleet Vehicles</b>	<b>Annual Gasoline/ Diesel Consumption (Gallons)</b>	<b>Equivalent Natural Gas Consumption (MMSCF)</b>	<b>Annual Savings</b>
Pittsylvania	450	684,000	90	\$289,000
Danville	290	441,000	60	\$222,000
Alamance	1,150	1,748,000	230	\$802,000
Rockingham	640	973,000	1,130	\$478,000
<b>Total</b>	<b>2,530</b>	<b>3,846,000</b>	<b>1,510</b>	<b>\$1,791,000</b>

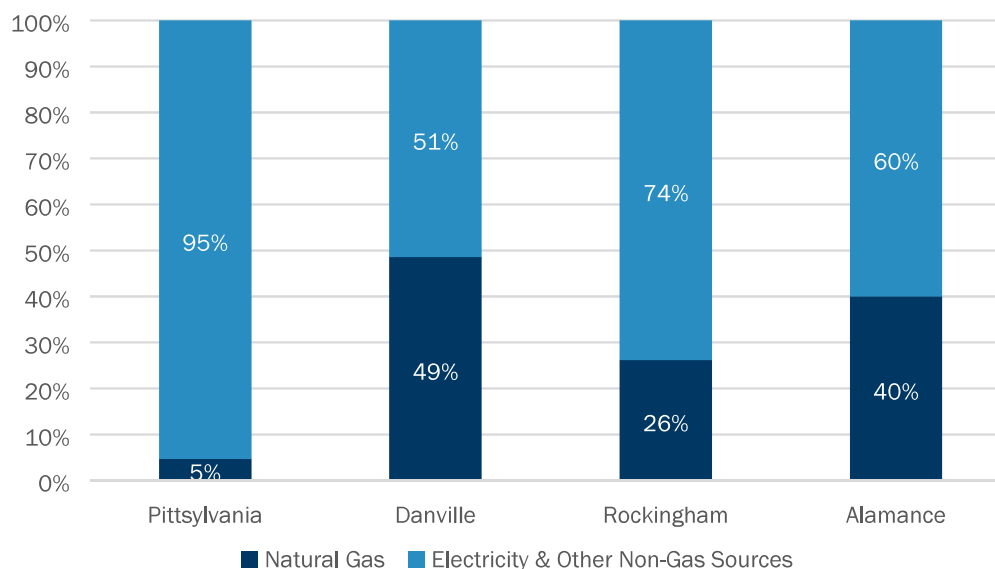
We estimate the natural gas switching potential in Pittsylvania, Alamance, and Rockingham counties and the city of Danville to be 1,510 MMSCF per year if all 2,530 fleet vehicles were switched to natural gas. The annual savings of switching to natural gas vehicles, inclusive fuel costs, compressed natural gas station costs, and vehicle conversion, would equate to approximately \$1.8 million.

### 1.3.2. Residential Space Heating, Water Heating, and Cooking

All four areas considered in this report have varying degrees of natural gas access; however, most households use electricity, propane, and fuel oil for space heating, water heating, and cooking. Figure 18 below highlights the percentage of households in Pittsylvania, Danville, Rockingham, and Alamance that use natural gas versus other fuels for space heating.<sup>12</sup>

<sup>12</sup> <https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2016/>

Figure 18 – Household Heating Fuel by County, 2016



To compute the economic switching potential to natural gas for the four areas, FTI applied the following sets of data:

- Values in Figure 18
- 2018 delivered energy price data from the EIA
- Residential consumption by fuel type from EIA’s Residential Energy Consumption Survey
- Urban populations percentages

Table 4 below shows the economic switching potential by area. We assume that only urban populations would have access to natural gas and thus natural gas distribution upgrades would be nominal. The values in Table 4 also do not include the costs for equipment and ventilation upgrades. For propane and fuel oil, these upgrades, relative to fuel cost savings, would be nominal at the point when existing furnaces reach the end of their useful lives.

**Table 4 – Residential Natural Gas Switching Annual Fuel Cost Savings by Area**

<b>County/City</b>	<b>Natural Gas Switching Annual Fuel Cost Savings</b>
Pittsylvania	\$172,000
Danville	\$2,236,000
Rockingham	\$2,185,000
Alamance	\$3,833,000
<b>Total</b>	<b>\$8,426,000</b>

*Note: Cost savings exclude distribution, equipment, and ventilation upgrades*

Table 4 shows that Pittsylvania County has the lowest economic switching potential. The reason is that Pittsylvania County’s urban residences account for only six percent of the county’s population and that five percent of the county’s households (conservatively assumed to be urban) already use natural gas for space heating, water heating, and cooking. As a result, there is limited technical potential for residential natural gas switching in Pittsylvania. However, Danville, Rockingham, and Alamance households have sizable urban populations that could switch to natural gas and save \$2 million to \$4 million annually.

### 1.3.3. Manufacturing

The manufacturing sector accounts for almost 17 percent of the jobs in Pittsylvania, Danville, Rockingham, and Alamance, and is a sector that could benefit significantly from having more reliable natural gas service. Natural gas is an influencing factor in retaining existing manufacturers and attracting new ones to the county. With annual wages that are, on average, 37 percent higher than the average wages across all sectors in each city/county, the manufacturing sector is crucial to the local economy and would benefit from the MVP Southgate project. Notably, access to natural gas is a major factor when businesses decide to invest in facilities, expand and modernize operations, and locate or relocate plants. Thus, access to natural gas can draw new businesses to areas and ensure current businesses remain committed to the long-term success of their operations within the community.

## 3. Summary

The proposed MVP Southgate project would provide several benefits to the areas in Virginia and North Carolina through which the pipeline would run. The pipeline would benefit existing natural gas customers by helping to ensure future access to a reliable supply of natural gas. These customers



include manufacturing firms, which pay higher wages and make up a substantial portion of these counties' economies.

The shale gas revolution has helped lower natural gas prices, making natural gas an economically attractive alternative to existing fuel sources. FTI estimated the potential demand for switching to natural gas for both municipal vehicles and households using electricity as their primary heat source.

The MVP Southgate pipeline could also help retain or attract manufacturers. Interviews with county representatives, regional partnership leaders, and manufacturers identified that businesses value abundant and reliable gas service. All four areas already maintain a significant manufacturing presence, with the sector employing 17 percent of workers on average, and have plans to continue expanding with the development of additional industrial parks.

These types of investments can provide large economic benefits to communities from an employment, wage, and tax revenue perspective. Input-output modeling software such as IMPLAN can help to estimate the magnitude of these impacts. In addition to the initial economic impact of the investment, businesses along the supply chain benefit through ripple, or multiplier, effects, as do households in the form of higher wages and disposable income.

# Appendix I: County Economic and Energy Profiles

## Pittsylvania County, Virginia

### Economic Profile

Pittsylvania County, Virginia, is a 978-square mile county located in the Piedmont region of Virginia with a 2017 population of 63,506.<sup>13</sup> In 2016, Pittsylvania's GDP was \$3.24 billion<sup>14</sup> and its median household income was median household income of \$43,087.<sup>15</sup> The largest towns in Pittsylvania are Chatham, Gretna, and Hurt. Pittsylvania County's 2017 unemployment rate was 4.5 percent, higher than the unemployment rates of both Virginia and the United States of 3.8 percent and 4.3 percent, respectively.<sup>16</sup>

12,357 people work in Pittsylvania County, approximately 24 percent of which work for the federal, state, or local government. The next largest sectors are manufacturing, health care and social assistance, and construction, which employ approximately 15 percent, 11 percent, and nine percent, respectively, of Pittsylvania workers.<sup>17</sup> In addition, the average annual wage in Pittsylvania County is \$35,776, almost 39 percent less than the average annual state wage of \$58,292 in Virginia.<sup>18</sup> Table 5 below shows employment and average wage by industry for Pittsylvania County.<sup>19</sup>

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<sup>13</sup> U.S. Census QuickFacts: Pittsylvania County, Virginia, <https://www.census.gov/quickfacts/fact/table/danvillecityvirginia,pittsylvaniacountyvirginia/PST045217>

<sup>14</sup> National Association of Counties. <http://explorer.naco.org/>

<sup>15</sup> U.S. Census QuickFacts: Pittsylvania County, Virginia, <https://www.census.gov/quickfacts/fact/table/danvillecityvirginia,pittsylvaniacountyvirginia/PST045217>

<sup>16</sup> [http://virginialmi.com/report\\_center/community\\_profiles/5104000143.pdf](http://virginialmi.com/report_center/community_profiles/5104000143.pdf); <https://data.bls.gov/timeseries/LNS14000000>

<sup>17</sup> [http://virginialmi.com/report\\_center/community\\_profiles/5104000143.pdf](http://virginialmi.com/report_center/community_profiles/5104000143.pdf)

<sup>18</sup> [http://virginialmi.com/report\\_center/community\\_profiles/5101000000.pdf](http://virginialmi.com/report_center/community_profiles/5101000000.pdf)

<sup>19</sup> [http://virginialmi.com/report\\_center/community\\_profiles/5104000143.pdf](http://virginialmi.com/report_center/community_profiles/5104000143.pdf)

Table 5 - Employment and Wages in Pittsylvania County by Industry

Industry	Employment	Percent of Total Employment	Average Annual County Wage	Percent Higher/Lower than County Wage
Government (Total)	2,919	23.6%	\$38,948	8.9%
Government (Local)	2,359	19.1%	\$30,992	-13.4%
Manufacturing	1,815	14.7%	\$52,988	48.1%
Health Care and Social Assistance	1,358	11.0%	\$24,752	-30.8%
Construction	1,102	8.9%	\$43,940	22.8%
All Industries	11,824		\$35,776	

As shown above in Table 5, manufacturing is one of the highest paying industries in Pittsylvania County, paying approximately 48 percent more than the average county wage. Manufacturing is also one of the largest employers in the county; DTI, Intertape Polymer Group, Swedwood Danville, Times Fiber Communications, and Unique Industries, described below, are Pittsylvania's largest manufacturing employers.<sup>20</sup>

- **Intertape Polymer Group ("IPG"):** IPG develops and manufactures paper and film-based sensitive and water-active tapes, polyethylene and specialized polyolefin films, and complementary packaging systems for diverse industrial and retail uses. IPG also produces woven coated fabrics. IPG currently employs 280 people in Pittsylvania and is the fifth largest employer in the county.<sup>21</sup> IPG recently announced that it is expanding its manufacturing operations by investing \$7 million in the county and hiring an additional 15 employees.<sup>22</sup>
- **Owens-Illinois Inc. ("O-I"):** O-I is a global producer of glass containers, primarily for beverages, and maintains a manufacturing center in Ringgold. O-I is the eleventh largest employer in Pittsylvania County with up to 300 employees.<sup>23</sup>
- **Swedwood Danville:** Swedwood Danville is a subsidiary of the Swedish furniture company, IKEA. Also located in Ringgold, Swedwood Danville employs approximately 400 people at its

<sup>20</sup> [http://virginalmi.com/report\\_center/community\\_profiles/5104000143.pdf](http://virginalmi.com/report_center/community_profiles/5104000143.pdf)

<sup>21</sup> <http://www.dpchamber.org/employment>

<sup>22</sup> <https://www.gosouthernvirginia.com/about-svra/news/intertape-polymer-group-bringing-15-new-jobs-to-pittsylvania-county>

<sup>23</sup> <https://www.gosouthernvirginia.com/workforce/major-employers>

930,000-square foot facility at the Cane Creek Centre and is the third largest employer in the county.<sup>24</sup>

- **Times Fiber Communication:** Times Fiber Communication is a global manufacturer of high quality cables, fiber optic management equipment, and interconnect products for cable television, satellite, data, and powering applications for broadband communications networks. With operations located in Chatham employing up to 300 people, Times Fiber Communication is the twelfth largest employer in Pittsylvania.<sup>25</sup>
- **Unique Industries:** A wholesale manufacturer and supplier of party goods with manufacturing operations located in Blairs, Unique Industries employs 325 people and is Pittsylvania's second largest employer behind the county school board.<sup>26</sup>

Pittsylvania County has shown its commitment to new manufacturing by breaking ground on the new, 3,700-acre Berry Hill Industrial Park, located in Pittsylvania County near the Virginia-North Carolina border. The park, which will cost \$29.8 million to construct, is the largest industrial park in Virginia and the fifth largest on the East Coast.<sup>27</sup> While still under development, the park, shown in Figure 19 below,<sup>28</sup> will be located close to both the Norfolk Southern Railroad and interstate highways 58 and 40.<sup>29</sup>

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<sup>24</sup> <http://www.dpchamber.org/employment>

<sup>25</sup> <https://www.gosouthernvirginia.com/workforce/major-employers>

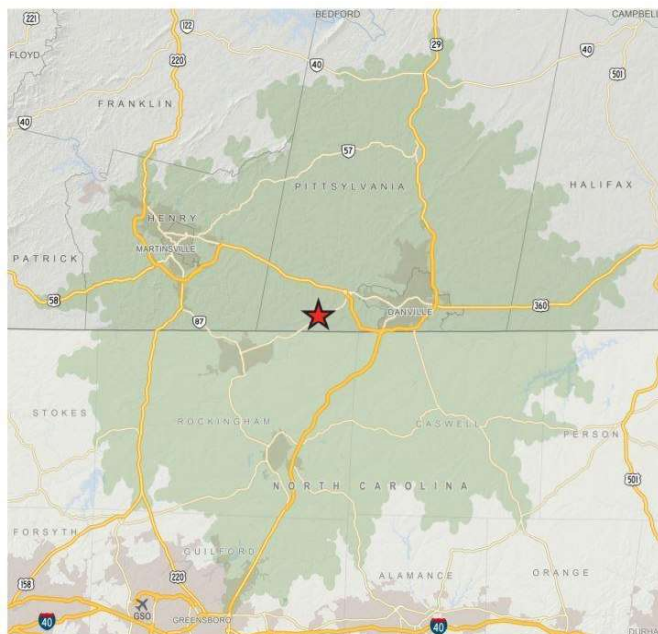
<sup>26</sup> <http://www.dpchamber.org/employment>

<sup>27</sup> [https://www.greensboro.com/rockingham\\_now/business/berry-hill-industrial-park-breaks-ground/article\\_24faef7c-126f-11e7-8aad-37409504e5ee.html](https://www.greensboro.com/rockingham_now/business/berry-hill-industrial-park-breaks-ground/article_24faef7c-126f-11e7-8aad-37409504e5ee.html)

<sup>28</sup> <https://maps.vedp.org/LaborMaps/242790.pdf>

<sup>29</sup> <http://www.gosouthernvirginia.com/sites-buildings/sites-buildings>

Figure 19 – Map of Berry Hill Industrial Park



The park's developers anticipate it to maintain water and sewer capacities of 12 million gallons/day and four million gallons/day, respectively.<sup>30</sup> Appalachian Power, owned by American Electric Power, provides electrical service to the Berry Hill Industrial Park.<sup>31</sup> In addition, the Transco pipeline, which serves the City of Danville, passes directly past the park and will run parallel to the MVP Southgate project, offering another source of natural gas supply for industrial and residential customers.

Pittsylvania County maintains several industrial parks, including the 900-acre Cane Creek Centre,<sup>32</sup> and has plans to develop additional facilities. These plans include a new 800-acre industrial park in Hurt that will be a joint development project between Pittsylvania County, the Town of Hurt, the Town of Altavista, the City of Danville, and Southern Virginia Multimodal Park, LLC.<sup>33</sup>

## Energy Profile

As mentioned above, the Transco pipeline passes directly through Pittsylvania; however, as shown in Figure 20 below, only five percent of households use natural gas provided by local utilities Columbia Gas and Southwestern Virginia Gas as their primary fuel for household heating.<sup>34</sup> Both Dominion Power and Appalachian Power provide electric service to Pittsylvania.<sup>35</sup>

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<sup>30</sup> <https://bloximages.newyork1.vip.townnews.com/godanriver.com/content/tncms/assets/v3/editorial/3/d2/3d25cccc-1024-11e7-9800-6b457e241a5f/58d46084d9e16.image.jpg>

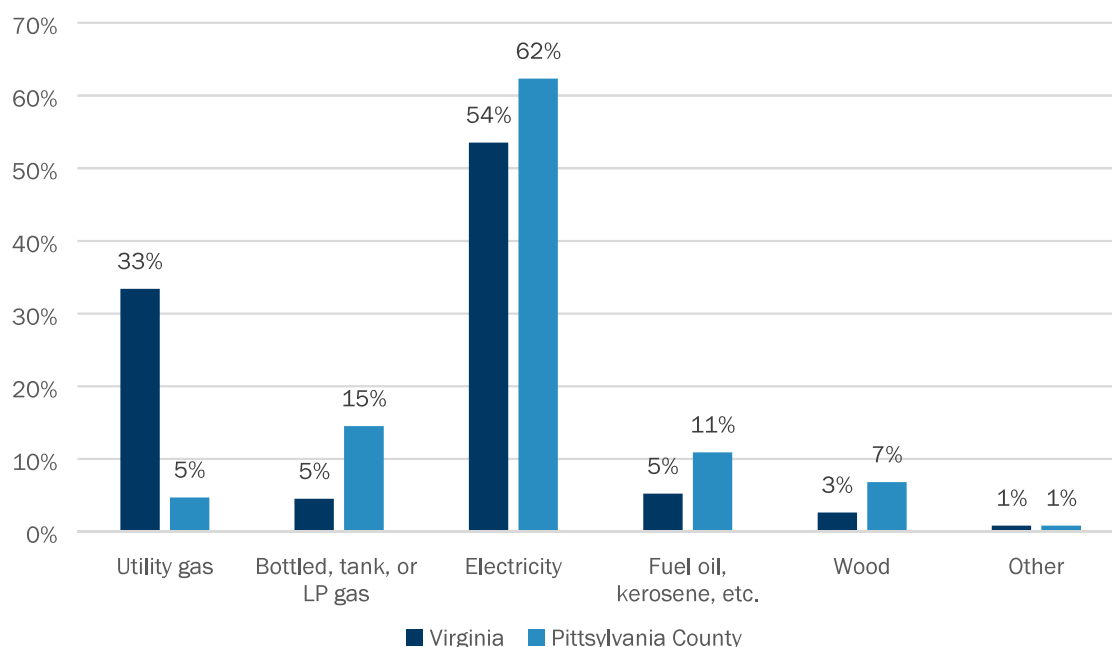
<sup>31</sup> <https://virginiascan.yesvirginia.org/GetBinary?id=184992>

<sup>32</sup> <http://www.discoverdanville.com/index.aspx?NID=252>

<sup>33</sup> <https://townofhurtva.gov/economic-development/>; <https://d2oc0ihd6a5bt.cloudfront.net/wp-content/uploads/sites/1667/2016/06/SVMP2.pdf>

<sup>34</sup> American FactFinder, U.S. Census, <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>

Figure 20 – Primary Household Heating Fuel in Virginia and Pittsylvania County, 2016



In contrast to the state of Virginia and the other areas described further below, many more households in Pittsylvania use fuel sources other than electricity and natural gas, such as propane, petroleum, and wood. In addition, some counties near Pittsylvania, such as Franklin, Floyd, and Patrick counties, do not have natural gas access, and could also benefit from enhanced natural gas capacity provided by MVP Southgate.<sup>36</sup>

Natural gas is also important to retaining existing manufacturers and attracting new manufacturers to the county. Our interviews and analysis identified that manufacturers value abundant and reliable gas service and that access to natural gas is a primary criterion for determining where to locate new manufacturing facilities. Thus, enhanced natural gas access via the MVP Southgate project could provide an additional incentive for companies considering opening or relocating manufacturing operations to the city.

## Danville, Virginia

### Economic Profile

Danville, Virginia, is an approximately 45-square mile independent city located next to Pittsylvania County in the Piedmont region of Virginia. Danville maintained a population of 41,130 in 2017 and a 2016 median household income of \$33,721.<sup>37</sup> Danville's 2017 unemployment rate was six percent,

<sup>35</sup> [https://www.scc.virginia.gov/pur/elec/el\\_map.pdf](https://www.scc.virginia.gov/pur/elec/el_map.pdf)

<sup>36</sup> [https://www.scc.virginia.gov/pur/gas/gas\\_map.pdf](https://www.scc.virginia.gov/pur/gas/gas_map.pdf)

<sup>37</sup> <https://www.census.gov/quickfacts/fact/table/danvillecityvirginia,pittsylvaniacountyvirginia/PST045217>

higher than the unemployment rates of both Virginia and the United States of 3.8 percent and 4.3 percent, respectively.<sup>38</sup>

27,062 people work in the city of Danville, approximately 19 percent of which work in the health care and social assistance industry. The next largest sectors are manufacturing, retail, and government, which employ approximately 16 percent, 16 percent, and 14 percent, respectively, of Danville workers.<sup>39</sup> In addition, the average annual wage in Danville is \$36,296, almost 38 percent less than the average annual state wage of \$58,292 in Virginia.<sup>40</sup> Table 6 below shows employment and average wage by industry for Danville.<sup>41</sup>

**Table 6 - Employment and Average Wages in Danville by Industry, 2016**

<b>Industry</b>	<b>Employment</b>	<b>Percent of Total Employment</b>	<b>Average Annual County Wage</b>	<b>Percent Higher/Lower than County Wage</b>
Health Care and Social Assistance	5,061	18.7%	\$40,924	12.8%
Manufacturing	4,355	16.1%	\$56,680	56.2%
Retail	4,264	15.8%	\$25,272	-30.4%
Government (total)	3,673	13.6%	\$45,084	24.2%
All Industries	27,062		\$36,296	

As shown above in Table 6, manufacturing is one of the highest paying industries in Danville, paying approximately 56 percent more than the average county wage. Manufacturing is also one of the largest employers in the county; EBI, Essel Propack, Goodyear Tire & Rubber, Nestle, and Unlin, described below, are among Danville's largest manufacturing employers.

- **EBI:** EBI is a Polish company that manufactures and distributes upholstered furniture and mattresses for Com.40, Ltd. IKEA is one of EBI's main buyers.<sup>42</sup> The eighth largest employer in Danville, EBI's manufacturing center in the city employs approximately 270 people.<sup>43</sup>
- **Essel Propack:** Essel Propack is a global specialty packaging manufacturer of laminated plastic tubes primarily used for fast-moving consumer goods and pharmaceuticals. Essel

<sup>38</sup> [http://virginialmi.com/report\\_center/community\\_profiles/5104000590.pdf](http://virginialmi.com/report_center/community_profiles/5104000590.pdf);  
<https://data.bls.gov/timeseries/LNS14000000>

<sup>39</sup> [http://virginialmi.com/report\\_center/community\\_profiles/5104000143.pdf](http://virginialmi.com/report_center/community_profiles/5104000143.pdf)

<sup>40</sup> [http://virginialmi.com/report\\_center/community\\_profiles/5101000000.pdf](http://virginialmi.com/report_center/community_profiles/5101000000.pdf)

<sup>41</sup> [http://virginialmi.com/report\\_center/community\\_profiles/5104000143.pdf](http://virginialmi.com/report_center/community_profiles/5104000143.pdf)

<sup>42</sup> <https://www.tradeandindustrydev.com/industry/manufacturing/com40-ltd-danville-virginia-2370>

<sup>43</sup> <http://www.dpchamber.org/employment>



Propack is one of the top 20 largest employers in Danville and employs over 230 people at its Airside Industrial Park location, which it expanded in 2011 by adding 105,000 square feet.<sup>44</sup>

- **Goodyear Tire & Rubber:** Goodyear is one of the largest tire manufacturers in the world and has expanded its business to include commercial truck service, tire retreading centers, and auto service outlets. Goodyear is also the largest employer in Danville with over 2,300 employees.<sup>45</sup>
- **Nestle:** Nestle is a Swiss company and one of the largest food companies in the world, producing food and beverages, including pet foods, under various brands in more than 47 states. Nestle's manufacturing center, located in Danville's Airside Industrial Park, which produces Toll House cookie dough and Buitoni pasta products, employs approximately 6450 people.<sup>46</sup>
- **Unlin:** This Belgian company, known mostly for its Quick-Step floors, also manufactures flooring, panels, and insulation. In 2005, Unlin acquired Mohawk Industries, which owns a manufacturing center in Danville, and is now the thirteenth largest employer in the city.

The City of Danville has shown its commitment to new manufacturing by breaking ground on the new, 3,700-acre Berry Hill Industrial Park, located in Pittsylvania County near the Virginia-North Carolina border. The park, which will cost \$29.8 million to construct, is the largest industrial park in Virginia and the fifth largest on the East Coast.<sup>47</sup> While still under development, the park, shown in Figure 21 below,<sup>48</sup> will be located close to both the Norfolk Southern Railroad and interstate highways 58 and 40.<sup>49</sup>

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<sup>44</sup> <http://www.dpchamber.org/employment>

<sup>45</sup> <http://www.dpchamber.org/employment>

<sup>46</sup> <http://www.dpchamber.org/employment>

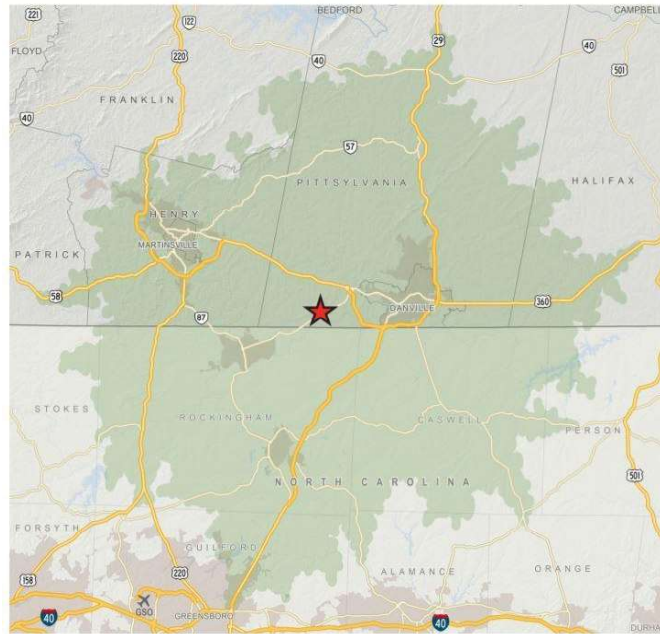
<sup>47</sup> [https://www.greensboro.com/rockingham\\_now/business/berry-hill-industrial-park-breaks-ground/article\\_24faef7c-126f-11e7-8aad-37409504e5ee.html](https://www.greensboro.com/rockingham_now/business/berry-hill-industrial-park-breaks-ground/article_24faef7c-126f-11e7-8aad-37409504e5ee.html)

<sup>48</sup> <https://maps.vedp.org/LaborMaps/242790.pdf>

<sup>49</sup> <http://www.gosouthernvirginia.com/sites-buildings/sites-buildings>



**Figure 21 – Map of Berry Hilly Industrial Park Site**



The park's developers anticipate it to maintain water and sewer capacities of 12 million gallons/day and four million gallons/day, respectively.<sup>50</sup> Appalachian Power, owned by American Electric Power, provides electrical service to the Berry Hill Industrial Park.<sup>51</sup> In addition, the Transco pipeline, which serves the City of Danville, passes directly past the park and will run parallel to the MVP Southgate project, offering another source of natural gas supply for industrial and residential customers.

There are three other major industrial parks in the city – the Airside Industrial Park, Riverview Industrial Park, and Cyber Park – all of which have lots currently available.<sup>52</sup>

## Energy Profile

As mentioned above, the Transco pipeline provides natural gas service to the City of Danville through Danville Utilities, which also offers electricity service. As shown in Figure 22 below, almost half of Danville households use natural gas as their primary fuel for household heating while slightly fewer use electricity.

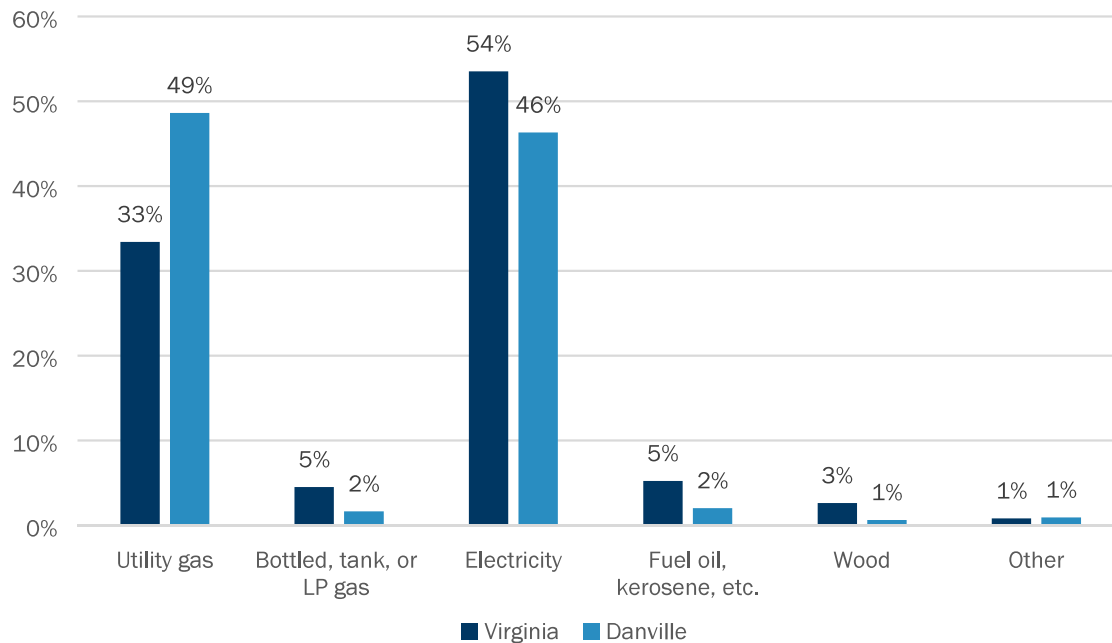
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<sup>50</sup> <https://bloximages.newyork1.vip.townnews.com/godanriver.com/content/tncms/assets/v3/editorial/3/d2/3d25cccc-1024-11e7-9800-6b457e241a5f/58d46084d9e16.image.jpg>

<sup>51</sup> <https://virginiascans.yesvirginia.org/GetBinary?id=184992>

<sup>52</sup> <http://www.discoverdanville.com/index.aspx?NID=229>

Figure 22 - Primary Household Heating Fuel in Virginia and the City of Danville, 2016



Natural gas is also important to retaining existing manufacturers and attracting new manufacturers to the county. Our interviews and analysis identified that manufacturers value abundant and reliable gas service and that access to natural gas is a primary criterion for determining where to locate new manufacturing facilities. Thus, enhanced natural gas access via the MVP Southgate project could provide an additional incentive for companies considering opening or relocating manufacturing operations to the city.

# Alamance County, North Carolina

## Economic Profile

Alamance County, North Carolina, is a 424-square mile county located in the Piedmont region of North Carolina with a 2017 population of 162,391.<sup>53</sup> In 2016, Alamance's GDP was \$6.15 billion<sup>54</sup> and its 2017 median household income was \$43,209.<sup>55</sup> Large cities and areas in Alamance County include Burlington, Graham, and Mebane.<sup>56</sup> Alamance County's unemployment rate is 4.3 percent, lower than the unemployment rate of 3.8 percent in North Carolina and the same as the unemployment rate of 4.3 percent in the United States.<sup>57</sup>

61,317 people work in Alamance County, approximately 16 percent of which work for in the healthcare and social assistance industry. The next largest sectors are manufacturing, retail, and accommodation and food service, which employ approximately 15 percent, 15 percent, and 12 percent, respectively, of Alamance workers. In addition, the average annual wage in Alamance County is \$40,092,<sup>58</sup> about 13 percent less than the average annual state wage of \$46,080 in North Carolina.<sup>59</sup> Table 7 below shows employment and average wage by industry for Alamance County.

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<sup>53</sup> U.S. Census QuickFacts: Alamance County, North Carolina, <https://www.census.gov/quickfacts/fact/table/alamancecountynorthcarolina,rockinghamcountynorthcarolina/PST045217>

<sup>54</sup> National Association of Counties. <http://explorer.naco.org/>

<sup>55</sup> U.S. Census QuickFacts: Alamance County, North Carolina, <https://www.census.gov/quickfacts/fact/table/alamancecountynorthcarolina,rockinghamcountynorthcarolina/PST045217>

<sup>56</sup> <https://www.alamance-nc.com/about-alamance-county/communities/>

<sup>57</sup> Access NC: North Carolina, [https://accessnc.nccommerce.com/DemoGraphicsReports/pdfs/stateComparison/NC\\_NC.pdf](https://accessnc.nccommerce.com/DemoGraphicsReports/pdfs/stateComparison/NC_NC.pdf); <https://data.bls.gov/timeseries/LNS14000000>

<sup>58</sup> Access NC: Alamance County, <https://accessnc.nccommerce.com/DemoGraphicsReports/pdfs/countyProfile/NC/37001.pdf>

<sup>59</sup> [https://www.bls.gov/oes/current/oes\\_nc.htm](https://www.bls.gov/oes/current/oes_nc.htm)

Table 7 - Employment and Average Wages in Alamance County by Industry

Industry	Employment	Percent of Total Employment	Average Annual County Wage	Percent Higher/Lower than County Wage
Health Care and Social Assistance	9,853	16.07%	\$54,080	34.89%
Manufacturing	9,240	15.07%	\$47,476	18.42%
Retail	9,082	14.81%	\$25,272	-36.96%
Accommodation and Food Service	7,190	11.73%	\$32,240	-19.58%
Government (total)	6,851	11.17%	\$47,476	18.42%
All Industries	61,317		\$40,092	

As shown above in Table 7, manufacturing is one of the highest paying industries in Alamance County, paying approximately 18 percent more than the average county wage. Manufacturing is also one of the largest employers in the county; GKN Driveline, Glen Raven, Honda, Jabil Packaging Solutions, and Kayser-Roth Corp, described below, are Alamance's largest manufacturing employers.

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- **GKN Driveline:** GKN Driveline is a multinational automotive components manufacturer that specializes in various driveline technologies. GKN Driveline's Mebane facility employs approximately 800 people.
- **Glen Raven, Inc. ("Glen Raven"):** Glen Raven is a fabrics manufacturer for the awning, marine, furniture, protective, military, and geosynthetics markets. Glen Raven operates multiple locations, including both corporate functions and manufacturing, in the town of Glen Raven, located in Alamance County, and employs approximately 500 people.
- **Honda Power Equipment Mfg., Inc. ("Honda"):** Honda operates a manufacturing facility in Haw River that produces engines for lawn mowers, generators, and water pumps. Honda also operates a second location in Burlington at its Honda Aero headquarters and manufacturing building that designs gas turbine engines for the Honda Jet. At these locations, Honda employs approximately 750 people.
- **Jabil:** Jabil is a product solutions company that engineers and manufactures products in a variety of spaces, including electrical, optical, software, and mechanical. Jabil's Mebane

<sup>60</sup> Alamance Chamber: Industries, [http://b49826eovvwg61335b3co132.wpengine.netdna-cdn.com/wp-content/uploads/2018/03/AC\\_EconDev\\_ProfileSheet3\\_Industries\\_v5.pdf](http://b49826eovvwg61335b3co132.wpengine.netdna-cdn.com/wp-content/uploads/2018/03/AC_EconDev_ProfileSheet3_Industries_v5.pdf)

location specializes in the design and manufacture of rigid food containers, closures, and devices and employs approximately 400 people.

- **Kayser-Roth:** Kayser-Roth, owned by the Italian company Golden Lady, manufactures intimate apparel and hosiery. Kayser-Roth's Graham manufacturing facility employs approximately 460 people.

The county has three main industrial parks: Alamance County has three industrial parks: North Carolina Commerce Park and North Carolina Industrial Park, both located in Mebane, and Buckhorn Economic Development Zone, which is located in both Alamance and Orange counties. Notably, Lotus Bakeries, based in Belgium, plans to open its first U.S. manufacturing plant in Mebane in 2020. According to the company, the new manufacturing center, located at the North Carolina Industrial Center, will cost \$48 million and employ 60 people.<sup>61</sup>

## Energy Profile

Both Piedmont Natural Gas and PSNC Energy provide natural gas service to Alamance, while Duke Energy provides electric service.<sup>62</sup> As shown in Figure 23 below, most Alamance County households use electricity as their primary fuel for household heating; however, more Alamance households use natural gas than North Carolina residents.<sup>63</sup>

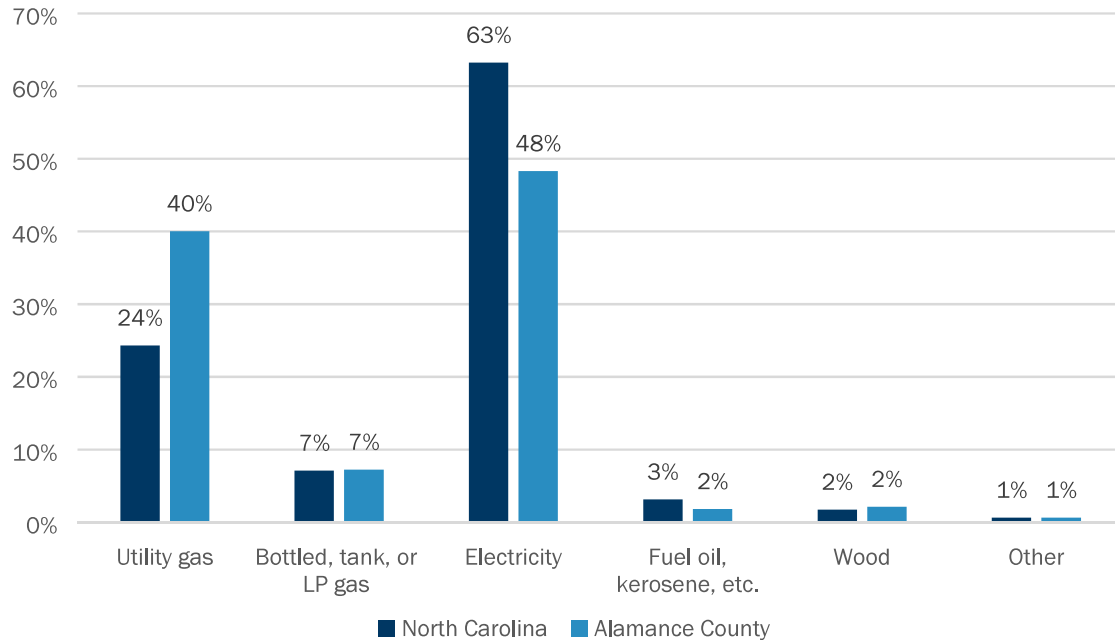
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<sup>61</sup> <http://www.areadevelopment.com/newsItems/11-7-2016/lotus-bakeries-manufacturing-operation-mebane-north-carolina.shtml>

<sup>62</sup> <http://pubstaff.s3.amazonaws.com/s3fs-public/documents/files/natural-gas-service-areas.pdf>;  
<http://www.ncuc.commerce.state.nc.us/overview/overview.pdf>

<sup>63</sup> U.S. Census, American FactFinder, Alamance County and North Carolina,  
[https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_16\\_5YR\\_DP04&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_DP04&prodType=table)

Figure 23 – Primary Household Heating Fuel in Alamance County, 2016



Natural gas is also important to retaining existing manufacturers and attracting new manufacturers to the county. Our interviews and analysis identified that manufacturers value abundant and reliable gas service and that access to natural gas is a primary criterion for determining where to locate new manufacturing facilities. Thus, enhanced natural gas access via the MVP Southgate project could provide an additional incentive for companies considering opening or relocating manufacturing operations to the city.

# Rockingham, North Carolina

## Economic Profile

Rockingham County, North Carolina, is a 573-square mile county located in the Piedmont region of North Carolina with a 2017 population of 90,949. Rockingham is made up of six municipalities, the largest of which are Madison and Reidsville.<sup>64</sup> In 2016, Rockingham's GDP was \$2.57 billion<sup>65</sup> and its 2017 median household income was \$40,003.<sup>66</sup> Rockingham County's unemployment rate is 5.2 percent,<sup>67</sup> higher than the unemployment rates of both North Carolina and the United States of 3.8 percent and 4.3 percent, respectively.<sup>68</sup>

25,507 people work in Rockingham County, approximately 22 percent of which work in the manufacturing industry. The next largest sectors are retail, government, and accommodation and food service, which employ approximately 15 percent, 15 percent, and 12 percent, respectively, of Rockingham workers. In addition, the average annual wage in Alamance County is \$34,996,<sup>69</sup> about 24 percent less than the average annual state wage of \$46,080 in North Carolina.<sup>70</sup> Table 8 below shows employment and average wage by industry for Rockingham County.

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<sup>64</sup> <http://www.co.rockingham.nc.us/pview.aspx?id=14872&catid=0>

<sup>65</sup> National Association of Counties. <http://explorer.naco.org/>

<sup>66</sup> U.S. Census QuickFacts: Rockingham County, North Carolina, <https://www.census.gov/quickfacts/fact/table/alamancecountynorthcarolina,rockinghamcountynorthcarolina/PST045217>

<sup>67</sup> Access NC: Rockingham County, <https://accessnc.nccommerce.com/DemoGraphicsReports/pdfs/countyProfile/NC/37157.pdf>

<sup>68</sup> Access NC: North Carolina, [https://accessnc.nccommerce.com/DemoGraphicsReports/pdfs/stateComparison/NC\\_NC.pdf](https://accessnc.nccommerce.com/DemoGraphicsReports/pdfs/stateComparison/NC_NC.pdf); <https://data.bls.gov/timeseries/LNS14000000>

<sup>69</sup> Access NC: Alamance County, <https://accessnc.nccommerce.com/DemoGraphicsReports/pdfs/countyProfile/NC/37001.pdf>

<sup>70</sup> [https://www.bls.gov/oes/current/oes\\_nc.htm](https://www.bls.gov/oes/current/oes_nc.htm)

Table 8 - Employment and Average Wages in Rockingham County by Industry

Industry	Employment	Percent of Total Employment	Average Annual County Wage	Percent Higher/Lower than County Wage
Manufacturing	5,635	22.1	\$44,096	26.0%
Retail	3,849	15.1%	\$24,596	-29.7%
Government (total)	3,845	15.1%	\$37,492	7.1%
Health Care and Social Assistance	3,085	12.1%	\$36,192	3.4%
Accommodation and Food Service	2,222	8.7%	\$14,040	-59.9%
All Industries	25,507		\$34,996	

As shown above in Table 8, manufacturing is one of the highest paying industries in Rockingham County, paying approximately 26 percent more than the average county wage. Manufacturing is also one of the largest employers in the county; Frontier Spinning Mills; Gildan; Keystone Foods; Sturm, Ruger & Co.; and Unifi, described below, are Rockingham's largest manufacturing employers.

- **Frontier Spinning Mills:** Frontier Spinning Mills produces spun yarns for the knitting and weaving industries. With two manufacturing plants in Mayodan, Frontier Spinning Mills employs 515 people.
- **Gildan:** Gildan is manufacturer of branded basic family apparel sold under a variety of company-owned brands. Gildan also produces other clothing items, primarily socks, for other private labels as well as unbranded activewear. Gildan operates a large distribution center in Mebane, which employs over 515 people.
- **Keystone Foods:** Keystone Foods, owned by Marfrig Global Foods, is a global food services company that supplies frozen animal protein products. Keystone Foods operates a manufacturing center in Reidsville that employs over 420 people.
- **Sturm, Ruger & Co ("Ruger"):** Ruger is one of the country's largest firearm manufacturers for the commercial sporting market. Located in Mayodan, Ruger employs over 365 people.
- **Unifi:** Unifi is a global textile company known for its production of reprene, a recycled performance fiber. With a manufacturing center located in Reidsville, Unifi employs almost 800 people.



Rockingham County also has five industrial parks: Eden Industrial Center, Madison Business Park, Osborne Industrial Park, Reidsville Industrial Park, and Stone Industrial Site. Duke Energy owns a 620-megawatt combined cycle natural gas plant in Rockingham, and Piedmont Natural Gas provides natural gas service to the industrial parks.<sup>71</sup>

Natural gas is important to retaining existing manufacturers and attracting new manufacturers to the county. Our interviews and analysis identified that manufacturers value abundant and reliable gas service and that access to natural gas is a primary criterion for determining where to locate new manufacturing facilities. In fact, NTE Energy is currently developing a 500-megawatt combined cycle natural gas plant in Rockingham and expects to begin construction this year with operations beginning in 2021.<sup>72</sup> The Transco pipeline also passes through Rockingham County but, instead of traversing east into Alamance County, the pipeline travels west through Guilford and Forsyth counties.

Regarding transportation, Rockingham recently undertook a new I-73 connector project to improve secondary roads. Norfolk Southern Railway also runs 48 miles of track through the county, with 21 miles cleared for double-stack container movement.<sup>73</sup> Our interviews, however, revealed that projects have turned down sites in Rockingham because of lacking infrastructure, including high costs of getting needed materials to project sites and inadequate highway access.

## Energy Profile

Piedmont Natural Gas provides natural gas service to Rockingham, while Duke Energy provides electric service.<sup>74</sup> As shown in Figure 24 below, the distribution of household fuel sources in Rockingham County closely mirrors that of North Carolina as a whole, with most households using electricity as their primary household heating source.<sup>75</sup>

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<sup>71</sup> <http://www.gorockinghamcountync.com/site-selection-2/infrastructure/>

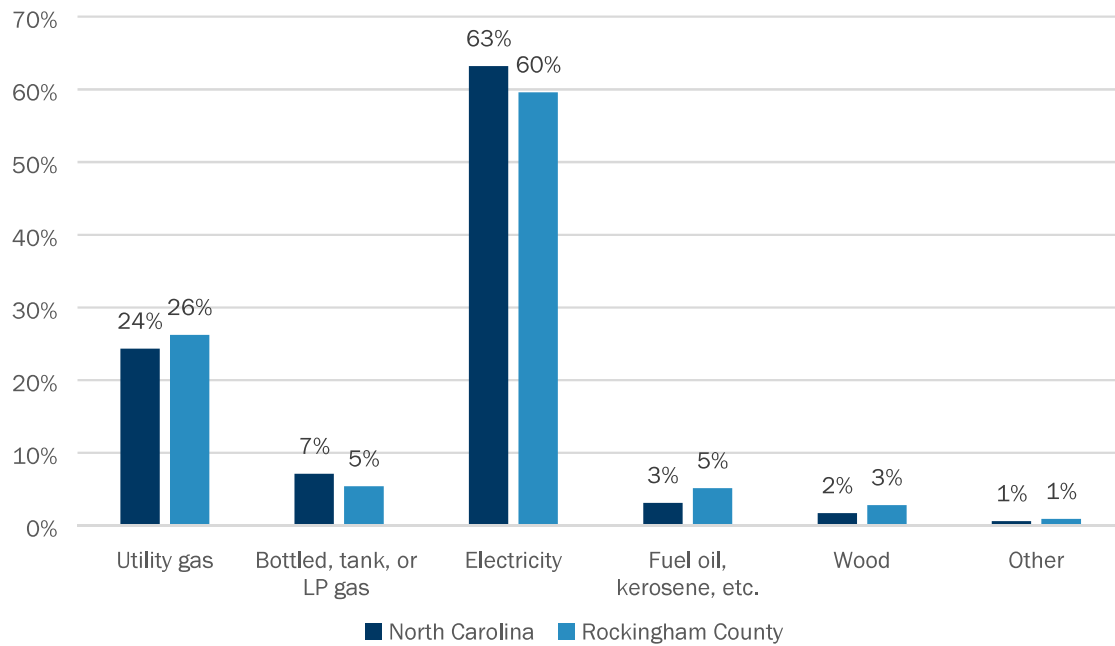
<sup>72</sup> <http://reidsvilleenergy.com/#project-overview>

<sup>73</sup> <http://www.gorockinghamcountync.com/site-selection-2/infrastructure/>

<sup>74</sup> <http://pubstaff.s3.amazonaws.com/s3fs-public/documents/files/natural-gas-service-areas.pdf>;  
<http://www.ncuc.commerce.state.nc.us/overview/overview.pdf>

<sup>75</sup> U.S. Census, American FactFinder, Rockingham County and North Carolina,  
[https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_16\\_5YR\\_DP04&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_DP04&prodType=table)

Figure 24 - Primary Household Heating Fuel in Rockingham County, 2016



Natural gas is also important to retaining existing manufacturers and attracting new manufacturers to the county. Our interviews and analysis identified that manufacturers value abundant and reliable gas service and that access to natural gas is a primary criterion for determining where to locate new manufacturing facilities. Thus, enhanced natural gas access via the MVP Southgate project could provide an additional incentive for companies considering opening or relocating manufacturing operations to the city.



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