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**Prepared
for**

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CHMURA ECONOMICS & ANALYTICS

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1. Executive Summary

The Richmond International Airport (RIC), which is a gateway to the Greater Richmond Region and Central Virginia, plays a vital role in the regional economy. RIC and its tenants contribute annual sales of nearly \$1 billion in the local economy based on the measurable benefits of airport operations, business efficiencies, visitor spending, and their associated ripple effects. The airport also plays an important role in attracting economic development and supporting world-class business operations.

Currently, nine air carriers¹ provide service from RIC with nonstop flights to 22 destinations and connecting flights to destinations worldwide. With the addition of new airlines in recent years – including two low-cost carriers that have substantially improved fares to more than 30 of the region's top destinations – and the completion of major elements of the airport's capital improvement program, passenger volume of the airport has risen sharply. Federal Aviation Administration (FAA) data show that in 2006, RIC was the second-fastest growing airport of the nation's top 100 airports, trailing only Dallas Love Field. More than 3.6 million passengers—an all-time record and an increase of 46% over 2004 (the last full year with no low-cost carrier presence at RIC)—used RIC in 2007. In the first half of 2008, RIC avoided service cut-backs experienced elsewhere as a result of the slowing national economy and rising fuel costs. RIC cargo volume, the combined total of mail and freight, has been stable over the past six years. Per FAA data, the annual landed weight of cargo aircraft typically ranks among the top 60 cargo facilities in the U.S.

More than 50 businesses operate at RIC to make air travel possible and to accommodate travelers as they enter the Richmond metropolitan statistical area (MSA).² In 2007, these businesses directly employed an estimated 2,526 workers with a total economic output of \$196.1 million. Tenants at the airport spend an estimated \$88.3 million in wages and salaries and about \$104.3 million per year on materials, supplies, and equipment—with close to half (48%) of these products and services purchased from firms located in the Richmond Region.

The operation of the airport also generates ripple effects in the Richmond Region. \$49.9 million in indirect impact occurs when other regional businesses support the operations of the airport, such as local suppliers for airlines and concession sales. An additional induced impact of \$96.6 million occurs when individuals who are employed by RIC tenants spend their income in the region. The ripple effect stimulates 2,186 added jobs, bringing the total employment due to the airport to 4,713 jobs.

Regional businesses also benefit from the efficiencies generated as a result of RIC being located within the metropolitan area. With 2007 ticket sales approaching \$560 million at RIC in 2007, it is estimated

¹ Those nine carriers are: AirTran, American, Continental, Delta, JetBlue, Northwest, United, US Airways, and Air Canada.

² In this report, the study region is the Richmond Metropolitan Statistical Area comprising the cities and counties of: Amelia, Caroline, Charles City, Chesterfield, Cumberland, Dinwiddie, Goochland, Hanover, Henrico, King and Queen, King William, Louisa, New Kent, Powhatan, Prince George, Sussex, Colonial Heights, Hopewell, Petersburg, and Richmond. In this report, the Richmond MSA is also referred to as the Richmond Region or Greater Richmond.

that at least 60% of this volume is attributable to business travel. Convenient access to air transportation allows businesses to quickly move goods and people from one site to another, saving time and increasing productivity. From 2004 to 2007, increased usage of RIC saved regional businesses \$51.8 million with an additional ripple impact of \$34.5 million.

Furthermore, airports support a region because they draw visitors whose spending can inject millions of dollars annually into the economy. Of the 3.6 million passengers who passed through Richmond International Airport in 2007, 803,234 are estimated to have been visitors to the region. These visitors spent an estimated \$231.9 million in 2007; and including indirect and induced impacts, had a total impact of \$372.4 million in the Richmond Region. Direct visitor spending creates 3,288 jobs in the region—mostly in visitor service businesses such as hotels, restaurants, and transportation. The indirect and induced impact adds 1,178 jobs bringing the total jobs created due to visitor spending to 4,465.

State and local governments receive fiscal benefits from the airport through taxes collected based on operations and visitor spending. Based on the operations at the Richmond International Airport, local taxes totaled an estimated \$0.6 million in 2007 in the form of sales tax; business, professional and occupational licenses (BPOL); and car rental tax. The State of Virginia received car rental tax, state sales tax, and state income tax estimated at \$5.6 million in 2007. Visitor spending generated annual fiscal benefits of \$8.7 million for local governments based on sales tax, car rental tax, meal and lodging tax, and BPOL. The Commonwealth of Virginia reaps \$9.6 million in annual revenues from visitor spending.

The results of this study are summarized in Table 1.1.

Table 1.1: Richmond International Airport Economic Impact Summary						
		Direct (\$MM)	Ripple Effect (\$MM)	Total Impact (\$MM)	Local Tax (\$MM)	State Tax (\$MM)
Airport Operation	Spending	\$196.1	\$146.5	\$342.6	\$0.6	\$5.6
	Employment	2,526	2,186	4,713		
Business Benefits	Spending	\$51.8	\$34.5	\$86.2		
	Employment	NA	NA	NA		
Visitor Spending	Spending	\$231.9	\$140.5	\$372.4	\$8.7	\$9.6
	Employment	3,288	1,178	4,465		
Total Impacts	Spending	\$479.8	\$321.4	\$801.3	\$9.3	\$15.1
	Employment	5,814	3,364	9,178		
Source: Chmura Economics & Analytics						

Table 1.1 details tangible economic benefits generated by Richmond International Airport. In addition, the presence of an international airport has other benefits such as supporting business expansions and relocations and attracting meetings and conventions activity.

Business surveys were conducted for this study to assist in evaluating the economic impact of RIC and to glean insights about businesses' perceptions of the airport. The survey revealed the integral importance of the airport in supporting businesses in Greater Richmond. Respondent businesses

representing over 90,000 employees affirmed that access to an airport is important to the majority of businesses in the region and to virtually all larger businesses. Business travel and delivery were deemed important to most businesses with business travel “very important” to 36% and air mail and freight service “very important” to 40%.

Respondents rated RIC between “good” and “excellent,” on average, for parking availability, overall customer service, and ground transportation options. Average ratings between “good” and “fair” were given for destinations served and for food and beverage options. Ticket price and nonstop service were reasons businesses cited for using airports other than RIC, each reason was cited by about half of respondent firms that used other airports.

Respondent employers underscored the economic importance of RIC to the region in open-ended comments on the subject. Predominantly positive comments elicited by respondents included:

Access is key to recruiting and retaining employees for quality jobs

Cost of my clients’ business travel materially affects whether Richmond and the surrounding region is considered an area worth investing into

Economic development asset, community asset, tourism vehicle—great first impression of community

Having a better airport encourages other large employers to come to the region

2. Background

Richmond International Airport (RIC) is the gateway to Central Virginia, serving both passenger and cargo air transport. Located seven miles southeast of Richmond’s Central Business District, the airport is within an hour drive of historic Williamsburg and a two-hour drive from Washington, D.C., the Blue Ridge Mountains, and Virginia Beach. Currently, nine air carriers³ serve RIC with nonstop flights to 22 destinations and connecting flights to destinations worldwide. With the recent additions of airlines such as AirTran, JetBlue, and Air Canada, and the completion of several infrastructure projects, passenger volume of the airport has risen significantly in recent years. More than 3.6 million passengers used RIC in 2007 and that number is forecast to grow in step with the community it serves. Richmond International Airport also supports cargo shipments of about 115 million pounds each year, typically ranking among the nation’s top 60 air cargo facilities.

As the Richmond metropolitan area continues to grow and prosper, more businesses and consumers realize the airport plays a vital role in the regional economy. Beyond its importance as a mode of transportation, airports are an important component of economic development and tourism as well as a primary provider of jobs for the region. To understand its contribution to the regional economy and how

³ The nine carriers are AirTran, American, Continental, Delta, JetBlue, Northwest, United, US Airways, and Air Canada.

regional businesses rely on the airport services, Chmura Economics & Analytics (Chmura) was retained to study the economic impact of RIC on the Richmond Region.⁴

The economic impact of airports has been studied extensively throughout the country. Most of the studies⁵ acknowledge the economic impact of an airport from four different perspectives:

1. The airport's operation, including airlines and other tenants, and the resulting direct contributions to the regional economy.
2. Regional businesses benefit from the airport by utilizing its passenger and cargo services.
3. Passenger traffic, such as visitor spending, creates an economic impact.
4. Economic development benefits such as increased tourism and improved appeal of the region for business expansion and relocation.

The Chmura study of RIC follows the same approach as outlined in the existing literature. In the remainder of this report, Section 3 outlines the methodology undertaken to analyze the economic impact, including data collection and analysis. Section 4 provides an overview of the growth of RIC in recent years. Section 5 analyzes the economic impact of the airport through airport operation, business benefits, and visitor spending. Section 6 summarizes the fiscal benefits local governments enjoy. Section 7 outlines other economic benefits that are not quantified in this study, but are widely considered to have key roles in terms of community competitiveness and quality of life measures.

3. Methodology

There are two main approaches of studying the economic impact of an airport. The narrow approach focuses only on the airport operation itself, with the main goal of estimating the economic output and employment of all businesses physically located at the airport. Examples of this type of study include the economic impact of Spokane International Airport⁶ and Prescott Airport in Arizona.⁷ The second approach is broader, and includes both the economic impact of airport operations and the economic impacts associated with businesses, consumers, and other users of the airport.

The argument for a broader study to include business benefits and visitor spending is that airports bring visitors and the spending dollars associated with them from outside the region that would otherwise not have occurred without this mode of transportation, thus benefiting the regional economy. Examples of

⁴ In 2005 and 2006, Chmura conducted two studies for the Richmond International Airport focusing on the economic benefits of the entry of low-cost airlines. Those studies focused on the incremental economic impact as a result of increased passengers and visitors to the Richmond Region.

⁵ Examples of these studies include "Economic Impact Study of Norfolk International Airport," "Wichita Mid-Continent Airport Economic Impact," and "The Economic Impact of Spokane International Airport."

⁶ Source: "The Economic Impact of Spokane International Airport," by David Bunting and Mark Wagner, Institute for Public Policy and Economic Analysis, Eastern Washington University, 2006. This study can be found online at: <http://websrv.ewu.edu/groups/institutepubpol/Economic%20Impact%20GEG%20ES.pdf>.

⁷ Source: "Prescott Airport Economic Impact Study," by William V. Cheek & Associates, 2006. This study can be found online at: http://www.cityofprescott.net/_d/airport_econ_impact_2006.pdf.

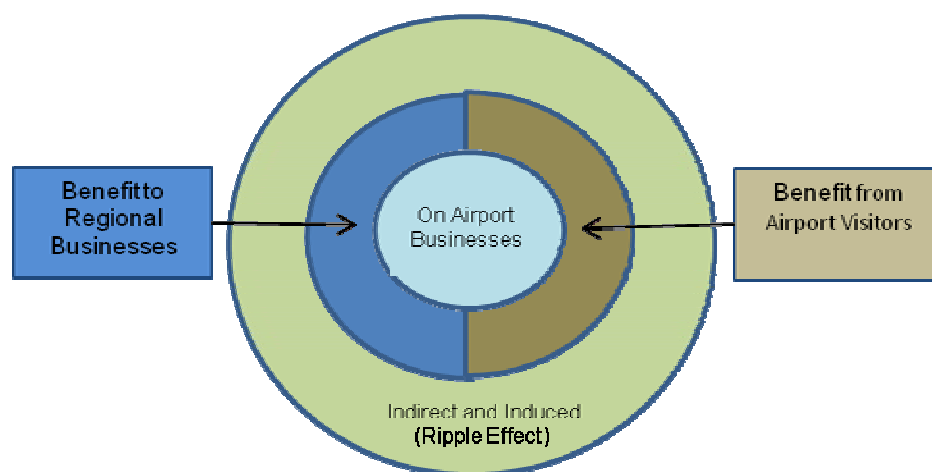
this broad approach include “Economic Impact of Norfolk International Airport,”⁸ “Wichita Mid-Continent Airport,”⁹ and “Southwest Florida International Airport.”¹⁰

This study of RIC takes the second, broader approach as shown in the analysis framework illustrated in Figure 3.1 and measures the following three direct impacts of RIC:

1. Economic impact of all businesses located at the airport (airport operations).
2. Economic benefits brought to regional businesses by air travelers.
3. Cost savings and productivity gains to Greater Richmond businesses.

The three components above constitute the total direct economic impact of RIC on the Richmond MSA economy. The core of the direct impact is the airport operations that include all businesses currently operating from Richmond International Airport, such as airlines, aircraft maintenance, car rental, ground transportation, banking, retail, and restaurants. The direct impact in terms of business benefits are the cost savings and productivity gains enjoyed by regional businesses as a result of the travel opportunities at RIC. The direct impact from visitor spending is represented by money spent in the region by RIC passengers from outside the region. The spending includes food, lodging, entertainment, and transportation.

Figure 3.1: Analysis Framework: Economic Impact of RIC



⁸ Source: Economic Impact Study-2004 Norfolk International Airport, by Jacobs Consultancy in association with Cordell & Crumley Communication Strategies.

⁹ Source: Wichita Mid-Continent Airport Economic Impact, By Janet Harrah, Anne Gallagher, and Mary Jane Townsend, Center for Economic Development and Business Research, Wichita State University, 2003. This study can be found online at : <http://webs.wichita.edu/depttools/depttoolsmemberfiles/cedbr/AirportImpact.pdf>

¹⁰ Source: Economic Impact Study—Southwest Florida International Airport, Page Field General Aviation Airport. 2006. This study can be found online at: http://www.flylcpa.com/rsw/stats/eis_rsw.php.

The total economic impact also includes the economic ripple effects of the direct impact. Ripple effects, categorized as indirect and induced, measure the secondary benefits of RIC to the regional economy that can be generated by airport tenants, business cost savings, and visitor spending. For example, many local businesses support airport operations even though they are not located in the airport, such as suppliers for Richmond and Virginia souvenirs sold in airport shops. The indirect and induced effects are estimated with IMPLAN Pro software after the direct spending is identified.

Fiscal effects are estimated as follows: since the airport is physically located in Henrico County, the applicable sales and BPOL tax for airport tenants are calculated based on the tax rate of Henrico County. For visitor spending and business savings, benefits are spread over all cities and counties in the Richmond Region. Since each locality in the region has different meal, lodging, and BPOL tax rates, Chmura estimates the region's total taxes using a weighted average tax rate according to tourism spending in each city or county.¹¹ The weighted regional tax rate is strongly swayed by the tax rates of Richmond, Henrico, and Chesterfield, three of the largest localities in the region. For fiscal benefits for state government, an average income tax rate of 5.5% is used to estimate income tax and a 4% tax rate for state sales and use tax revenues.

Both primary and secondary data sources are combined to evaluate the direct impact of RIC. Two surveys were designed to capture the airport operations and the economic benefits to the business community at large. The airport tenant survey examined the tenants at the airport, including nine airlines, car rentals, parking, and food and concession establishments in the airport terminal.¹² The business survey covered major corporations in the region to identify the benefits of RIC. Chmura incorporated data from the Virginia Tourism Corporation to estimate visitor spending. Passenger-volume data were provided by the airport while spending patterns were received from a visitor profile of air-travelers in Virginia¹³ obtained from the Virginia Tourism Corporation.

Lastly, the economic impact and surveys estimated here use 2007 as a benchmark. The economic impact for future years is assumed to grow at the same rate as that of the airport.

4. Overview of Richmond International Airport

With the growth of the region's economy and population, coupled with aggressive air service development efforts by the community, passenger volume at RIC grew at impressive rates in recent years. As Figure 4.1 shows, from the mid-1990s through the 9/11 terrorist attacks, total passengers at RIC had been increasing steadily. After the 9/11 attacks, the entire commercial aviation industry experienced significant declines and RIC was not an exception. From 2000 through 2002, passenger

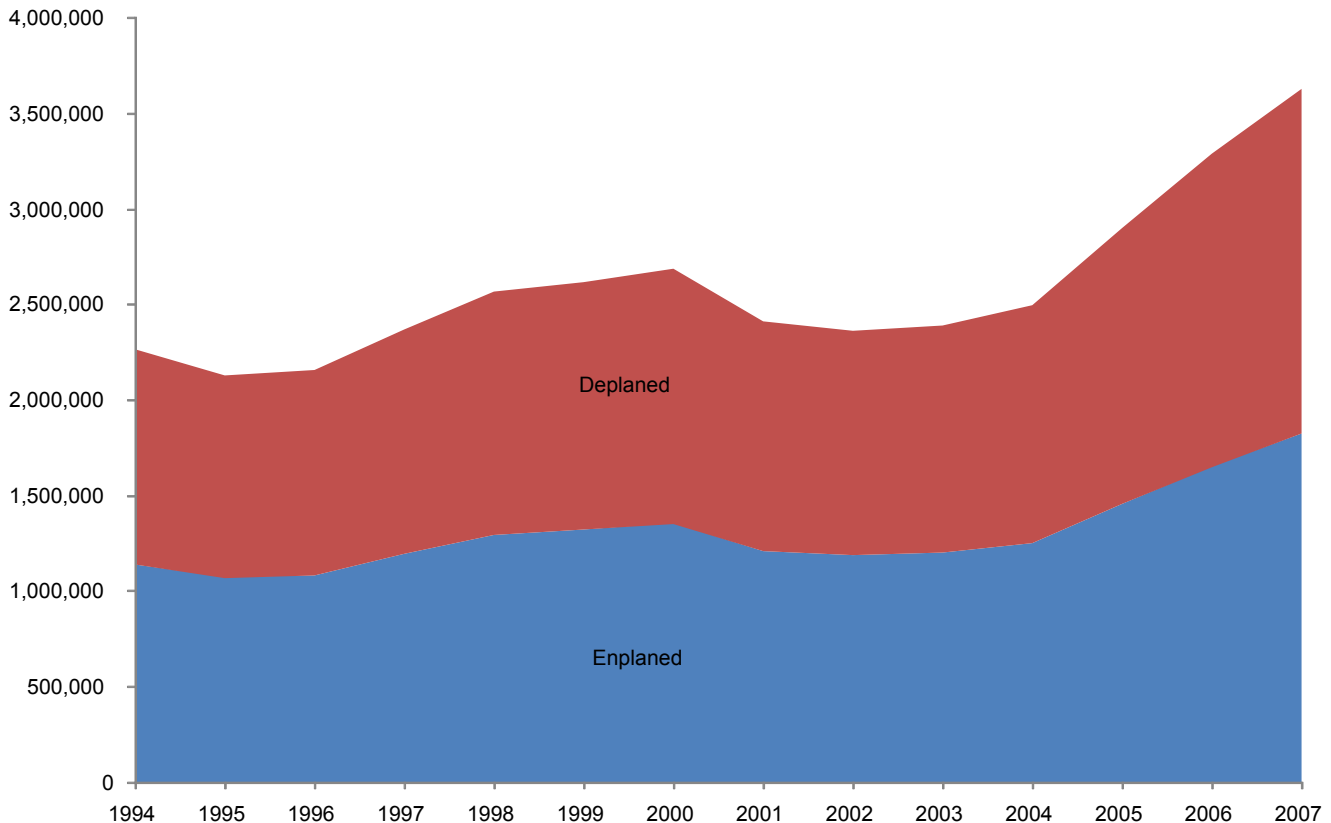
¹¹ Total tourism of each county and city was obtained from the Virginia Tourism Corporation website.

¹² Appendix 2 has the complete survey instrument and report.

¹³ According to the Virginia Tourism Corporation, the sample size for air-travelers in the Richmond Region is too small to produce a statistically valid report.

travel fell 12.2% at RIC compared to a 7.9% decline in the nation.¹⁴ Airport travel at RIC gradually recovered from 2002 through 2004 before taking off in 2005 with the arrival of low-cost carrier service. The total passenger volume (including both enplaned and deplaned) increased from 2.5 million at RIC in 2004 to 3.6 million in 2007—a 45.6% increase compared with 9.4% in the nation. Federal Aviation Administration (FAA) data show that in 2006, RIC was the second-fastest growing airport among the nation's top 100 airports, trailing only Dallas Love Field.¹⁵

Figure 4.1: Recent Passenger Volume at Richmond International Airport (1994-2007)



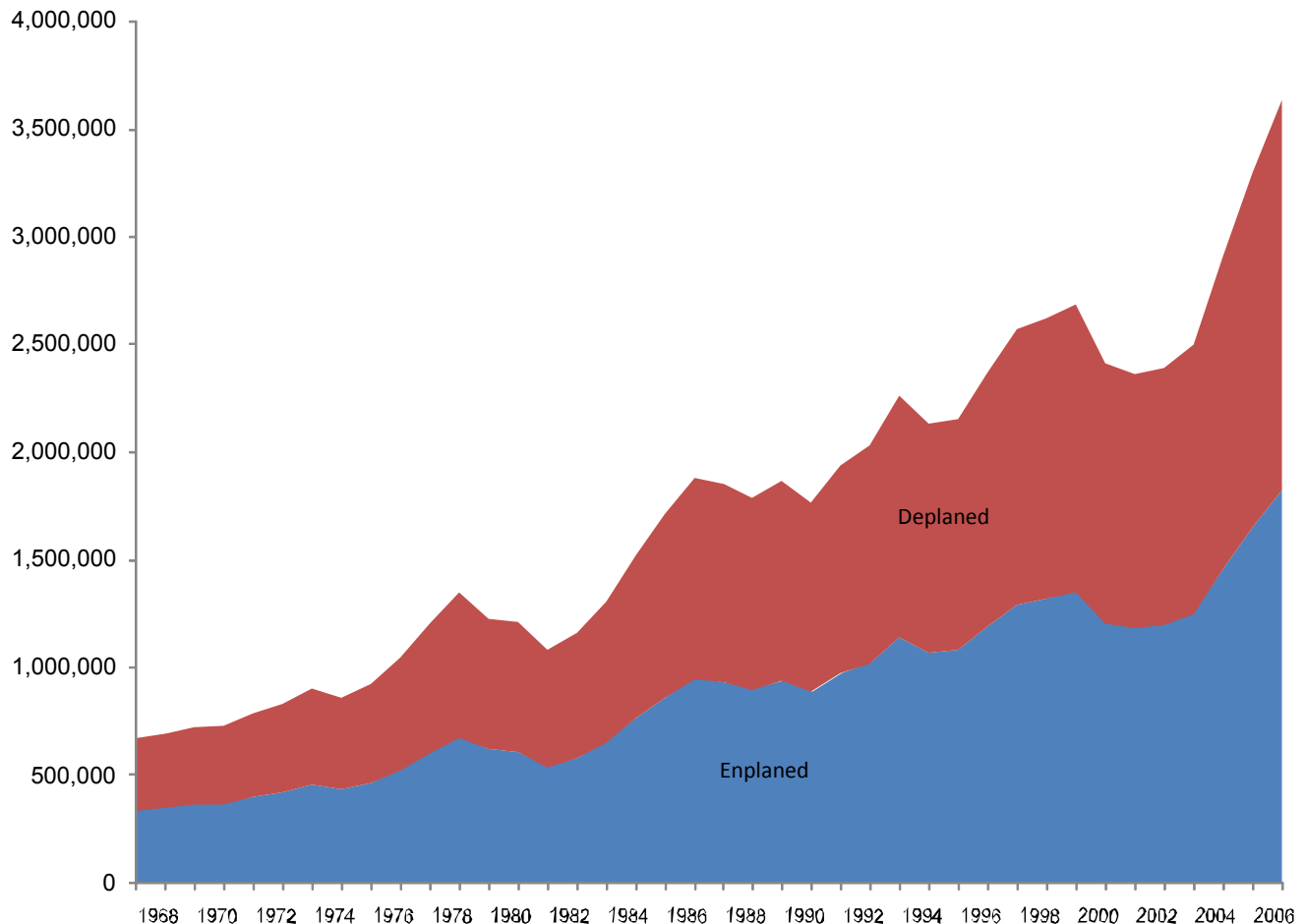
Several factors contributed to the record growth of passenger traffic at RIC in recent years. As detailed in two previous Chmura studies, the entry of two low-cost carriers (AirTran and JetBlue) lowered ticket prices to several high-demand markets and expanded the number of nonstop destinations. During the same period, several major infrastructure expansions came online to address operational needs, increasing gate capacity, ticket counter positions, baggage claim throughput and screening in a post-9/11 environment, terminal curbside frontage, and public parking spaces.

¹⁴ The source for RIC passenger data is Capital Region Airport Commission, and the source for national passenger data is Bureau of Transportation Statistics, U.S. Department of Transportation.

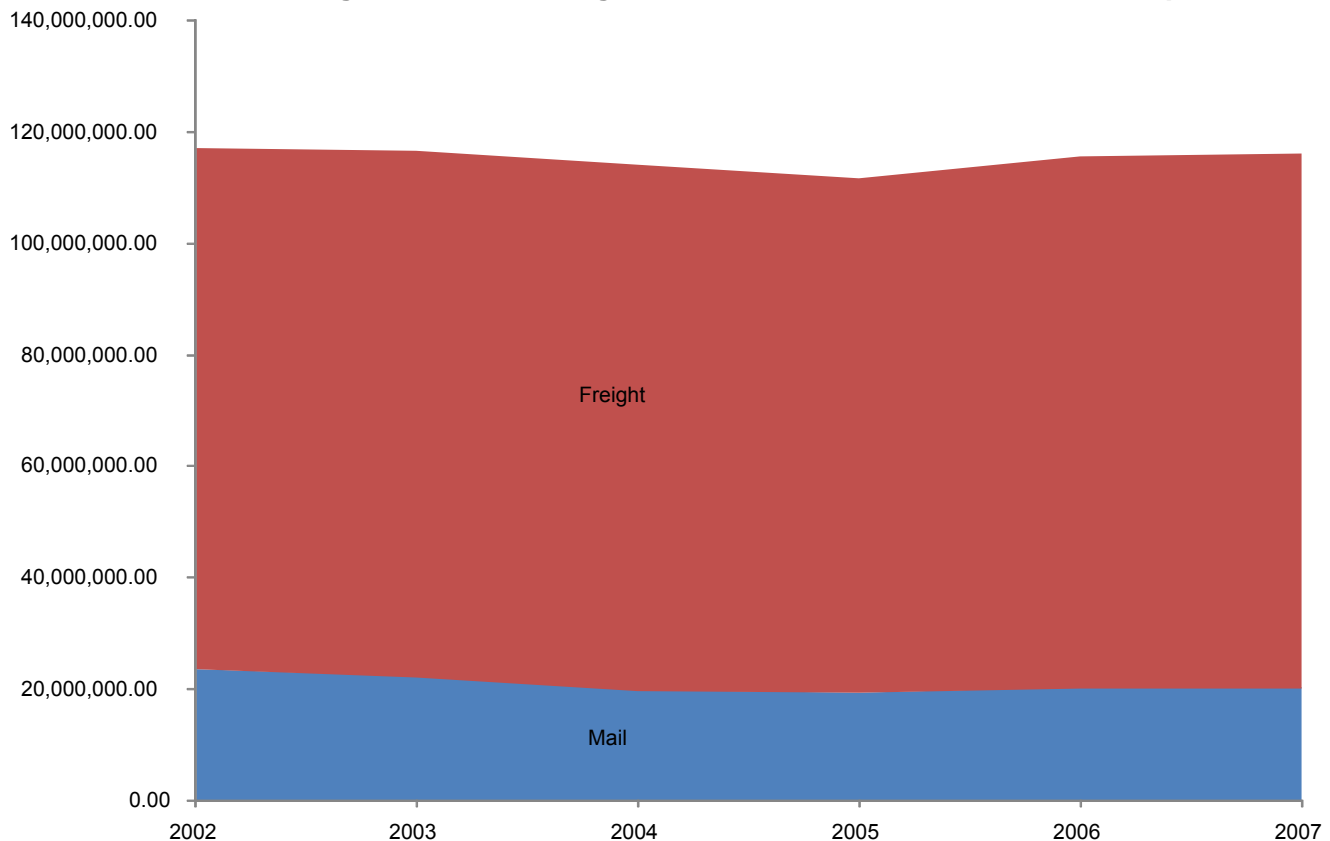
¹⁵ Source: Capital Region Airport Commission.

From a longer historic point of view, Richmond International Airport has grown from total passenger volume of 675,000 in 1968 to 3.6 million in 2007—almost six-fold growth in four decades. Except for a few declines due to economic downturns and the 9/11 terrorist attacks, the airport has been on a growth trajectory. Growth accelerated in the past few years due to reasons identified above. [Fig 4.2 title change]

Figure 4.2: 40-Year History of RIC Passenger Volume (1968-2007)



Cargo volume has been stable over the past six years at RIC. Two primary components are included in cargo volume measures, namely mail and freight. Over this period, mail volume slightly decreased, reflecting the increased usage of electronic mail for communications as well as online payment for bills, while freight volume increased slightly.

Figure 4.3: Total Cargo Volume of Richmond International Airport

5. Economic Impact of Richmond International Airport

This section estimates the economic impact of RIC based on airport operation, business benefits, and visitor spending. Airport operations include all businesses currently operating from Richmond International Airport, such as airlines, aircraft maintenance, car rental, ground transportation, banking, retail, and restaurants. The benefits of the airport to regional businesses are the cost savings and productivity gains enjoyed by regional businesses as a result of travel opportunities at RIC. Economic impact from visitor spending is represented by money spent in the region by RIC passengers that reside outside of the region. Their spending includes food, lodging, entertainment, and transportation. In addition to estimating the direct impact of activities on the region, Chmura also estimates their ripple economic impacts.

5.1. Economic Impact of Airport Operation

5.1.1. Businesses Located at RIC

As shown in Table 5.1, more than 50 business enterprises operate from RIC to make air travel possible. Airlines, including commercial passenger airlines, cargo airlines, and various charter operators, are the primary tenants of RIC. Several businesses support air transportation, such as aircraft maintenance, cargo services, and ground handlers. In addition, many businesses serve air travelers in the terminal,

such as car rental, parking, news and gift stores, and restaurants. Richmond International Airport is also home to several government agencies including the Federal Aviation Administration, Transportation Security Administration, U.S. Customs, Virginia Department of Aviation, and the Capital Region Airport Commission, owners and operators of RIC itself.

Table 5.1: Tenants at Richmond International Airport	
Passenger Airlines	Car Rental
Airtran Airways	Avis Rent-A-Car
American Airlines, Inc.	Budget Rent-A-Car
Continental Airlines, Inc.	Dollar Rent-A-Car
Delta Air Lines, Inc.	Enterprise Rent-A-Car
JetBlue Airways	Hertz Rent-A-Car
Northwest Airlines	Thrifty Car Rental
United Airlines	Vanguard Car Rental
US Airways	
Cargo Airlines	Terminal Concessions
BAX Global	Delaware North Company
Federal Express	The Hudson Group
Airborne Express/DHL	Spit-Dye-N-Shine Shop
United Parcel Service (UPS)	Smarte Carte, Inc.
Emery Worldwide	
Charter or Private Passenger Service	Other Tenants
Martinair, Inc.	BB&T Bank
Helo Air, Inc.	Richmond Metro CVB
Dominion Resources	CARGEX Properties, Inc.
Albemarle Corporation	Aviation Facilities Company (AFCO)
Altria	Virginia Aviation Museum
Miami Air	Central Parking System
Fixed Base Operators	Ground Transportation
Million Air, Inc.	CMC Limousine Inc.
Aero Industries, Inc.	Groome Transportation
Richmond Jet Center	
Aircraft Maintenance	Government Agency
Continental Express Maint. Hangar	Transportation Security Admin
Trans States Maint. Hangar	Federal Aviation Administration
Aviation Specialist	U.S. Customs Service
	Virginia Department of Aviation
	Virginia Army National Guard
	Capital Region Airport Commission
Aviation Operation Support	
Quantum Aviation Services	
GAT Airline Ground Support	
Prime Flight Services	
Worldwide Flight Services	
Kenco Delivery Service	
Source: Capital Region Airport Commission	

5.1.2. Estimating the Direct Output of RIC Tenants

The annual economic output (sales) of RIC is the sum output of all tenants located at the airport, including airlines, car rental agencies, aircraft maintenance, and other supporting activities. To estimate the economic impact of all tenants located at RIC, Chmura surveyed airport tenants. In the survey, tenants were asked about their employment, annual payroll, and other expenditures during 2007. The expenditure items included supply, equipment, materials, and services. Of 55 airport tenants, about half (27) completed questionnaires. For those tenants not responding, Chmura used the average value of responding businesses in the same category as an estimate. With this information, and combining with average profit margin data from IMPLAN,¹⁶ Chmura calculated the total economic output of the airport operations.

Total employment based at RIC is likely to be 2,526, an estimate created from two sources of information. In June 2008, the Capital Region Airport Commission (CRAC) provided a total badge count of all employees at Richmond International Airport of 2,215. The badge count total does not fully include some tenants at RIC, however, such as car rental companies and the Virginia Army National Guard. Using survey responses from two car rental companies and the market share information of all car tenants, Chmura estimated the employment size of car rental firms at RIC. The size of Virginia Army National Guard was estimated to be the average size of government agencies that returned surveys. Aside from employees based at the airport, the RIC badge count showed that 691 airline crew members and 754 service providers regularly accessed the airport facilities. These two types of employment were not included in the 2,526 figure as they are not based full-time at the airport.

It is estimated that the total direct economic output of the Richmond International Airport amounted to \$196.1 million in 2007.¹⁷ Total wages and salaries amounted to \$88.3 million. In addition to wages and salaries, tenants at the airport also spend about \$104.3 million per year on materials, supplies and equipment, with close to half (48%) of these expenditures spent within the Richmond Region.

¹⁶ IMPLAN model provides profit margin data by industry for the Richmond MSA.

¹⁷ There is a slight time inconsistency in employment. The survey asked about May 2008 employment, but salaries and expenditures were for 2007. The badge count was for June 2008. While it was not possible to receive a badge count for 2007, badge count can be used to approximate the 2007 employment figure, assuming employment at the airport is steady.

Table 5.2: Annual Direct Economic Output of RIC Operations (2007)

	Employment (June 2008)	Wages and Salaries	Other Expenditures	Expenditure in Richmond MSA	Total Output
Aircraft Maintenance	148	\$5.3	\$2.2	78%	\$7.2
Airport Operation Support	312	\$4.9	\$0.3	64%	\$5.7
Car Rental	43	\$0.9	\$6.8	77%	\$9.0
Cargo Airlines	423	\$19.0	\$17.1	45%	\$36.5
Charter/Private Passenger Services	124	\$8.2	\$9.6	27%	\$18.0
Fixed Based Operations	128	\$4.5	\$1.6	78%	\$6.0
Government Agencies	621	\$28.8	\$53.5	45%	\$82.3
Ground Transportation	8	\$0.1	\$3.3	95%	\$4.0
Other Tenants	16	\$0.7	\$0.6	76%	\$1.4
Passenger Airlines	449	\$10.8	\$6.3	45%	\$17.3
Terminal Sales/Concessions	255	\$5.2	\$3.0	16%	\$8.9
Total	2,526	\$88.3	\$104.3	48%	\$196.1

Source: Chmura Economics & Analytics

Among all the tenants at RIC, government agencies are the largest with 651 employees. Eight passenger airlines employ 449 workers while 255 employees work on terminal sales and concessions. Employment at the airport, as well as wages and total output, are comparable in size to Norfolk International Airport.¹⁸

5.1.3. Estimating Ripple Impact of RIC Tenants

All businesses operating at Richmond International Airport will have economic ripple effects throughout the Richmond MSA. Airlines located at RIC, for example, spent \$2.8 million locally to acquire supplies and services according to survey results. As passenger volume increases, airlines purchase more from local suppliers¹⁹ and hire additional workers to meet rising demand. Consequently, changes in passenger volume also have important job implications. Furthermore, as the income of the airline workers rise, they increase their household spending and further enhance multiplier effects in the area.²⁰

Table 5.3 presents the total economic impact (direct, indirect, and induced) of airport operations. The direct impact is estimated to be \$196.1 million per year. The indirect and induced impacts measure the extent to which other businesses in the region benefit from airport operations. The indirect impact of \$49.9 million represents increased spending to businesses supporting the operations of the airport, such

¹⁸ In a 2004 report, it was estimated that Norfolk International Airport had 1,685 employees, with annual wages of \$59.9 million, and total output of \$136.3 million. Passenger and cargo activity at Norfolk International Airport in 2007 essentially matches 2004 activity levels, per the airport's web site at www.norfolkairport.com. Source: "Economic Impact Study-2004 Norfolk International Airport," by Jacobs Consultancy in association with Cordell & Crumley Communication Strategies.

¹⁹ This is called indirect impact.

²⁰ This is called induced impact.

as local suppliers for terminal restaurants and retail shops.²¹ The induced impact of \$96.6 million consists of increased spending by local consumers who are employed by RIC tenants. Beneficiary businesses to this employee spending include hospitals, doctor's offices, and other retailers and restaurants throughout the region. On average, every \$1 of direct impact from RIC has a \$0.75 ripple effect throughout the MSA.

Table 5.3: Spending Impact (\$MM) RIC Operations (2007)				
	Direct Impact	Indirect	Induced	Total Impact
Aircraft Maintenance	\$7.2	\$1.7	\$3.9	\$12.8
Airport Operation Support	\$5.7	\$0.2	\$2.1	\$8.0
Car Rental	\$9.0	\$5.2	\$2.2	\$16.4
Cargo Airlines	\$36.5	\$7.8	\$9.7	\$54.0
Charter/Private Passenger Services	\$18.0	\$2.6	\$4.8	\$25.3
Fixed Based Operations	\$6.0	\$1.3	\$3.2	\$10.5
Government Agencies	\$82.3	\$24.3	\$61.5	\$168.0
Ground Transportation	\$4.0	\$3.2	\$1.4	\$8.5
Other Tenants	\$1.4	\$0.4	\$0.5	\$2.3
Passenger Airlines	\$17.3	\$2.8	\$4.6	\$24.7
Terminal Sales/Concessions	\$8.9	\$0.5	\$2.6	\$11.9
Total	\$196.1	\$49.9	\$96.6	\$342.6
Note: Numbers may not sum due to rounding.				
Source: IMPLAN Pro 2006 and Chmura				

The overall employment effects follow a similar pattern. It is estimated that 2,526 people are directly employed by businesses located at the Richmond International Airport. In addition, 1,105 jobs are expected to be created by firms supporting airport tenants.²² An additional 1,081 jobs are created in the Richmond MSA due to increased wages and consumer spending—bringing the total employment due to the airport to 4,713 jobs. On average, one job at the airport will support another 0.86 jobs in the Richmond metropolitan region.

²¹ The indirect impact here is estimated based on survey results. The IMPLAN model indicates an indirect impact of \$44.1 million. The overall indirect multiplier is very close. The induced impact is estimated with IMPLAN model.

²² Survey respondents reported that their companies have 577 jobs in the Richmond Region to support their operations, the rest are other regional businesses supporting RIC tenants.

Table 5.4: Employment Impact RIC Operations (2007)

	Direct Impact	Indirect	Induced	Total Impact
Aircraft Maintenance	148	12	51	211
Airport Operation Support	312	107	97	516
Car Rental	43	53	16	112
Cargo Airlines	423	276	220	918
Charter/Private Passenger Services	124	81	65	269
Fixed Based Operations	128	10	44	183
Government Agencies	621	46	309	976
Ground Transportation	8	20	2	30
Other Tenants	16	6	7	29
Passenger Airlines	449	293	234	976
Terminal Sales/Concessions	255	202	36	493
Total	2,526	1,105	1,081	4,713
Note: Numbers may not sum due to rounding.				
Source: IMPLAN Pro 2006 and Chmura				

5.2. Economic Benefits to the Business Community

In June 2008, Chmura, with the assistance of the Capital Region Airport Commission, conducted a business survey regarding the role Richmond International Airport plays in the daily operations of regional businesses. The survey was completed by 110 firms employing 92,369 workers. As of the fourth quarter of 2007, the Richmond MSA had 28,541 firms with 604,917 employees.²³ The survey sample represents 12.9% of employment in the Richmond MSA.

²³ Source: Quarterly Census of Employment and Wages (or ES202) data base.

Table 5.5: Business Survey Responses		
Industry Sector	Number of Firms Responded	Employment Represented
Construction and Manufacturing	2	134
Education & Health Services	10	30,747
Finance, Insurance, & Real Estate	25	21,409
Government	10	20,502
Information	4	304
Leisure	2	528
Other Services	13	213
Profession & Business Services	37	2,481
Trade	3	1,058
Transportation, Warehousing & Utilities	4	14,993
Total	110	92,369
Source: Chmura Economics & Analytics		

The survey heavily targeted large employers in the region, thereby requiring adjustments in extrapolating survey results to the Richmond business community at large. In this report, Chmura analyzes survey results by firm size and estimates the MSA-level results using the actual distribution of firm size. Since the survey methodology was not random (see Appendix 2 for details) and since the industry mix of the sample differs significantly from the actual industry distribution in the region, projections shown in this section should be taken as estimates only, to be considered with caution. Where applicable, however, these estimates are compared with alternative data to validate the results.

5.2.1. Usage of RIC by Regional Businesses

The Chmura business survey indicated that regional businesses utilize Richmond International Airport extensively in their business operations. On average, a typical business made 20.4 business trips through RIC in 2007, with larger businesses taking significantly more trips (tables 5.6 and 5.7). Using survey results as an indicator, it is estimated that businesses in Richmond took 582,618 air travel business trips through RIC in 2007.²⁴ Assuming 2007 employment of 604,917 in the Richmond MSA,²⁵ the average regional worker took 1.0 business trips through RIC. This, in turn, translates into 1.16 million business passengers originating from RIC, or about 32%²⁶ of the airport's total passenger volume, an estimate consistent with prior studies. For example, the 2005 study uses the assumption that 60% of RIC passengers were business travelers with 55% of these originating from the Richmond Region—resulting in 33% of all RIC passengers being business travelers from the Richmond Region, very close to the survey projection.

²⁴ The Chmura survey asked about business trips, assuming that each business trip represents two passenger counts—one enplane and one deplane.

²⁵ Source: Quarterly Census of Employment and Wages, Bureau of Labor Statistics.

²⁶ In 2007, the total passenger volume of RIC was 3.62 million.

Table 5.6: Usage of RIC by Businesses in Richmond MSA (2007)

Firm Size	Business Trips / Firm	Business Trips / Worker	Total Trips Through RIC
1-10	6.6	2.1	141,578
11-100	40.6	1.3	256,786
101-500	156.5	0.7	111,131
500+	619.7	0.4	73,122
Total	20.4	1.0	582,618

Source: Chmura Economics & Analytics

Total ticket purchases at Richmond International Airport amounted to nearly \$560 million in 2007, of which \$335.9 million is conservatively estimated to be associated with business travel. Business travelers, assumed to account for about 60% of RIC's traffic, tend to purchase a high proportion of premium or walk-up tickets. Premium tickets, defined as the top ten percent (or top decile) by fare of all tickets purchased averaged \$350 on a one-way basis at RIC in 2007.²⁷

5.2.2. Importance of RIC to the Region's Business Community

The data presented in the previous analysis indicates that businesses in the Richmond Region utilize RIC extensively in business operations. The Chmura business survey also asked businesses to evaluate the importance of the Richmond International Airport to their businesses through three questions: (1) How important is it for your business to have access to an airport? (2) How important is business travel to your business? and (3) How important is airmail and freight service to your business?

It is estimated that 40% of Richmond MSA businesses consider access to the airport very important and another 43% consider it somewhat important (Table 5.7). Access was more important among larger firms in the sample as access was important to every firm with over 500 employees. By sector, access was important to 100% of the education and health services firms in the sample.

Table 5.7: Importance of Access to Airport

Firm Size	Very Important	Somewhat Important	Not Important
1-10	39%	39%	21%
11-100	41%	41%	17%
101-500	36%	50%	14%
501+	52%	48%	0%
Survey Average	43%	43%	14%
Richmond MSA Projected Average	40%	43%	17%

Source: Chmura Economics & Analytics

²⁷ Source: U.S. Department of Transportation Origin & Destination fare data, Capital Region Airport Commission.

Business travel was rated as important by 77% of regional businesses with 32% rating it as very important (Table 5.8). Business travel was more often rated important among large firms, being important among all firms with over 500 employees and 93% of firms with 101 to 500 employees.

Table 5.8: Importance of Business Travel to Local Employers			
Firm Size	Very Important	Somewhat Important	Not Important
1-10	32%	45%	24%
11-100	30%	43%	27%
101-500	43%	50%	7%
501+	46%	54%	0%
Survey Average	36%	47%	17%
Richmond MSA Average	32%	45%	24%
Source: Chmura Economics & Analytics			

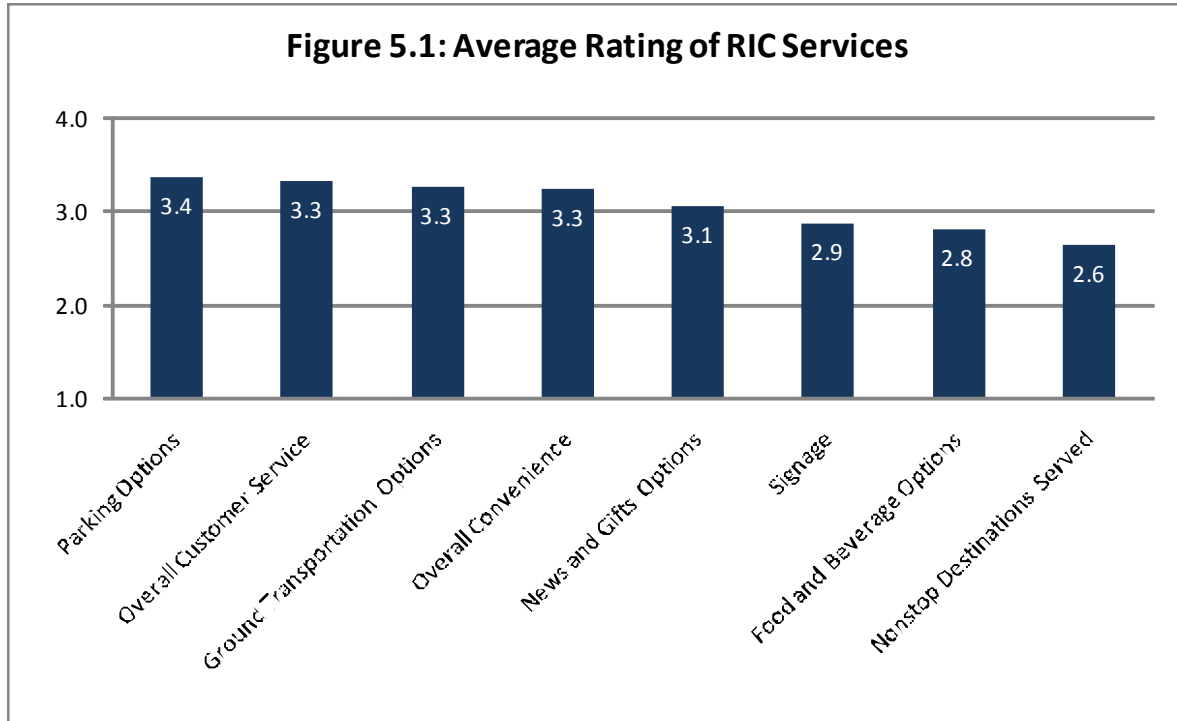
Air mail and freight service were rated as important to 75% of regional businesses, with 34% considering it very important (Table 5.9). Once again, larger businesses consider this service more important than smaller businesses.

Table 5.9: Importance of Freight Service to Business			
Firm Size	Very Important	Somewhat Important	Not Important
1-10	32%	45%	24%
11-100	43%	30%	27%
101-500	29%	43%	29%
501+	54%	33%	13%
Survey Average	40%	38%	21%
Richmond MSA Average	34%	41%	24%
Source: Chmura Economics & Analytics			

5.2.3. Business Satisfaction of Airport Services at RIC

Surveyed businesses were generally satisfied with the services provided at Richmond International Airport. The survey asked respondents to rate the services in the categories of parking, signage, ground transportation, food and beverage options, news and gifts options, destinations served, and overall customer service.

With a rating scale of 4=excellent, 3=good, 2=fair, and 1=poor,²⁸ most of services received an average “good” or close to “good” rating. The service rated highest was parking options with a 3.4 average rating (Figure 5.1). Rated almost as high were overall customer service (3.3), ground transportation options (3.3), and overall convenience (3.3). The lowest rated services were number of nonstop destinations served (2.6), food and beverage options (2.8), and signage (2.9).



5.2.4. Productivity Gains

Convenient access to air transportation allows businesses to quickly move goods and people from one site to the other, saving valuable time and increasing productivity. Travelers based in the Greater Richmond Region, or destined for the area, have numerous airport choices when planning trips. While RIC may be the most convenient airport, and certainly the closest for most users, the competitiveness of air fares clearly influences consumer choices. Prior to the arrival of low-cost service, for example, Richmond International Airport estimated that it lost, or “leaked,” as many as one million passengers a year to other airports in the mid-Atlantic region as travelers felt compelled to look elsewhere in search of lower fares.

This section estimates workforce productivity gains in recent years by analyzing the productivity savings for regional businesses since the entry of new low-cost airlines, AirTran Airways and JetBlue Airways, at RIC. Since 2004, total passenger volume has increased by 1.1 million. Among those, an estimated

²⁸ The numerical scale used in this report is the reverse of that used in the survey. The reversal for this report is for displaying results similar to the popularly used 4-star rating system.

182,472 trips can be attributed to businesses in the Richmond Region. Without competitive fares from RIC, some regional businesses would be more likely to use other airports, such as those in the Baltimore-Washington, D.C. region, Hampton Roads, or even Raleigh-Durham.²⁹ To use these alternative airports, an average business passenger would travel 112.5 miles and spend close to 114 minutes (one-way) to reach a neighboring airport. For a business traveler, that is almost 4 hours of productivity lost for each trip to an alternative airport.

Table 5.10: Alternative Airports to RIC

Airport		Travel Minutes From RIC	Travel Miles from RIC
RDU	Raleigh-Durham	176	164.3
PHF	Newport News/Williamsburg	59	60.8
ORF	Norfolk	89	85.8
BWI	Baltimore/Washington	155	152.5
DCA	Reagan National	112	111.8
IAD	Dulles	127	128.3
Average		114	112.5

Source: Capital Region Airport Commission³⁰

Based on past practices, if reclaimed travelers for Richmond businesses instead drove to alternate airports, the resulting lost productivity would amount to nearly 800,000 hours per year. Chmura estimates that each worker in the Richmond Region could create \$74.7 economic output per hour in 2007.³¹ Consequently, the presence of competitive fares at Richmond International Airport resulted in \$51.8 million of savings related to increased workforce productivity in 2007 alone.

The direct productivity savings also have ripple economic impacts in terms of the indirect and induced impact. To estimate these ripple effects, Chmura utilized the overall economic multiplier of the Richmond MSA. The overall indirect multiplier of the region is 0.30 while the overall induced multiplier is 0.37. Consequently, the additional impact workforce productivity is estimated to be \$15.5 million in indirect and \$18.9 million in induced spending.

5.3. Economic Impact of Visitor Spending

Air travel visitors to the Richmond Region and visitor spending inject millions of dollars annually into the regional economy. Accurately estimating the visitor spending depends on several key assumptions, the

²⁹ It is possible that businesses would utilize train or car for business trips if the Richmond International Airport did not exist. Chmura assumes that many of the business trips are long distance, and air travel is the best option without RIC. In 2007, the top 10 destinations from Richmond International Airport were: New York/Newark, Atlanta, Orlando, Boston, Chicago, Dallas/Fort Worth, Las Vegas, Columbus, Houston, and Denver. None of these destinations are within convenient driving distance. For all airport passengers in 2007, only 2% traveled to destinations within 250 miles of Richmond.

³⁰ This table was provided by CRAC to Chmura for previous 2005 and 2006 studies.

³¹ This is estimated based on IMPLAN 2006 data. In IMPLAN 2006, the Richmond Region had 761,231 workers, creating \$110.9 billion of total output. That translates to \$72.9 output per hour assuming a 40-hour workweek and 50 workweeks in a year. Using a 2.5% inflation rate, 2007 output per worker is estimated to be \$74.7 per hour.

first being the number of visitors to the region. The total passenger volume of RIC reached 3.6 million in 2007, but a large portion of the travelers were local residents. Previous studies showed that about 55.8% of passengers at RIC were residents of the Richmond Region, implying that 44.2% of passengers were from outside the region.³² Assuming most trips are booked on a roundtrip basis, 2007 visitors to the Richmond Region via Richmond International Airport is estimated to have been 803,234.³³

Another key assumption is the average spending of visitors arriving via RIC. Visitor information compiled by the Virginia Tourism Corporation (VTC)³⁴ indicates that in 2007, visitors arriving by air spent an average of four days in the destination, with average daily spending of \$83 (Table 5.11).

Table 5.11: Direct Annual Spending of RIC Visitors (2007)		
Direct Spending Category	Average Spending per Visitor per Day	Total Spending (\$MM)
Food	\$14.90	\$40.5
Shopping	\$5.80	\$17.7
Lodging	\$23.20	\$74.7
Transportation	\$28.20	\$64.4
Recreation	\$3.30	\$10.7
Other	\$7.50	\$24.0
Total	\$83.00	\$231.9

Source: Virginia Tourism Corporation, CRAC

Table 5.12 details the estimated direct spending of these visitors. Chmura estimates that the direct spending by visitors through RIC amounted to \$231.9 million in 2007, with significant spending spread over several broad categories such as lodging, food, transportation, and retail purchases. To avoid double counting, the direct spending at the airport has been excluded from this figure. Specifically, the following spending items at the airport are not included in the \$231.9 million: \$13.4 million from visitor transportation spending,³⁵ \$7.5 million food concession sales, and \$4.5 million retail concession sales.

Spending by airport visitors has additional impact on economic output and employment in the region. Table 5.12 details the economic ripple impact of visitor spending. With direct spending of \$231.9 million, the total economic impact reaches \$372.4 million in the Richmond Region. Among the total impact figure, \$69.4 million is spent on the suppliers of travel-related industries and \$71.1 million is the result of increased employment in travel-related industries.

³² The same assumptions were used from two studies conducted by Chmura for the Capital Region Airport Commission: "Economic Benefits of the Entry of Low Cost Carriers to the Richmond Region," 2005 and 2006.

³³ An argument can be made that some of these passengers may come to the Richmond Region by other means of transportation and should be excluded from the economic impact of the airport. Outside a visitor intercept survey, it is difficult to determine that percentage. All studies reviewed by Chmura included all air visitors to a region in the economic impact of an airport.

³⁴ VTC surveys were also used in two studies conducted by Chmura in 2005 and 2006.

³⁵ Car rental, ground transportation, and travel arrangement at RIC.

Table 5.12: Annual Economic Impact (\$MM) of RIC Visitor Spending (2007 Onward)				
	Direct	Indirect	Induced	Total Impact
Spending Impact	\$231.9	\$69.4	\$71.1	\$372.4
Employment Impact	3,288	544	634	4,465
Note: Numbers may not sum due to rounding.				
Source: IMPLAN Pro 2006 and Chmura				

New jobs are another benefit resulting from visitor spending. Direct visitor spending creates about 3,288 jobs in the Richmond Region, mostly in visitor service businesses such as hotels, restaurants, and transportation. The indirect and induced impact results in 1,178 jobs, bringing total jobs created due to visitor spending to 4,465.

5.4. Economic Impact Summary

In summary, Richmond International Airport directly and indirectly contributes \$801.3 million to the regional economy. Of this, the direct impact amounts to \$479.8 million—\$196.1 million from airport operations, \$51.8 million from business benefits, and \$231.9 million from spending by visitors through the airport. The direct impact also has ripple effects throughout the Richmond Region, totaling \$321.4 million per year. In 2006, the total economic output of the region was \$111 billion,³⁶ with RIC contributing roughly 0.7% of the total economic output of the region. Thousands of jobs are created as a result of RIC. The airport operation directly and indirectly supports 4,713 jobs, and visitor spending supports 4,465 jobs.

Table 5.13: Richmond International Airport Economic Impact Summary				
		Direct (\$MM)	Ripple Effect (\$MM)	Total Impact (\$MM)
Airport Operation	Spending	\$196.1	\$146.5	\$342.6
	Employment	2,526	2,186	4,713
Business Benefits	Spending	\$51.8	\$34.5	\$86.2
	Employment	NA	NA	NA
Visitor Spending	Spending	\$231.9	\$140.5	\$372.4
	Employment	3,288	1,178	4,465
Total Impacts	Spending	\$479.8	\$321.4	\$801.3
	Employment	5,814	3,364	9,178
Source: Chmura Economics & Analytics				

³⁶ Source: IMPLAN 2006.

6. Fiscal Impact of Richmond International Airport

In addition to injecting millions of dollars and creating thousands of jobs in the economy of the Richmond Region, Richmond International Airport also generates significant revenues for state and local governments due to business operations at the airport and increased visitor spending. In this study, only taxes from the direct impacts are estimated.

Chmura estimates five major revenue sources for local governments: sales tax, lodging tax, meal tax, car rental tax, and business, professional, and occupational licenses (BPOL) tax. On the state level, major tax revenues come from sales, income, and car rentals. The estimate provided here is conservative because cost savings and productivity gains for local businesses, which can also result in increased business fees, are not included. Those taxes are not included in the calculation due to the lack of credible information on how local businesses will spend or re-invest their cost savings.

6.1. Fiscal Impact from RIC Tenants

For operations at the Richmond International Airport, tax rates from Henrico County are utilized to estimate the local tax benefits. Since Henrico County does not have a meal tax, the major tax sources are sales, car rental, and BPOL taxes. Virginia has a 5% sales tax rate with 4% going to state government and 1% to local government. Chmura applies the sales tax rate to all retail trade sectors and food service businesses to arrive at an annual sales tax of \$85,212. BPOL taxes are applied to various retail, professional, and personal service businesses located at the airport. The estimated total BPOL tax is \$174,325. The state of Virginia also collects 8% car rental tax based on gross receipts of car rentals. Half of the tax revenue (4%) is distributed to local jurisdictions. Based on total car rental sales, it is estimated that Henrico County can receive annual car rental tax of \$358,212.

The state of Virginia is estimated to receive \$358,212 in car rental tax and \$340,850 annually in the form of sales tax. The thousands of jobs at Richmond International Airport also bring in income tax to Virginia. Based on annual wage and salaries of \$88.3 million, income tax is estimated to be \$4.9 million. All together, Richmond International Airport operations are estimated to bring \$0.6 million to Henrico County and \$5.6 million to Virginia in tax revenue each year.

Table 6.1: Richmond International Airport Tenants Annual Tax Revenue (2007)		
		Tax Revenues
Henrico County	Sales Tax	\$85,212
	BPOL	\$174,325
	Car Rental Tax	\$358,212
State	Sales Tax	\$340,850
	Income Tax	\$4,854,333
	Car Rental Tax	\$358,212
Total Taxes		\$6,171,144
Source: Chmura Economics & Analytics		

6.2. Fiscal Impacts from Visitor Spending

Visitors to the region via Richmond International Airport can also generate millions of dollars of tax revenues for state and local governments. For local taxes, since visitor spending can occur in all Richmond MSA localities (tax rates for meals, lodging, and BPOL tax vary by locality) Chmura first calculates the weighted tax rate using total tourism spending in a locality as weight³⁷ before applying the average rate to the total spending volume.

Table 6.2: RIC Visitor Spending Annual Tax Revenue (2007)		
		Tax Revenues
Visitor Spending	Sales Tax	\$1,328,158
All Regional Governments	Meal Tax	\$893,803
	Lodging Tax	\$5,398,417
	BPOL	\$472,571
	Car Rental Tax	\$592,781
State	Sales Tax	\$5,312,634
	Income Tax	\$3,669,810
	Car Rental Tax	\$592,781
Total		\$18,260,954

Source: Chmura Economics & Analytics

To calculate sales tax revenues for the state and the local governments of the Richmond Region, Chmura applied the sales tax rates for retail, food services, and lodging spending. Visitor spending can generate an additional \$1.3 million in sales taxes annually for local governments and \$5.4 million for the Commonwealth of Virginia.

Virginia also collects 8% car rental tax based on gross receipts of car rentals. Half of the tax revenue (4%) is distributed to local jurisdictions. An estimated annual car rental tax of \$0.6 million will benefit local governments in the Richmond Region and the state government.³⁸

Several localities in the Richmond Region collect meal tax. For example, the City of Richmond collects 6% meal tax, New Kent and Petersburg collect 4% each, but Henrico and Chesterfield County do not have a meal tax. The regional weighted average meal tax is 2.21% and the total annual meal tax for three local governments could total \$0.9 million.

Lodging tax rates are 8% of the gross receipts of hotels and motels for Hanover, Henrico, Chesterfield and Richmond. The rates are 2% for New Kent and 4% for Petersburg while some counties don't have a

³⁷ Total visitor spending in each city and county was downloaded from Virginia Tourism Corporation.

³⁸ Virginia Tourism Corporation provides the visitor spending value on transportation. It also provides information on modes of transportation used by those visitors—such as own cars, rental cars, airplanes, bus, and train. Since 23% of all modes of travel are rental cars, this percentage is used to approximate spending on car rentals.

lodging tax. The regional average is 7.23%. Chmura estimates that the area governments could receive lodging tax revenue totaling \$5.4 million.

Most businesses are subject to local BPOL. BPOL tax rates differ by type of businesses and locality, though Hanover, Powhatan, and Charles City County do not have BPOL taxes. Chmura applies different BPOL tax rates for retail, business, and personal services. The annual BPOL tax revenue for Richmond Region local governments is estimated at about \$0.5 million in 2007.

In addition to the state sales tax and car rental tax mentioned above, the state will also see an increase in income tax due to new job creation as a result of visitor spending. It is estimated that total wages and salaries for those jobs are \$66.9 million. The resulting new state income tax revenue is estimated to be \$3.7 million.

All together, visitor spending can generate \$8.7 million for local governments in the Richmond Region and \$9.6 million for the state government.

7. Other Economic Development Impact

The above analysis details tangible economic benefits generated by Richmond International Airport. The presence of an international airport also has other benefits that are not easily quantified such as boosting tourism and meetings and conventions activity and increasing a region's appeal for relocating and expanding businesses.

Each year, Richmond hosts various conventions. These conventions generate sales in the local economy as convention delegates spend their money in a variety of ways such as lodging, food, entertainment, and car rental. Continued expansion of the airport, with improved access to more destinations and competitive fares, should boost the region's convention and tourism business. These sentiments were also shared by many survey respondents.

Many studies have indicated that the presence of an airport helps attract businesses. A previous study by Chmura on Virginia companies showed that a location close to commercial airports increases the probability of its being selected.³⁹ A study by the Wisconsin Department of Transportation showed that between 1997 and 2001, over 85% of new or expanded manufacturing businesses located within 15 miles of an airport capable of handling corporate jets. In addition, a local airport also provides facilities for emergency medical flights, law enforcement, agricultural spraying, pilot training, and many other important community services. Communities that are readily accessible by air transportation are at a competitive advantage and may realize economic and quality of life benefits that can affect every citizen.

Business communities surveyed by Chmura also recognized the roles Richmond International Airport plays in the overall well-being and growth of the Richmond community. Many businesses pointed out that

³⁹ Source: Southwest Virginia Target Marketing Study 2004, by Chmura Economics & Analytics.

RIC is a great economic development asset, encouraging large employers to come to the region. Many mentioned that RIC helps bring trade shows and conventions to the region, boosting regional tourism. Some also mentioned that the presence of RIC helps recruit and retain a quality workforce. For many visitors, Richmond International Airport is their first impression of Central Virginia. Consequently, a continued improvement of the airport will enhance the region's image and help make Richmond a world-class city. For a more detailed response, please see Appendix 2.

8. Conclusion

Richmond International Airport is a great asset to Richmond's economy. In 2007, the airport generated an estimated \$801.3 million in total economic impact based on:

- \$342.6 million from the operation of the airport,
- \$372.4 million from spending by visitors coming to the region through the airport, and
- \$86.2 million from productivity gains to regional business, compared with 2004.

Nonquantifiable benefits include an enhanced ability of the region to attract firms to relocate or expand into the region as well as attracting conventions.

Local and state governments also receive significant tax revenues because of the airport. It is estimated that the airport (including operations and visitor spending) generates \$9.3 million in local taxes and \$15.1 million for the state government.

A survey conducted for this study found that regional businesses are generally satisfied with the services provided at RIC and heavily rely on the airport for travel. Over 80% of regional businesses responding to the survey consider the airport important or very important to their business. In 2007, total ticket purchases at Richmond International Airport amounted to nearly \$560 million, of which \$335.9 million is conservatively estimated to be associated with business travel.

The economic impact of Richmond International Airport is summarized in Table 8.1.

Table 8.1: Richmond International Airport Economic Impact Summary						
		Direct (\$MM)	Ripple Effect (\$MM)	Total Impact (\$MM)	Local Tax (\$MM)	State Tax (\$MM)
Airport Operation	Spending	\$196.1	\$146.5	\$342.6	\$0.6	\$5.6
	Employment	2,526	2,186	4,713		
Business Benefits	Spending	\$51.8	\$34.5	\$86.2		
	Employment	NA	NA	NA		
Visitor Spending	Spending	\$231.9	\$140.5	\$372.4	\$8.7	\$9.6
	Employment	3,288	1,178	4,465		
Total Impacts	Spending	\$479.8	\$321.4	\$801.3	\$9.3	\$15.1
	Employment	5,814	3,364	9,178		

Source: Chmura Economics & Analytics

Appendix 1: Impact Study Glossary

IMPLAN Professional is an economic impact assessment modeling system. It allows the user to build economic models to estimate the impact of economic changes in states, counties, or communities. It was created in the 1970s by the Forestry Service and is widely used by economists to estimate the impact of specific events on the overall economy.

Input-Out Analysis—an examination of business-business and business-consumer economic relationships capturing all monetary transactions in a given period, allowing one to calculate the effects of a change in an economic activity on the entire economy (impact analysis).

Direct Impact—economic activity generated by a project or operation. For construction, this represents activity of the contractor; for operations, this represents activity by tenants of the property.

Overhead—construction inputs not provided by the contractor.

Indirect Impact—secondary economic activity that is generated by a project or operation. An example might be a new office building generating demand for parking garages.

Induced (Household) Impact—economic activity generated by household income resulting from direct and indirect impact.

Multiplier—the cumulative impact of a unit change in economic activity on the entire economy.

Appendix 2: Business Survey Report

A.2.1. Survey Methodology

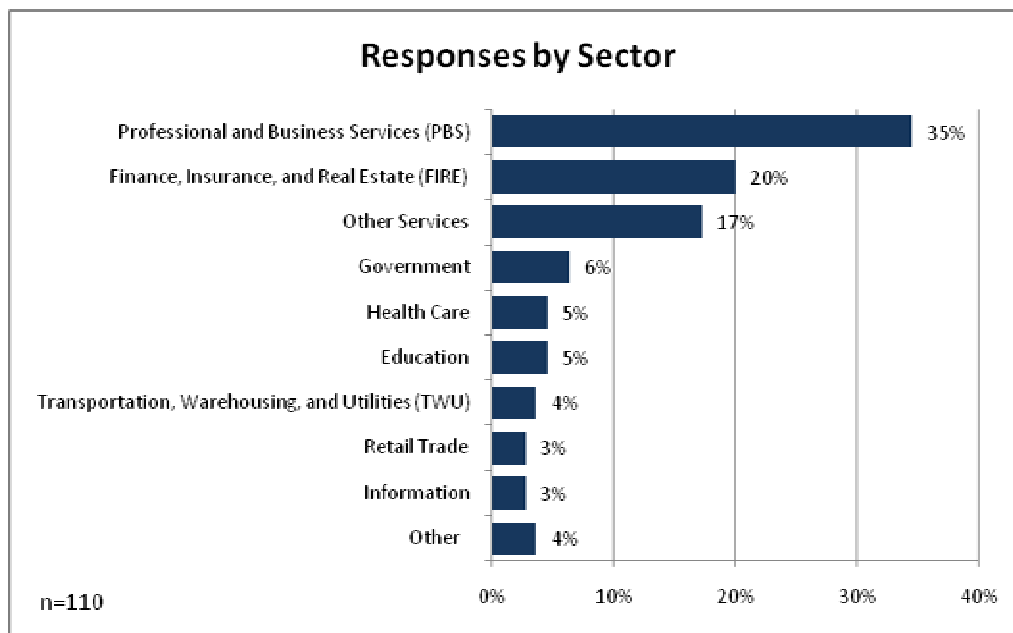
The Capital Region Airport Commission distributed questionnaires to regional businesses by several means such as hard copies at Greater Richmond Chamber events and electronic copies accompanying the airport's *OnTime* e-newsletter. Since the sample obtained was not randomly selected, these results cannot be directly extended to the entire business population of the Greater Richmond Region. Nonetheless, these results describe the survey sample and similar firms which they represent. Results are based on 110 completed surveys.

Note that results in this section represent raw survey results pertaining to the sample only and are not projections on the regional population such as shown in Section 5.

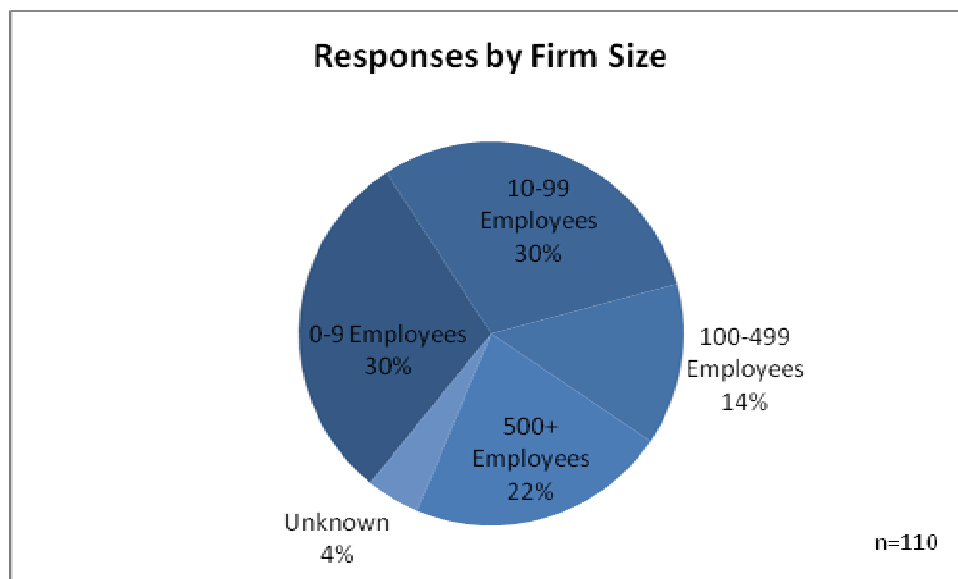
A.2.2. Demographics

Responses by Locality	
Henrico	45%
Richmond	27%
Chesterfield	16%
Hanover	8%
Other/Unknown	4%
Total	100%
n=110	

Most of the responses (72%) were from firms located in either Henrico County or the city of Richmond. Only 4% of the responses were from locations outside of the four principal localities of the airport's core service area (the counties of Chesterfield, Hanover, and Henrico and the city of Richmond).



Firms were asked to identify their type of business which Chmura used to classify respondents by industry sector. The largest respondent sector was professional and business services (35%) followed by finance, insurance, and real estate (20%) and other services (17%). These three sectors each represent smaller portions of the firm population in the region⁴⁰ (PBS: 22%, FIRE: 5%, other services: 7%). Retail trade and health care, on the other hand, represent larger portions of the regional firm population (retail: 10%, health care: 11%) compared to the sample (retail: 3%, health care: 5%).



⁴⁰ The “region” defined here is the four localities of the airport’s core service area: the counties of Chesterfield, Hanover, and Henrico and the city of Richmond.

An analysis of firm size indicates that the respondent sample was heavily weighted toward larger employers. Over one-fifth of employers reported over 500 employees and another 14% reported at least 100 employees. The total number of employees of respondent firms was at least⁴¹ 92,369—equivalent to 18% of the approximate 508,000 employees in the four localities of the airport's core service area.

A.2.3. Importance of Access to Services

How important is it for your business to have access to an airport?	
Very Important	43%
Somewhat Important	43%
Not Important	14%
Total	100%
n=107	

Access to an airport was rated as important to 86% of the respondents with access being very important to 43%. Access was more important among larger firms in the sample, as access was important to every firm with 500 or more employees. By sector, access was important to 100% of the education and health services firms in the sample.

How important is travel to your business?	
Very Important	36%
Somewhat Important	47%
Not Important	17%
Total	100%
n=106	

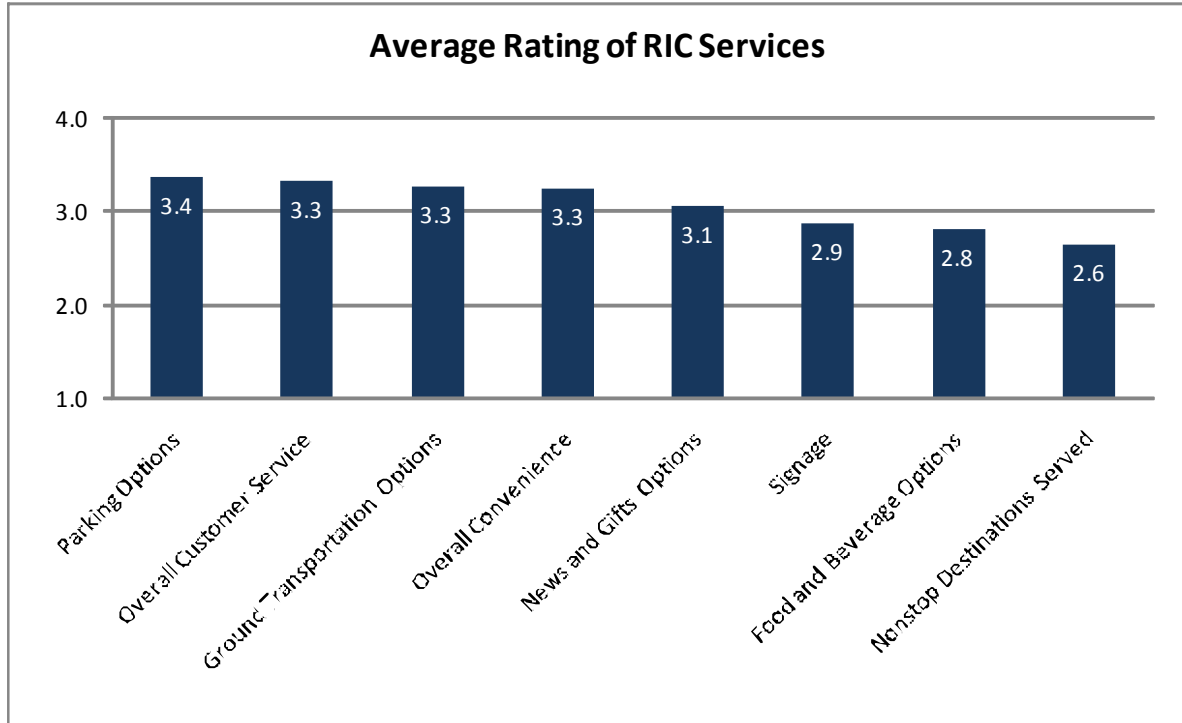
Business travel was rated as important to 83% of businesses in the sample with 36% rating it as very important. Business travel was more often rated important among large firms, being important among 100% of firms with 500+ employees and 97% of firms with 100+ employees.

How important are air mail and freight service to your business?	
Very Important	40%
Somewhat Important	38%
Not Important	21%
Don't Know/Other	2%
Total	100%
n=106	

⁴¹ Some respondents indicated only the bottom range of employment (such as "100+"). For employment estimates in this report, the lower bound of the employment range was used as a conservative estimate.

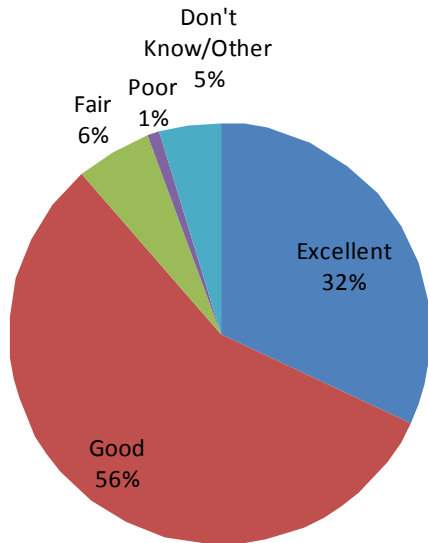
Air mail and freight service were rated as important to 78% of respondents with the importance being elevated among the largest employers. Air mail and freight service were noted as important to 92% of employers with 500+ employees.

A.2.4. Rating of Services

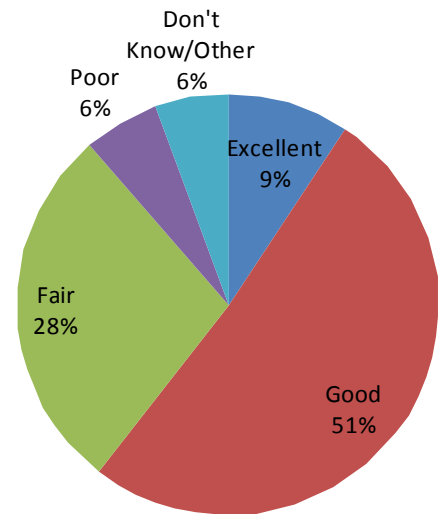


With a rating scale of 4=excellent, 3=good, 2=fair, and 1=poor, the RIC service rated most highly, on average, was parking options with a 3.4 rating. Rated almost as high were overall customer service (3.3), ground transportation options (3.3), and overall convenience (3.3). The lowest rated services were number of nonstop destinations served (2.6), food and beverage options (2.8), and signage (2.9).

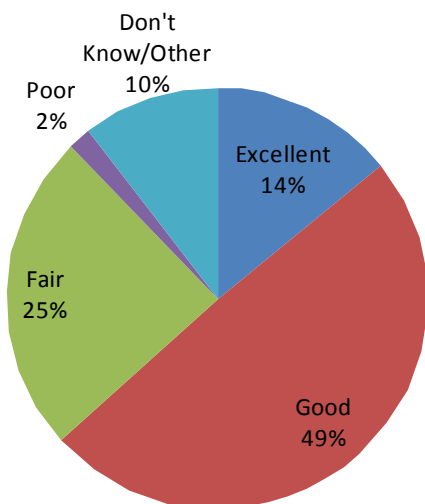
Rating: Overall Customer Service



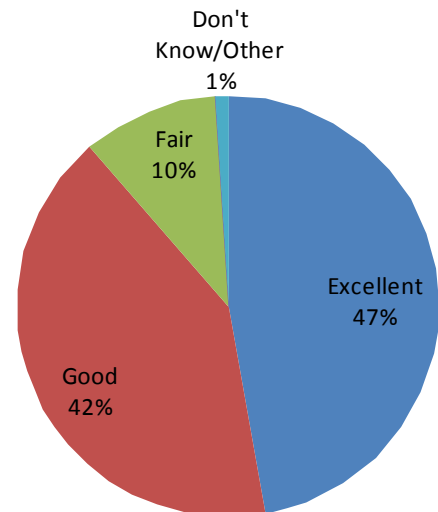
Rating: Food and Beverage Options

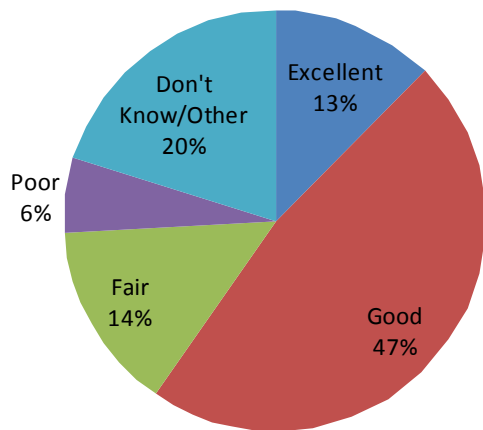
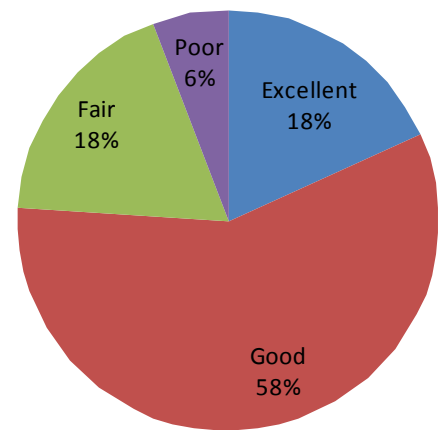
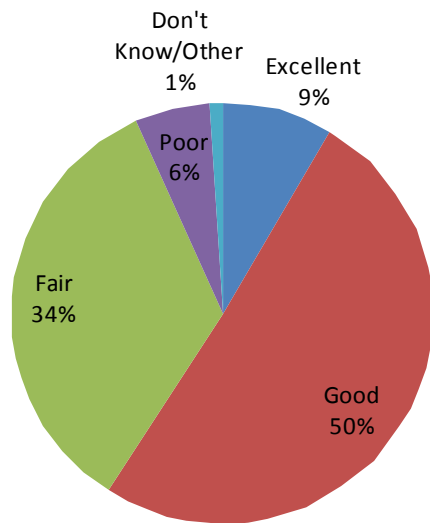
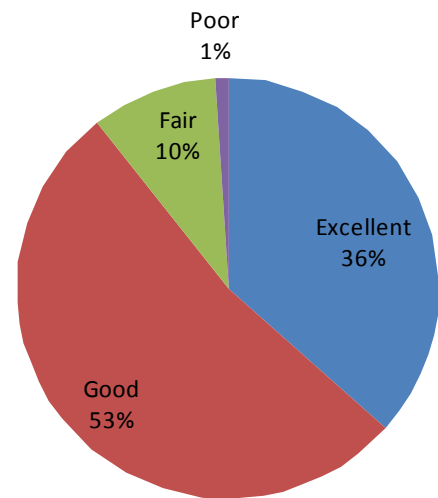


Rating: News and Gift Options



Rating: Parking Options



Rating: Ground Transportation Options**Rating: Signage****Rating: Nonstop Destinations Served****Rating: Overall Convenience**

A.2.5. Use of RIC and Other Airports

Respondent companies indicated taking over 70,000 air-travel business flights in 2007. In three cases, respondents indicated the number of flights taken in 2007 was too high to estimate. In nine cases, respondents indicated a bottom range for the number of flights, such as “100+.” In such cases, the bottom of that range was used as a conservative estimate for the results shown in this section. Also, some firms reported flights for company branch locations outside of Richmond, so these results should not be interpreted as originating entirely from firm locations in the Richmond area.⁴²

Percentage of Flights out of RIC	
100%	52%
75%-99%	28%
50%-74%	10%
25%-49%	5%
1%-24%	4%
0%	1%
Total	100%
n=99	

Air-travel Trips per Employee per Year	
4+	15%
1-3.99	29%
.25-.99	28%
0-.24	28%
Total	100%
n=86	

Over half of respondents (52%) indicated that all business flights originated at RIC with 80% of respondents indicating that at least three-quarters of company flights originated at RIC.

Of respondents indicating both number of flights and number of employees, an average of 1.8 flights were taken per employee in 2007. Fifteen percent of respondents were very heavy users of air-travel in 2007 with four or more flights per employee. Overall, 44% of respondents indicated one or more flights per employee in 2007.

Reasons for not Flying out of RIC	
Ticket Price	52%
Nonstop Service	48%
International Service	33%
Other	21%
n=48	

Of those respondents also using other airports, a little over half (52%) listed ticket price as a reason with nearly half (48%) citing nonstop service as a reason. About half of the 21% of respondents indicating “other” reasons cited location for the reason of using other airports, such as branch location or employee location being closer to other airports.

⁴² Furthermore, one company respondent was located in Fairfax, but that response was excluded from results in this section that is more focused on the behavior of companies centered in the Richmond area.

A.2.6. Other Benefits

Respondents were asked to list “other benefits...RIC provides to the overall well-being and growth of the community.” Many of the respondent employers were enthusiastic (“Great Asset!”) and acknowledging the depth of the airport’s importance (“Economically intertwined with the growth and development of the region.”) Complete responses follow below:

- A good gateway to Central Virginia
- Access is key to recruiting and retaining employees for quality jobs
- Access to the city and convenience for residents all of which makes Greater Richmond a better "product"
- Accessibility to Richmond promotes commerce, tourism, and regional visibility
- As a gateway to the region, RIC sets the tone for how visitors perceive Greater Richmond--our values priorities and amenities
- Attracts new business
- Being a regional partner in connecting the Richmond Area to resources and locations that broaden our perspective to what Richmond can be as a world class city
- Bringing Business to the area
- Bringing in low cost carriers have caused me to fly out of Richmond more
- Catered to hospitality community for tourists, conventions, sporting events, corporate travel
- Competitive Prices, Choices brings business conferences and conventions, this leads to economic vitality. Convenience ease in low benefit but prices is king
- Continual improved facilities, access roads & low cost carriers & non-stop destinations.
- Convenience, Local Support
- Cost of my clients' business travel materially affects whether Richmond and the surrounding region is considered an area worth investing into
- Critical to attracting new businesses to the county
- Easy access and easy parking
- Easy access from rest other cities
- Easy on, Easy off
- Economic development asset, community asset, tourism vehicle—great first impression of community
- Economic Development; Tourism; Convenience for local residents traveling to other destinations
- Economic Impact, Tourism
- Economically intertwined with the growth and development of the region
- Employment
- Everyone that flies into meet with me always has a favorable comment of RIC. This is probably a great overall first impression of doing business in Richmond
- Expanded service and airline choice
- Extremely easy to access and use would like more direct flights
- Facilitates connectivity w/other states, regions, and international sites and facilitates communication and shipping
- Finish the project changes continually create havoc for travelers
- From the Economic Development standpoint, RIC is one of the area's greatest assets.
- Gives Richmond Region a sense of place and easy access for tourists, business people, race fans, etc. People don't realize the economic impact that a well-equipped airport has on a region - it is very significant.

- Great Asset!
- Having a better airport encourages other large employers to come to the region
- Helps bring economic development and growth to region
- Increased interest from businesses to relocate to Richmond
- Jobs (at airport or surrounding businesses) tourism
- Job's, ease of usage, my family and friends like RIC its ease of use and cleanliness
- Key role in attracting and retaining businesses and meetings/conventions
- Low cost carriers provide great option for transportation
- Lower prices and nonstop flights
- Make sure that employees stay until there is nobody in airport
- More affordable than in past will be using new connections to Toronto for trip to Greece (Yeah!), used to go the other airports - no longer need now
- More Parking Space
- Museum
- No benefits. RIC has complete absence of transit service serving airport that makes access to airport highly inconvenient and very costly. Lack of transit is embarrassing and a severe handicap
- Our hospital has recently become a host/show place of technology and services to V*** Medical Systems, largest provider of oncology equipment in world. Having travel excellence/efficiency/cost has and will assist us in attracting visitors from across nation to Richmond
- Providing better and more attractive access to and from the city and region encourages individuals and businesses to want to settle in the region because of the accessibility and proximity to other key business and attractive locations & institutions (VA Beach, Washington DC, Blue Ridge & Allegheny Mountains, shipping ports, military institutions, renowned universities, Busch Gardens, Kings Dominion, Williamsburg (VA). The initial visual impression of the city for those travelling to the city on business for the day and those simply connecting through the city for destinations elsewhere - attractive, well maintained and accommodating facilities gives a similar impression and perception of the city & area for those who will experience the city primarily through their airport usage.
- Quality airport and low cost fares help attract new businesses to region
- RIC needs to offer less connecting flights! To fly anywhere you have to connect somewhere to get to your final destination, which is very frustrating I do not like flying out of RIC because of that reason do not call yourself an International Airport because it is definitely not.
- RIC assists in driving the economic engine for the Greater Richmond area. It is essential RIC aggressively pursues new non-stop service to Western cities (Denver, LA, Las Vegas, Phoenix, and Salt Lake City) with its current LCC's or new carriers. If the LCC's or new carriers cannot be convinced to service these Western cities, RIC must approach its current legacy (who currently have hubs in these cities) to provide non-stop service to these western cities.
- RIC is also a gateway bringing business into the Richmond Business Community
- RIC is such a wonderful facility providing accessibility for the region for our business to promote the region for business to come. I love flying out of RIC, easier to park, less advance time before flight, nice security staff
- Strong air service attracts business
- The ability for families to vacation and see other family members with ease
- The ability to attract business and tourist
- The airport is now very attractive which is a great first impression for travelers

- The airport is small enough and security is efficient enough to allow easy access. Its location makes the airport a viable alternative to airports in more congested areas (such as D.C.) Ease of ingress and egress should be advertised more to draw more conventions and meetings to Richmond Region
- The new cell phone lot is a good idea
- Their extraordinary efforts to inform the community of economic opportunities, and to employ local citizens through direct jobs and contracting activities at RIC.
- Tourism

A.2.7. Sample Survey



Richmond International Airport

2008 Business Survey

The Capital Region Airport Commission has commissioned Chmura Economics & Analytics to study the economic impact of Richmond International Airport (RIC) on Greater Richmond. Your assistance by completing this questionnaire is critical for measuring the benefits offered to local businesses. Be assured that all information will be kept **strictly confidential** by Chmura—your answers will be combined with many others and reported only in aggregate. Please fax or email this completed form by **June 13**. If you have any questions, please call Chmura at 804.239.3276. Thank you for your assistance.

1. Zip code of primary location: _____ 2. Type of business: _____

3. Number of Greater Richmond employees: _____

(Greater Richmond = Amelia, Caroline, Charles City, Chesterfield, Colonial Heights, Cumberland, Dinwiddie, Goochland, Hanover, Henrico, Hopewell, King and Queen, King William, Louisa, New Kent, Petersburg, Powhatan, Prince George, Richmond, and Sussex.)

4. Please rate the following:	Very important	Somewhat important	Not important	Don't know /other
How important is it for your business to have access to an airport?	1	2	3	4
How important is business travel to your business?	1	2	3	4
How important are air mail and freight service to your business?	1	2	3	4

5. Rate Richmond International Airport on the following:	Excellent	Good	Fair	Don't know Poor /other
Overall Customer Service	1	2	3	4 5
Food and Beverage Options	1	2	3	4 5
News and Gift Options	1	2	3	4 5
Parking Options (garage, surface, economy, valet)	1	2	3	4 5
Ground Transportation Options (taxi, shared ride, limo, GRTC)	1	2	3	4 5
Signage (terminal and roadway)	1	2	3	4 5
Destinations Served (All, including nonstop and connecting)	1	2	3	4 5
Overall Convenience – from the Highway to the Jetway	1	2	3	4 5

6. Approximately how many air-travel business trips did your company take in 2007? _____

7. Approximately what percentage of 2007 trips were made from the following airports?

☐ Richmond International Airport _____% ☐ Washington DC area airports _____%

☐ Hampton Roads area airports _____% ☐ Other: _____%

8. What are the primary reasons you choose to fly out of other airports?

☐ Ticket Price ☐ Nonstop Service ☐ International Service ☐ Other (please list): _____

9. What other benefits do you think RIC provides to the overall well-being and growth of the community?

Company Information:

Company name: _____ Form completed by: _____

(Optional) Phone: _____ Fax: _____

Please fax this confidential survey to Chmura at **804.644.2828** or email to **surveys@chmuraecon.com**.



Richmond International Airport

2008 Tenant Survey

The Capital Region Airport Commission has commissioned Chmura Economics & Analytics to study the economic impact of Richmond International Airport (RIC) on the surrounding region through employment, wages, and other benefits. Receiving completed questionnaires is critical for this analysis. Be assured that all information will be kept **strictly confidential** by Chmura—your answers will be combined with many others and reported only in aggregate. Please fax or email this completed form by **June 1**. If you have any questions, please call Chmura at (804) 239-3276. Thank you for your assistance.

Company Information:

Name: _____

Phone: _____ Fax: _____

Form completed by: _____

Employment (current):

1. Number of employees at the Richmond International Airport (RIC): _____

2. Number of employees in Greater Richmond supporting operations at RIC: _____

(Greater Richmond = Amelia, Caroline, Charles City, Chesterfield, Colonial Heights, Cumberland, Dinwiddie, Goochland, Hanover, Henrico, Hopewell, King and Queen, King William, Louisa, New Kent, Petersburg, Powhatan, Prince George, Richmond, and Sussex.)

Expenditures for calendar year 2007:

3. How much did your firm spend locally in support of operations at RIC?

a. Gross annual payroll: \$ _____

b. Other expenditures (supplies, services, materials, equipment, capital improvements): \$ _____

c. Approximate % of these "other expenditures" that were purchased from vendors in Greater Richmond: _____ %

d. Local taxes (property, personal property, sales, meal, and lodging taxes): \$ _____

4. Do you plan to expand your operations at RIC in the next 5 years? If so, please describe your plans (including the potential change in number of employees).

Please fax this confidential survey to Chmura at **804.644.2828** or email to **surveys@chmuraecon.com**.