



Economic Impact Analysis of the Virginia Tech Montgomery Executive Airport

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EXECUTIVE SUMMARY

This report estimates the economic contributions of the Virginia Tech – Montgomery Executive Airport (VTMEA) to the New River Valley (NRV). The current operations of the VTMEA contribute to the local region in three ways. First, the airport collects operational funds from outside of the NRV and spends them inside the region for its operations. Second, it attracts visitors to the NRV who might not otherwise come to the region, and their spending puts new money in the regional economy. Third, the airport fosters economic development by providing local, national, and international businesses and investors the ability to travel in and out of the region with ease, and serves as a critical gateway to Virginia Tech for the purposes of research, athletics and community relations. The first two of these impacts we can estimate quantitatively using operational and visitor spending data. The third impact we assess qualitatively using business surveys and interviews.

VTMEA local operational and visitor spending facilitates approximately \$748,000 of direct economic impact in the NRV, from which 24 jobs are sustained annually. Approximately \$339,000 of that spending funnels into households through workers' wages. As this money circulates within the NRV economy through business and employee spending, additional money and jobs are created (indirect and induced effects), adding up to a total economic impact of over \$1 million and an equivalent of 26 full-time jobs in the NRV as a result of the VTMEA.

"No business or any type of company would even consider business in Montgomery County if it did not have an airport. CEOs and business folks will not drive long distances to their plants"

-Local Economic Developer

Table 1: Combined Annual Economic Impact of VTMEA Operational and Visitor Spending			
	Economic Impact	Permanent Annual Employment	Household Earning
Direct	\$747,773	24	\$338,754
Indirect and Induced	\$275,955	2	\$74,572
Total	\$1,023,728	26	\$413,326

The current and planned construction of a longer runway and additional hangar contributes a one-time inflow of money to the region. The construction project will cost \$17 million over three years¹. The total impact of the construction, including indirect and induced effects, is \$24.1 million. While \$6.5 million of these dollars will go to construction related employment in the region, those jobs will be temporary.

Table 2: Combined Economic Impact of Runway and Hangar Construction		
	Economic Impact	Household Earning
Direct	\$17,006,138	\$4,393,422
Indirect	\$7,108,453	\$2,071,594
Total	\$24,114,591	\$6,465,016

While the economic impact from construction is temporary, longer term impact will be created from the longer runway and additional hangar space. An increase in air traffic facilitates relationship building between local businesses, university researchers, and corporations within and outside the region, strengthening ties and increasing prospects for business and resource attraction.

¹ \$17 million represents the amount paid to local construction companies from non-local sources and does not include other costs such as land acquisition.

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INTRODUCTION

In January of 2016 The Virginia Tech Montgomery Executive Airport (VTMEA) commissioned the Virginia Tech Office of Economic Development (OED) to conduct an economic impact analysis. The impetus for this study was the expansion of the airport's runway and construction of a new executive hangar, potentially increasing air traffic and business in the New River Valley. This study explores the current economic impacts of the airport and also estimates potential future impacts due to the expansion. The three year construction project will also employ workers temporarily and bring external funding to local businesses.

VTMEA is a general aviation airport located in Blacksburg, Virginia and is directly adjacent to Virginia Polytechnic and State University (Virginia Tech). VTMEA serves a wide variety of travelers and business customers in Montgomery County and the New River Valley. The airport has 248 acres and one 4,539ft x 100ft long paved asphalt runway. The VTMEA facilitates corporate and business activity and activities such as aerial inspections, aerial photography and surveying, agricultural spraying, career training, and education, emergency medical aviation, and flight training. It also serves as a gateway for business and political leaders, law enforcement, public charters, recreational flying and parachuting, and search and rescue flights.

VTMEA is funded by local, state, and national sources. As the region continues to grow through the attraction, retention, and incubation of businesses, it becomes more and more relevant to examine the economic impact and potential of the airport in fostering that economic growth. An economic impact analysis examines a specific event, new organization or activity, or object of study such as a trail, convention center or sports arena. The analysis accounts for money flowing into a defined region, from outside the region, due to that object of study. The analysis then determines how the diffusion of that money affects business revenues, household income and employment in the region, while accounting for leakages due to ensuing spending outside of the region. Methodologies of economic impact studies vary based on data availability and the researcher, which can lead to large differences between reported economic impacts. For example, In 2010 Virginia commissioned a study of the economic impact of airports across the commonwealth, estimating total economic impact for VTMEA being over \$9 million. However that study was not tailored to the region, used secondary data sources, and employed a different methodology that did not account for inflow of new money into the region and an analysis of whether that funding would exist without the presence of the airport.

This study uses both primary quantitative and qualitative data to show the current and potential future economic impacts of the airport in the region. The resulting estimates include money that exists within this region that would not be here without the airport. The research was broken down into several stages including a literature review of other airport economic impact analyses; analysis of local VTMEA operational expenditures and funding streams; analysis of direct, indirect, and induced impacts of operational spending and construction spending; visitor spending surveys and analysis; business surveys; and interviews with local business owners, economic development officials, and current airport tenants including Virginia Tech.

THE REGION

The New River Valley (NRV) is located in Southwest Virginia and is comprised of the counties of Floyd, Giles, Montgomery, and Pulaski, and the independent city of Radford. The NRV is home to approximately 181,750 residents². Of that population, 51% reside in Montgomery County, where VTMEA is located. Two general aviation airports serve the New River Valley: The New River Valley airport in Dublin, located in Pulaski County, and The Virginia Tech-Montgomery Executive Airport in Blacksburg, located in Montgomery County. Both connect directly to major industrial parks in the region. The New River Valley airport provides service to the region's one Foreign Trade Zone (FTZ). The Blacksburg-Roanoke Regional Airport in Roanoke, Virginia is the region's largest commercial airport and offers approximately 40 scheduled flights daily.

VTMEA serves several types of regional customers:

- Locally owned businesses who fly out of the region to attend meetings and also receive visits from investors and clients
- Local branches of national or multi-national companies who receive visits from corporate headquarter executives to see branches. Executives may also travel to the region through the airport to explore the potential of opening a new branch
- Recreational users who fly smaller planes for pleasure, and to some extent business and research. These individuals also help promote aviation as a career to the local population.
- Affiliates of Virginia Tech, including those involved with research, university development and fundraising, and athletics

VTMEA is unique among many general aviation airports because of its proximity to a large university, Virginia Tech. Virginia Tech is a public, Tier 1 research institution with strong ties to the VTMEA and the surrounding economy. Passengers of airplanes using the VTMEA may be traveling to attend Virginia Tech football games, attend alumni and donor events, participate in or support university-affiliated research, and other university-affiliated business such as interviewing senior administrative personnel and coaching staff.

² ACS 2015 1-year estimate

BACKGROUND ON ECONOMIC IMPACTS OF AIRPORTS SIMILAR TO VTMEA

VTMEA is considered a “general aviation” airport according to the Federal Aviation Administration (FAA). To provide context to this economic impact analysis we begin with an overview of *General Aviation* and the economic impacts of general aviation airports nationally and in the Commonwealth of Virginia. To gain insight into how other groups have conducted similar studies and explore the potential significance of runway lengths, we review comparable airports to the VTMEA by compiling a list of peer universities provided by the State Council of Higher Education of Virginia (SCHEV) and the College Board. The runway length of the Virginia Tech-Montgomery Executive Airport is currently 4,539ft with a planned expansion to 5,539ft. A runway expansion will allow more take off and stopping distances so planes that require faster approach speeds may more safely land in different scenarios.

What is General Aviation?

According to the FAA, general aviation airports are public-use airports that do not have regularly scheduled air services for consumers or have fewer than 2,500 passengers each year. General aviation airports account for about 88 percent of airports in the FAA’s National Plan of Integrated Airport Systems³. Other airport types include primary and non-primary commercial service airports, cargo service, and reliever airports that may be publically or privately owned. However, every three out of four takeoffs and landings at US airports are conducted by general aviation aircraft, and most of those operations occur at the 2,952 general aviation airports in the United States⁴.

The services provided by general aviation airports are significant to agriculture, emergency services, media coverage, flight school training, and construction. General aviation airports are also heavily utilized by personal and corporate planes and allow executives to transit quickly to locations that lack convenient access to commercial airports. The services provided at each general aviation airport differ and affect their classification by the FAA into one of four categories: national, regional, local, and basic.

The five categories of general aviation aircraft are piston-powered airplanes, turboprop airplanes, jet-powered airplanes, rotorcraft (i.e. helicopters), and experimental or other aircraft. Experimental aircraft include several variations of and features on aircraft such as having a piston engine, turbine engine, gliders, and lighter-than-air aircraft (i.e., hot air balloons). They may also include home-built or kit aircraft flown by aviation enthusiasts, light-sport aircraft primarily flown for personal recreation, and certain vintage aircraft and rebuilt military aircraft flown for aerial exhibitions. VTMEA supports all of these aircraft types, but primary supports piston-powered, turboprop, and jet powered airplanes.

In 2013 general aviation airports directly employed 255,000 full and part-time workers nationally, with each direct job supporting 3.3 jobs elsewhere in the U.S. economy⁵. Overnight passengers spent \$1.9 billion on meals and \$3.6 billion on lodging. Through this travel, the general aviation industry supported 1.1 million jobs and \$219 billion in output, \$69 billion in labor income, and added \$109 billion to US GDP, which accounts for \$346 per person in the US. A 2011 study conducted by ICF International and funded by the Virginia Department of Aviation estimated that in 2010, Virginia’s general aviation sector had a total

³ Federal Aviation Administration, http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/categories/

⁴ Federal Aviation Administration, May 2012 Asset Report

⁵ PwC, “Contribution of General Aviation to the US Economy in 2013,” 2015

employment impact of 17,500 jobs, over one billion in wages and salaries, and just under \$3 billion in total output⁶.

VTMEA and Other University-Affiliated Airports

OED identified a handful of peer airports with similar connections to local universities by pulling lists of Virginia Tech peer universities from The State Council of Higher Education of Virginia (SCHEV) and the College Board. Some of these peers may be less relevant because their proximity to larger metropolitan areas and commercial airports, which would affect air traffic of peer airports. These universities include:

- SCHEV Peer institutions: Iowa State, NC State, Ohio State, Penn State, Purdue, Texas A&M, Colorado-Boulder, and Illinois Urbana-Champaign.
- Other Rural and Large Universities: Auburn University, Northern Arizona University, Washington State University, Utah State University, Ohio University, and BYU-Idaho.

We compared runway lengths of these peer universities with VTMEA to show how an expansion might position us to be more comparable to other regions with Tier 1 research institutions. In evaluating airports according to runway length, the VTMEA is currently comparable to, or even slightly more competitive than, two airports in Virginia Tech's peer group:

- *Boulder Municipal Airport* (Boulder, CO): a 4,100ft runway.
- *Rexburg-Madison Regional Airport* (BYU-Idaho): a 4,204ft runway.

Once the runway is extended, the airport will be more comparable to the following peer university airports, with runway lengths less than 6,000ft:

- *The Auburn University Regional Airport*: two runways at lengths of 5,265ft and 4,002ft.
- *The Oconee County Regional Airport* (Clemson University): a 5,000ft runway.
- *The Ohio State University Airport*: three runways at 5,004ft, 3,562ft, and 2,994ft.
- *The Ohio University Airport* (Athens, OH): one runway at 5,600ft.
- *The Ames Municipal Airport* (Iowa State University): two runways at lengths of 5,700ft and 3,492ft.

From these numbers, we know that with the expansion, the capacity of the VTMEA will become more comparable to that of airports of similar institutions, at least in terms of infrastructure. However, the extent to which the VTMEA will become more competitive with those institutionally affiliated airports in terms of overall economic impact is more difficult to determine. This difficulty in determination is due to the fact that the economic impacts of these airports have been thus far been calculated as part of state-wide analyses, and were not contextualized or tailored to each airport's respective region. Further, there was not consistency in the methodologies used for these analyses. Therefore, comparing the economic impacts of individual general aviation airports to that of VTMEA using these studies is not reliable.

The VTMEA economic impact results from the 2011 Virginia Airport System Economic Impact Report similarly cannot be rationally compared to the results of this current study because the 2011 study did not focus on local impacts. The 2011 Virginia Airport System Economic Impact Report states that in 2010 VTMEA supported 70 total jobs, \$1.98 million in payroll, and \$9.40 million in economic activity. The difference in this 2010 number, and our lower 2016 number can be attributed to several methodological

⁶ ICF International, "Virginia Airport System Economic Impact Study", 2011

factors, and does not indicate that the airport has less economic impact than it did six years ago. The most important differences are as follows: first, for this study we define the impact region as the NRV (not all of Virginia); second, we analyze only the impact of operational spending at NRV businesses; and third, we include only visitor spending dollars from visitors outside of the NRV who would not have travelled to the NRV without the airport. The data and methodology utilized for this study is described in more detail in the following section.

DATA AND METHODOLOGY

The economic impact estimates included in this report are conservative, and based on locally-sourced data that is contextualized to the region. This study uses both primary quantitative and qualitative data to show the current and potential future economic impacts of the airport in the region. The resulting estimates include money that exists within this region that would not be here without the airport.

The research was broken down into several stages. To estimate the quantitative economic impacts of VTMEA, we reviewed VTMEA operational expenditures and funding streams and separated those funds into local and non-local expenditures. We then took these direct local operational expenditures and separated the spending by industry category (for a list of industry categories, see appendix A). A visitor survey was distributed to pilots, owners, and passengers arriving or departing from the VTMEA to assess average spending per visit, purpose for visit, and whether or not they would travel to the NRV if the airport did not exist (Appendix B). Using those visitor spending estimates we determined the average spend per visit, multiplied that number by the estimated number of visitors per year from arrival logs (approximately 2600), and adjusted the total annual visitor spending to account only for spending that would not occur without the airport⁷.

Visitor spending estimates differ based on travel for general purposes, travel for football games, and travel for other Virginia Tech events such as graduation and family weekend. Seventeen percent of visitors reported that they would not travel to the NRV if the airport did not exist. An additional 43% claimed that they would travel to the region less if the airport did not exist. For calculation purposes, we assume that this means they would travel to the region 1/3 as much as they do now. For this reason, we count 17% of visitor spending, plus 2/3 of visitor spending for 43% of visitors as local economic impact of the airport. The total direct visitor spending impact used in the economic model is as follows:

Visitor spending local direct impact = (17% X total visitor spending) + 2/3 (43% X total visitor spending)

The combination of local operational and airport dependent visitor spending are considered the direct effects of VTMEA, and were analyzed using IMPLAN to estimate the total economic impact, described as combined direct, indirect and induced effects:

- The direct effect on suppliers who meet the incremental demand for goods and services by visitors/operations,
- The indirect effect created when direct suppliers purchase inputs from other firms who themselves purchase further inputs and so on, and

⁷ Visitor spending estimates are based on data from 48 completed surveys received over six months. This represents 2% of visitors annually and therefore may slightly over or under estimate spending per trip. For this reason we exercised caution and provide conservative estimates of total visitor spending impact so as not to overstate this impact.

Economic Impact of the Virginia Tech Montgomery Executive Airport

- The induced effects, which arise when the beneficiaries (households) of the direct and indirect expenditures spend their increased incomes on consumer goods and services.⁸

To assess the additional impacts of VTMEA that are difficult to quantify, we used a combination of surveys and interviews. First, a business survey was sent to local businesses through Economic Development offices and the Corporate Research Center to ascertain their familiarity with the airport, and how or whether they use the airport to conduct business (Appendix C). We conducted interviews with local institutions including university and business who use and/or promote the VT airport for both business and pleasure. We also conducted interviews with airport tenants to determine how and why they use the airport.

An analysis of interviews and surveys of local businesses, airport tenants, and university officials provided context and further information on the importance of the airport to the region in ways that might not be captured in the quantitative economic impact analysis. The analysis was also used to create a list of recommendations on ways the airport might better serve the business and general aviation community in order to increase its economic impact in the future.

Finally, to estimate the economic impact of runway and hangar construction, local direct spending by the airport over the next three years was analyzed using IMPLAN to estimate the total combined direct, indirect and induced effects of construction spending. Data from business interviews and surveys, and visitor surveys regarding the anticipated increases in traffic due to the longer runway and new hangar were also analyzed. The table below summarizes the metrics and sources.

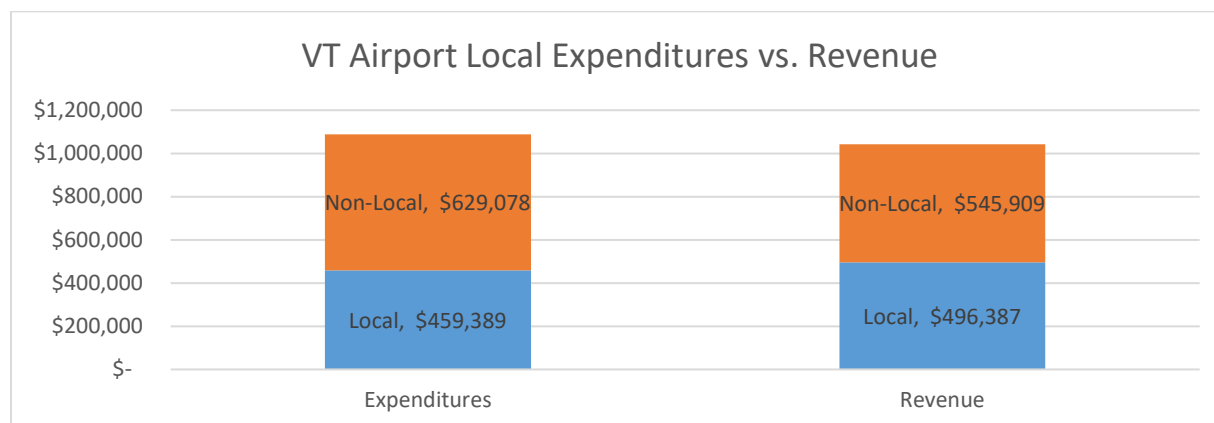
Table 3: Economic Impact Metrics, Description, and Source			
Metric	Type	Description	Source
Local operational spending	Traditional economic impact metric	Direct impact, quantitative – Spending done by the airport in the designated region using nonlocal revenue. Includes employee salaries.	Operational spending budget
Local spending by visitors	Traditional economic impact metric	Direct impact, quantitative – visitors to the region who would not travel here if the airport did not exist. They spend their non-local money in the designated “local” region	Visitor surveys, average spending estimated by linking estimates to total number of visitors per year
Total Economic Output	Traditional economic impact metric	Indirect impact, quantitative – operational and visitor spending averages put into an economic impact model to estimate additional money generated as dollars spent in the region	IMPLAN analysis
Number of jobs created in the region due to the airport	Traditional Economic impact metric	Indirect impact, quantitative – operational spending averages input into an economic impact model to estimate jobs created as a result of money circulated in the region	IMPLAN analysis
Perspectives of businesses that regularly use the airport	Dependent business economic impact metric	Qualitative and quantitative	Business surveys and interviews
University research and athletics	Dependent research economic impact metric	Direct impact, qualitative	Interview with VT researchers

⁸ Lee, M. (2006) “Analytical Reflections on the Economic Impact Assessment of Conventions and Special Events.” *Journal of Convention & Event Tourism* 8(3): 71-85.

RESULTS: ECONOMIC IMPACT OF THE VTMEA

Operational Spending Impact

The airport receives its operational funding from both inside and outside of the region. The proportion of revenue received from outside the region, and expenditures to entities outside the region are roughly equal.



VTMEA spends a large portion of its operating expenses locally, with the largest proportion going to supporting staff wages and benefits. Of \$459,389 spent locally each year, \$453,240 contributes directly to the local economy⁹. Combining the direct effects with indirect and induced effects, the total annual impact of operational expenditures at the airport is \$615,111.

Table 6: Economic Impact of Virginia Tech Montgomery Executive Airport Operations			
	Economic Impact	Employment	Household Earnings
Direct	\$453,240	20	\$261,786
Indirect and Induced	\$161,872	1.3	\$ 42,944
Total	\$615,111	21.3	\$363,957

Visitor Spending Impact

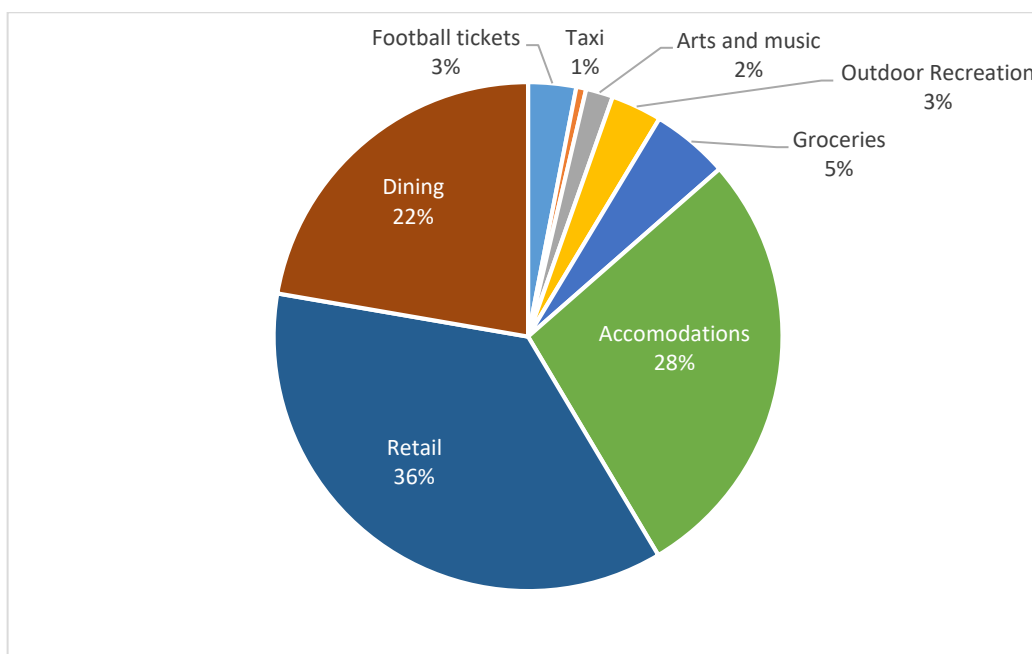
Visitor spending contributes almost \$300,000 to the local economy. This represents funds directly attributable to the existence of the airport. Indirect and induced impacts total approximately \$115,000 for a combined economic impact of visitor spending of over \$400,000.

Table 5: Economic Impact of Virginia Tech Montgomery Executive Airport Visitor Spending		
	Economic Impact	Household Earnings
Direct	\$294,534	\$76,967
Indirect and Induced	\$114,084	\$31,628
Total	\$408,617	\$108,595

The majority of visitor spending is in dining, retail, and accommodations. Visitors also report spending on local transportation, arts and music, outdoor recreation, groceries, and football tickets.

⁹ Note: this number is lower than expenditures because of leakages with retail sales. Margins on retail sales for goods such as office supplies are 17%, which means that the local office supply company only retains a portion of what the airport pays them for supplies.

Figure 1: Nonlocal Spending Breakdown



Combined Economic Impact

The total local economic impact of VTMEA, combining VTMEA operations and nonlocal spending, is over \$1 million. Approximately \$413,000 of that accrues to local households in the form of earnings, sustaining the equivalent of 26 full-time jobs.

Combined Annual Economic Impact of the Virginia Tech Montgomery Executive Airport Operations and Spending by Visitors			
	Economic Impact	Permanent Annual Employment	Household Earning
Direct	\$747,773	24	\$338,754
Indirect and Induced	\$275,955	2	\$74,572
Total	\$1,023,728	26	\$413,326

Economic Impact of the Runway and Hangar Expansion

The runway length of the VTMEA is currently 4,539ft with a planned expansion to 5,539ft. A runway expansion will allow more take off and stopping distances so planes that require faster approach speeds may more safely land in different scenarios. In the case of VTMEA, the current runway length is appropriate for a B-II class airplane that has an approach speed of 91 knots to 121 knots. The expansion will allow C-II class planes that approach at 121 to 141 knots which make up 72% of the corporate jet market. The construction of additional hangar space will allow for larger corporate jets to shelter their planes, especially in the case of inclement weather. The combination of a longer runway plus executive-level hangar space will be especially important in winter months when pilots currently may choose one of the other airports in the region, or avoid travel entirely.

The construction of the runway and additional hangars brings a direct economic impact of \$17 million over three years. The total economic output due to construction spending, including indirect and induced effects, is \$24.1 million. While the construction of phase 1 and 2 will create 53 temporary direct jobs, and 27 indirect jobs, 22 of those temporary jobs will be sustained over the three year period.

Economic Impact of Runway construction Phase 1 and 2, and Hangar (2016-17)			
	Economic Impact	Employment for phase 1 and 2 of construction	Household Earning
Direct	\$8,794,356	53	\$2,338,093
Indirect and Induced	\$3,672,204	27	\$1,073,734
Total	\$12,466,560	80	\$3,411,827
Economic Impact of Runway construction Phase 3 (2017)			
	Economic Impact	Employment for phase 3	Household Earning
Direct	\$5,444,443	30	\$1,403,191
Indirect and Induced	\$2,298,974	17	\$668,030
Total	\$7,743,417	47	\$2,071,221
Economic Impact of Runway construction Phase 4 (2018)			
	Economic Impact	Employment for phase 4	Household Earning
Direct	\$2,767,339	14	\$652,138
Indirect and Induced	\$1,137,275	8	\$329,830
Total	\$3,904,614	22	\$981,968

VTMEA estimates construction will be completed by 2019. With the expansion of the runway and subsequent increase of safety margins, individuals and companies will be more likely to fly into the airport easily and safely using larger aircraft. Thus this expansion poses increased regional economic impacts.

Visitor and business surveys indicate that once the runway expansion and hangar construction is complete, the airport will see an increase in traffic. 17% of visitors estimated that they would increase the frequency with which they travel to the NRV through VTMEA. Increased air traffic could increase overall economic impact numbers described above. First, more visits to the NRV translates to more visitor spending in the local economy. Second, visitors may choose to use jets, rather than general aviation aircraft, which in turn leads to higher fuel sales. Though most of fuel sale dollars leave the region, a small retail markup will help the airport maintain its services. Third, an uptick in the frequency with which companies and individuals choose to use the VTMEA increases the chances of relationship building among local businesses, university researchers, and corporations that sponsor university research.

"[With the runway expansion] the importance of the VT airport will increase over time as road travel, especially on I-81 becomes more difficult"

– Business owner and investor

While the number of visitors who reported they would increase the frequency with which they travel to the airport was small and not statistically significant in terms of overall traffic, we estimate that even a modest increase in traffic of 10% would translate to an increase in economic impact of visitor spending by \$41,000 annually. This number is supported by the qualitative findings below.

OTHER IMPACTS: ECONOMIC DEVELOPMENT AND UNIVERSITY

In addition to the monetary economic impact that VTMEA has on the region, the airport also fosters economic development by providing locally-, nationally-, and internationally-owned businesses, researchers, and investors the ability to travel in and out of the region with ease. The airport also serves as an important gateway to Virginia Tech for the purposes of research, athletics and community relations. OED interviewed and surveyed a variety of local stakeholders for this study that aligned with the customer base of the airport. An analysis of those interviews and surveys is provided below according to those categories:

- Economic Development:
 - Local businesses – flying out of the region to attend meetings, visits from investors
 - Local branches of larger corporations – corporate execs fly in to see their branches, or explore potential expansion opportunities
- VT affiliates – research, development, athletics
- General Aviation enthusiasts/ recreational flyers

Impact on Local Economic Development

The VTMEA acts as a critical conduit for businesses in the New River Valley. The airport is important in terms of attracting employees, connecting to funding and venture capital, bringing in outside expertise, developing community partnerships, attracting clients, product distribution, and time spent travelling to other regions.

According to local business leaders the airport serves as a critical gateway for entrepreneurs, investors, and leaders of large national and international corporations who make decisions to have a presence in the community. The airport allows them access to VT, businesses and startups at the Corporate Research Center (CRC), larger area businesses, and branches of national chains. Without the airport, it would likely be more difficult to attract investors to the region. Venture capitalists, for example, might not invest in businesses if they can't complete a meeting in a single day.

A survey of approximately 50 Montgomery County businesses showed that 23% fly in or out of the airport at least once or twice per year. Fifty percent of businesses surveyed receive visits from current/potential clients, investors, or customers via the airport. For those that utilize the airport, time spent

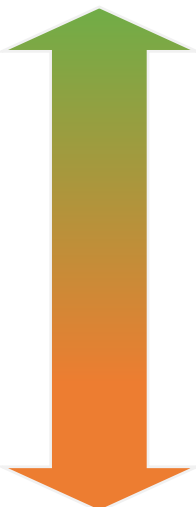
"Part of the reason I like being part of the CRC is the proximity to the airport"

- Business owner

travelling to other regions, ability to bring in outside expertise and consultants, and connecting to venture capital and other funding sources were the most important uses of the airport. Two companies reported that the airport was extremely important to their decision to locate in the NRV.

"I know one of the companies [in the CRC] had a high profile Silicon Valley client make an investment and used the airport as a way to get in and out quickly. There are probably dozens of cases where potential investors have used the airport to make decisions that don't take more than a day to execute"

-Local business owner and entrepreneur

Table 2: Importance of VTMEA for Area Businesses	
	Most important
	Time spent traveling to other regions
	Bringing in outside expertise and consultants
	Connecting to venture capital and other funding sources
	Decision to locate business in the NRV
	Attracting clients
	Developing community partnerships
	Attracting employees
	Corporate visits
	Product distribution
Least important	

One reported barrier for local businesses in terms of using the airport for business travel is a lack of understanding of what services are available to those who do not own planes. Area businesses are interested in utilizing the airport, given its proximity to their businesses and difficulty travelling in and out of commercial airports in Roanoke, Charlotte, and Greensboro. More information on air charter or air taxi service and collaboration and communication between businesses regarding air travel in and out of the VTMEA may increase the use by smaller local entities, allowing them to more efficiently conduct business.

One local entrepreneur familiar with the flow of investment into regional start-ups and existing businesses predicts that with the runway extension, the attraction to visit local companies will increase as it becomes easier for larger jets to use the airport safely. As accessibility increases, the profile of the region as a hub for entrepreneurship and innovation will also increase, leading to greater investments and jobs. Local economic developers and members of the business community are excited about the potential increases in traffic that the runway expansion will allow. With the expansion, individuals using jet aircraft can travel directly to and from locations across the country. As the region seeks to strengthen its ties to Silicon Valley, for example this can increase external investment in the region.

Impact on Virginia Tech

Virginia Tech uses the airport for athletics, research, and community relations. The athletics department reports using the airport for recruiting and community relations approximately twice per month. A previous VTOED report on the economic impact of VT football showed that the program contributes to an estimated economic impact of \$69 million. The airport receives an average of 33 planes for each football game, of which half are corporate jets. 75% of survey respondents who travelled to the region for the purpose of attending a football game claimed that they would not travel to the region, or would travel less without the airport. Being able to use the airport for athletic recruiting also helps the athletics program efficiently plan and maintain its quality. The airport also facilitates connections between Virginia Tech athletics and the community. For example, the athletic director and others use the VT airport to fly out for speaking engagements which builds the profile and reputation of the program and university.

The runway extension will be a positive development for athletics, especially sports with smaller team rosters, such as basketball, wrestling, and track and field, because it will help teams competing who can charter planes. According to VT Athletics, conference members and teams may prefer to fly into Blacksburg, rather than Roanoke, and will appreciate and more readily use the airport after its runway expansion. We may see residual impact in the ability to schedule non-conference games or tournaments as well, which will increase both the visibility of Virginia

Tech athletics, and also attract additional non-local visitors and spending to the region. The airport and the extension of the runway will positively affect student athlete welfare. Being able to save student athletes time and stress by travelling directly to and from campus will positively impact their academic and athletic performance.

“One large impact [of the airport] is with alumni who have been successful and have private planes. They fly in for football games, and at the airport, and at these games, are able to network with one another and with local businesses”

-CEO, alumnus, tenant

The airport plays an important role in the research of the University. Researchers are able to travel efficiently to conduct high profile meetings, give presentations, and engage in joint research with other universities and industries around the country. Corporations interested in sponsoring research as well as researchers from other universities are also able to travel efficiently to Virginia Tech.

While many of the university’s researchers rely on the airport for travel, the airport facility itself is used for research purposes. Turbo Lab, led by Dr. Walter O’Brien in the Department of Mechanical Engineering

“The airport provides convenience and time savings for departments”

- VT Air Transportation Services

receives research support from NASA, the military, and private engine manufacturers including Honeywell and Boeing. The jet propulsion lab financially supports approximately ten graduate research assistants and two full-time faculty members. The lab director estimates that it brings in over \$1 million in support each year. Dr. O’Brien

contends that without the airport and the facility in which jet engines are housed and tested, this research would not exist at Virginia Tech. While difficult to quantify in monetary terms beyond the \$1 million in annual direct impact, the existence of the Turbo Lab has impacted the university and the NRV by attracting corporate sponsored research, talented faculty and graduate students, and helped raise the profile of Virginia Tech as a leader in jet propulsion research.

Impact on General Aviation and Education

While the airport serves a role in conducting business and research, it also provides general aviation enthusiasts with recreation opportunities. Those enthusiasts include members of the Virginia Tech staff and faculty, local entrepreneurs and business owners. Some faculty members who fly recreationally admit that the airport was an important regional asset that attracted them to their positions at Virginia Tech. Those faculty members bring in research funding and also attract graduate students to the university. The airport is also home to the Hokie Flying Club, a group of aviation enthusiasts and pilots who regularly use the airport for business, recreation, and flight training. They are also the primary group

responsible for introducing local youth to aviation careers which becomes increasingly important as Virginia looks to increase its supply of pilots to strengthen the aviation industry.

Interviews with general aviation enthusiasts, some of whom are tenants of the airport show mixed feelings regarding the runway expansion and hangar construction. Hangar rental remains unaffordable for most tenants who were interviewed, there is some concern about having to park planes on grass, rather than pavement, and some reservations about future access for recreational and training use if air traffic were to increase.

“Turbo jets and corporate jets bring the big economic impact. I would also submit that a real healthy GA airport brings in things that are harder to measure, but in the long run benefit the community”

- Business owner and VTMEA tenant

RECOMMENDATIONS

To increase the impact of the airport, we recommend several steps. First, we recommend increasing outreach to the local business community to better inform them of opportunities to use the airport that do not require owning or leasing a plane. At the same time, discussions with air taxi or charter services could help align the supply and demand of air transportation services in and out of VTMEA. Second, those interviewed (both business owners and pilots), had recommendations regarding the customer service at the airport. While most commended the overall management of the airport, several suggested that training individuals at the front desk in customer service would improve the experience of executives travelling to the airport who are used to higher levels of service. Offering more attentive service especially in terms of refueling, helping with ground transportation, and fostering a welcoming atmosphere that introduces people to Virginia Tech and the NRV may increase visitors' first impression and along with it the likelihood of returning. Last, there appears to be some concern among the general aviation community that by focusing on increasing jet and executive traffic to VTMEA, the general aviation community will no longer be able to use the airport. Approximately 30% of visits to the NRV through the airport are for the purpose of recreation, and those visitors spend money in the local economy, which contributes to the economic impact of the airport. Furthermore, some local business owners and researchers value the airport for recreational purposes. Moving forward, increased communication and transparency regarding decisions may ensure that the direction of the airport is inclusive to the needs of all users.

CONCLUSION

This examination of the current and potential future economic impacts of the VTMEA is relevant to the promotion of regional economic growth through the attraction, retention, and incubation of businesses, fostering better quality of life for residents, and helping the university achieve its goals. The use of both primary quantitative and qualitative data that has been contextualized to the region shows the benefit to several customer types, including locally owned businesses, local branches of national companies, recreational users, and affiliates of Virginia Tech.

VTMEA spends a large portion of its operating expenses locally, with the largest proportion going to supporting staff wages and benefits. Of \$459,389 spent locally each year, \$453,240 contributes directly to the local economy. Combining the direct effects with indirect and induced effects, the total annual impact of operational expenditures at the airport is \$615,111. Visitor spending contributes almost

Economic Impact of the Virginia Tech Montgomery Executive Airport

\$300,000 to the local economy. This represents funds directly attributable to the existence of the airport. Indirect and induced impacts total approximately \$115,000 for a combined economic impact of visitor spending of over \$400,000. The total local economic impact of VTMEA, combining VTMEA operations and nonlocal spending, is over \$1 million. Approximately \$413,000 of that accrues to local households in the form of earnings, sustaining the equivalent of 26 full-time jobs.

The expansion of the runway length to 5,539ft impacts the economy through the one-time influx of funds (\$17 million in direct impact), and also by facilitating increased traffic to and from the airport by executive jet aircraft. The expansion will allow C-II class planes that approach at 121 to 141 knots which make up 72% of the corporate jet market.

In addition to the monetary economic impact that VTMEA has on the region, the airport also fosters economic development by providing locally-, nationally-, and internationally-owned businesses, researchers, and investors the ability to travel in and out of the region with ease. The airport is important in terms of attracting employees, connecting to funding and venture capital, bringing in outside expertise, developing community partnerships, attracting clients, product distribution, and time spent travelling to other regions. VTMEA acts as a critical gateway to Virginia Tech for the purposes of research, athletics and community relations, provides general aviation enthusiasts with recreation opportunities, and helps increase local interest in aviation careers.

APPENDIX A: VTMEA Operational Spending: Industry Categories

VTMEA spending at local companies is broken down by industry categories for input into the IMPLAN Input-Output Model. Industry categories are described below.

Operational Revenue by Origin and Local Spending by Industry Category	
<i>Revenue (nonlocal and local)</i>	
Total Airport Revenue	\$1,042,296
Nonlocal Revenue (from outside NRV)	\$545,909
Local Revenue (from inside NRV)	\$ 496,387
<i>Local Spending (inside NRV)</i>	
Industry	
Commercial machinery and rental	\$45,355
Services to Buildings	\$18,855
Telecommunication	\$5,736
Natural gas distribution	\$2,475
Fuel	\$3,890
Local government electric utilities	\$25,354
Auto repair and maintenance	\$8,617
Employee compensation	\$328,139
Website services	\$185
Grantmaking, membership dues	\$535
Other computer related services	\$15,800
Wholesale retail (office supplies)	\$4,448
TOTAL	\$459,389

Commercial machinery and rental – NAICS 445, includes copier rental and fuel truck

Services to buildings - NAICS 468-9, includes landscaping, pest control, janitorial services, building maintenance, and safety & preservation

Telecommunication – NAICS 427-8, includes wireless internet and phone services

Natural Gas Distribution – NAICS 50, for gas heating

Fuel – NAICS 156, for airport vehicle fuel

Local government electric utilities – NAICS 525

Auto repair and maintenance – NAICS 504

Employee compensation – NAICS 517, income and benefits received by airport employees

Website services – NAICS 432

Grantmaking, membership dues – NAICS 514

Other computer related services – NAICS 453, for computing and accounting services

Wholesale retail – NAICS 395, for janitorial, office, and other miscellaneous supplies

APPENDIX B: Visitor Survey

Date: _____

VT-Montgomery Airport Visitor Survey

The Virginia Tech Office of Economic Development is estimating the economic impact of the Virginia Tech Montgomery Executive Airport. Please fill out this brief 5-minute survey with information about your current visit to the New River Valley, via the VT-Montgomery Airport. Your responses will help the future of the airport!

1. What is your home zip code (or country if international)?

2. Do you live in The New River Valley (NRV) Region

[Includes Counties: Montgomery, Pulaski, Floyd, Giles, and Radford]

- ☐ Yes, I live in the NRV region.
☐ No, I'm visiting from outside the region.

3. Please select which category describes you best:

- ☐ Pilot/Owner
☐ Owner
☐ Pilot
☐ Passenger
☐ Other: _____

4. Which type of aircraft did you most recently fly in on?

5. If the runway were expanded, would that change the plane you use, and/or the frequency with which you fly into this airport?

Frequency:

- ☐ I would fly here more frequently.
☐ I would fly here with the same frequency as now.

Explain: _____

Change in plane preference (describe)

6. Please estimate the total amount of money you will spend during your time in the New River Valley.

\$ _____ Dining	\$ _____ Groceries
\$ _____ Retail shopping	\$ _____ Gasoline
\$ _____ Accommodations	\$ _____ Outdoors
\$ _____ Rental House	\$ _____ Arts and music
\$ _____ Other: _____	

7. How many people did you represent when estimating spending? _____

8. How many nights will you stay in the region? _____

9. How frequently do you fly into this airport: _____/year

Please flip page to continue



10. How satisfied are you with the airport experience?

- ☐ Very dissatisfied
- ☐ Dissatisfied
- ☐ Unsure
- ☐ Satisfied
- ☐ Very Satisfied

11. What would you change about the VT-Montgomery Airport?

KEEP GOING IF YOU'RE VISITING THE NRV

12. Do you own or lease property in the NRV?

- ☐ Yes, commercial
- ☐ Yes, residential
- ☐ No

13. If yes, how important was the proximity of the airport in your decision to purchase property?

- ☐ Not important
- ☐ Slightly important
- ☐ Moderately important
- ☐ Very important
- ☐ Extremely important

14. What is the primary purpose of your visit today?

- ☐ Business
- ☐ Recreation
- ☐ Family
- ☐ Research
- ☐ Other (describe) _____

15. If the VT-Montgomery Airport did not exist, would you still come to the NRV region?

- ☐ Yes, with the same frequency
- ☐ Yes, with less frequency
- ☐ No, I would not come to the NRV if this airport did not exist.

If yes, how would you travel to the region?

- ☐ Other airport (list) _____
- ☐ Other mode of transportation (describe) _____

Thank you for your time!

If you have additional questions, comments, or concerns, please contact Elli Travis at emtravis@vt.edu or (540) 231-8324.

Appendix C: Business Survey

Q1 Does your company use the VT-Montgomery Executive Airport? Please tell us if and how in <2 minutes! The VT Office of Economic Development is conducting an impact analysis of the VT VT- Montgomery Executive Airport. We are interested in hearing about your use of this airport. Your responses will be kept confidential to VT OED.

Q2 In the past year, how frequently have you or your staff used the VT-airport to travel to and/or from the New River Valley for business purposes?

- ☐ Not at all (7)
- ☐ Very Frequently (once per week or more) (8)
- ☐ Frequently (every month or two) (4)
- ☐ Semi-Frequently (once every 3-4 months) (5)
- ☐ Infrequently (once or twice per year) (6)

Display This Question:

If In the past year, how frequently have you or your staff used the VT-airport to travel to and/or from the New River Valley for business purposes? Not at all Is Selected

Q8 What are your reasons for not using the VT-airport for your business travel?

Q4 How often do you receive visits from current/potential clients, investors, or customers who travel to and/or from the New River Valley via the VT-Airport?

- ☐ Not at all (2)
- ☐ Very Frequently (once per week or more) (3)
- ☐ Frequently (every month or two) (4)
- ☐ Semi-Frequently (once every 3-4 months) (5)
- ☐ Infrequently (once or twice per year) (6)

Display This Question:

If How often do you receive visitors from current or potential clients, investors, or customers who travel to and/or from the New River Valley via the VT-Airport? Not at all Is Not Selected

Q12 How important is/was the proximity of the airport to their decision to visit/invest/purchase?

- ☐ Important for all (1)
- ☐ Important for some, unimportant for others (2)
- ☐ Unimportant for all (3)

Q5 How important is the VT airport to your business regarding:

	Extremely Important (1)	Very important (2)	Moderately important (3)	Slightly important (4)	Not at all important (5)
Attracting employees (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Connecting to venture capital and other funding sources (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bringing in outside expertise and consultants (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developing community partnerships (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attracting clients (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Product distribution (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time spent traveling to other regions (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your decision to locate your business in the NRV (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6 The VT-airport is expanding the runway to increase safety margins and allow larger corporate planes. Does the runway expansion affect you or current/potential clients?

- ☐ Yes (explain) (1) _____
- ☐ No (2)

Q7 What mode of transportation do you primarily use to travel outside of the NRV region for business reasons?

- ☐ Roanoke Valley Regional Airport (1)
- ☐ New River Valley Airport (2)
- ☐ Personal or company vehicle (3)
- ☐ Other (4) _____

Q10 Please provide:

NRV business zip code (1)

Number of people employed at this location (2)