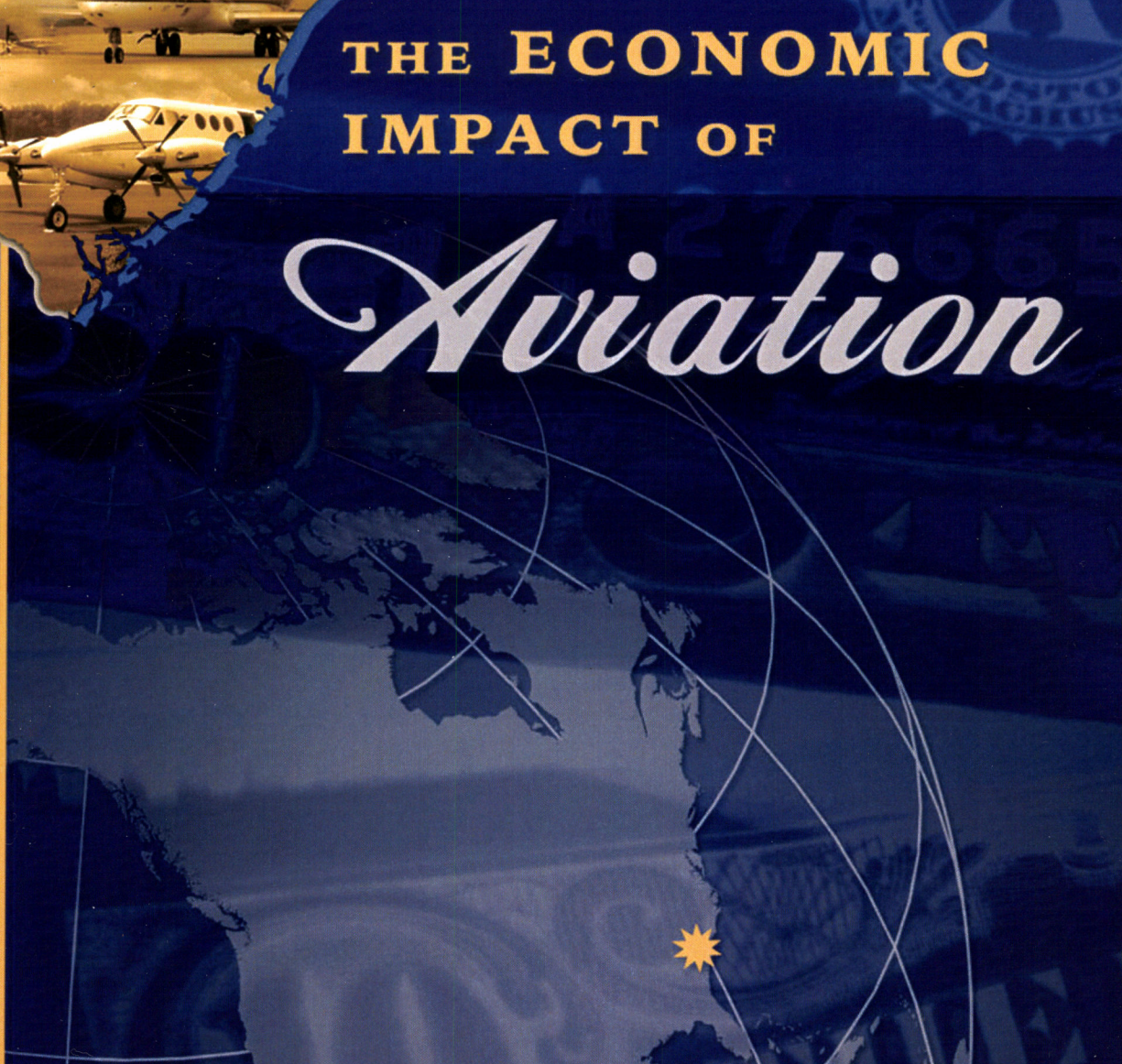




South Carolina

THE ECONOMIC
IMPACT OF

Aviation



**FINAL
REPORT**

MAY 2006



South Carolina Department of Commerce
Division of Aeronautics

Prepared by
Wilbur Smith Associates
in association with
EDR GROUP
and
Franks and Associates

Technical Report

South Carolina Aviation Economic Impact Study

Prepared for:

South Carolina Department of Commerce
Division of Aeronautics

May 2006

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and
Franks and Associates

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The preparation of this document was financed in part through a planning grant from the Federal Aviation Administration (FAA) as approved under the Airport and Airways Improvement Act of 1982. The contents of this report reflect the views of the Consultant, which is responsible for the facts and the accuracy of the data depicted herein, and do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute commitment on the part of the United States to participate in any development depicted therein, nor does it indicate that the proposed development is environmentally acceptable in accordance with applicable public laws.

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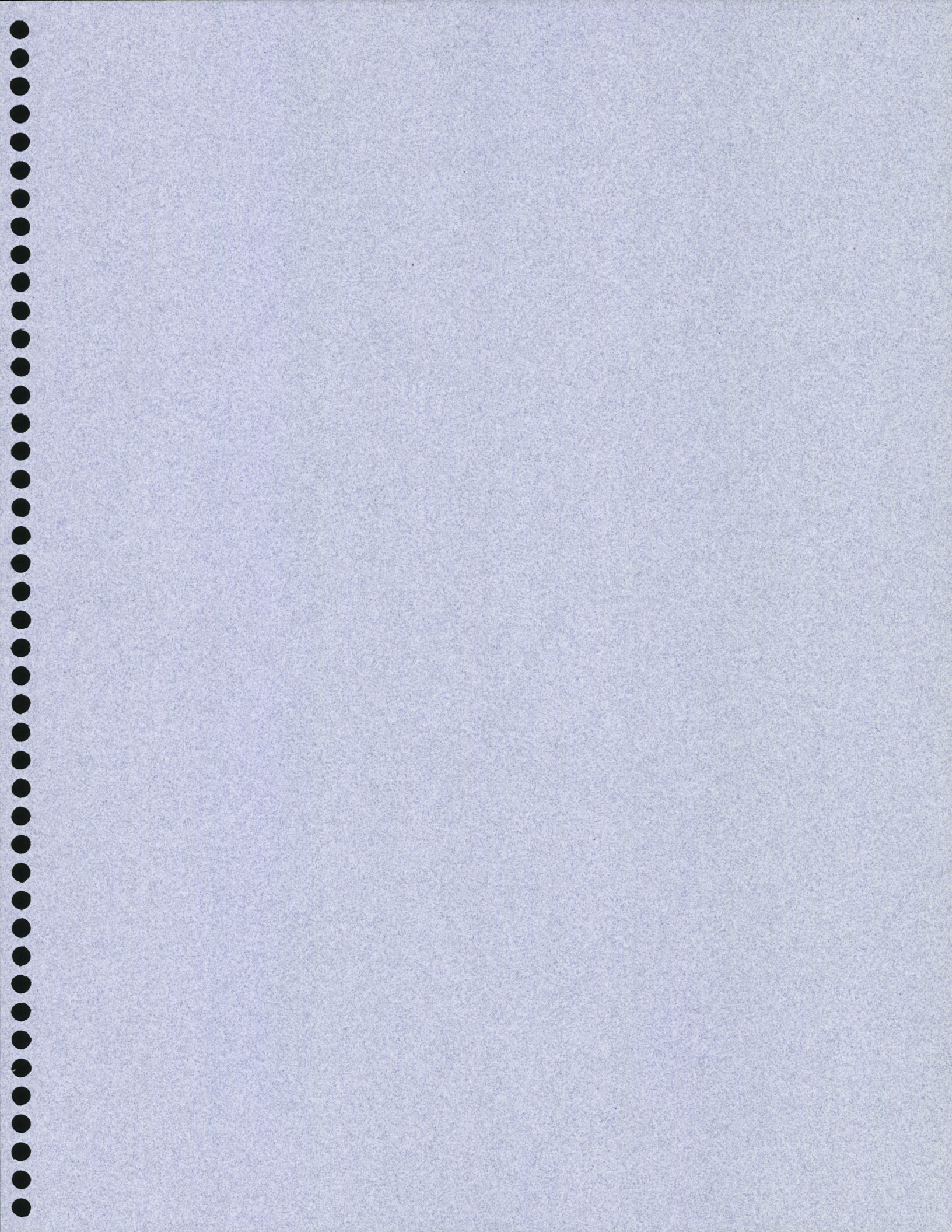
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Chapter 1. Introduction

A strong relationship exists between South Carolina's economy and aviation. In today's global market place, the state's system of commercial service and general aviation airports is essential. South Carolina's diversified system of airports helps to both lead and sustain growth and economic diversification. Airports in South Carolina support the state's economy, and are themselves economic generators. In doing so, residents, businesses, and the state's visitors also rely on the airport system for health, welfare, and safety needs. Further, South Carolina's military airfields are also important to our national security.

The Department of Commerce, through its Aeronautics Office, commissioned this economic impact study to quantify the economic impacts, qualitative benefits, and tax revenues attributable to South Carolina's airports and military airfields. This study was conducted by Wilbur Smith Associates in association with Economic Development Research Group (EDRG) and Franks and Associates.

1.1 South Carolina's Airport System

South Carolina is served by a diversified system of commercial service and general aviation airports. The state's six commercial service and 54 general aviation airports are essential underpinnings to South Carolina's diversified business base, its growing population, and its burgeoning tourism industry. In addition, South Carolina is home to four busy military airfields.

Aviation is generally assigned to three categories: commercial, general aviation, or military. Commercial aviation includes all scheduled airline flights, charter flights, and flights flown by air cargo companies. All other flights by civilian aircraft are classified as general aviation. Aside from commercial and general aviation, some of South Carolina's public airports also accommodate varying levels of activity associated with military aircraft. The four important military airfields are restricted to military activity.

Commercial Service Airports – South Carolina's commercial service airports include those serving Charleston, Columbia, Florence, Greenville-Spartanburg, Hilton Head, and Myrtle Beach. These airports are served by many of the nation's prominent domestic airlines. Commercial aircraft that serve South Carolina airports include larger jets that seat over 100 passengers, as well as many regional jets that typically seat 50 passengers. Non-stop scheduled commercial service is provided to most airline connecting hubs in the Northeast, Southeast and Midwest. In addition, the commercial airports in South Carolina support flights by scheduled charter aircraft, including some that originate in foreign countries. Most of South Carolina's commercial service airports are used by air cargo carriers such as FedEx, UPS, and DHL. It is worth noting that a high percentage of total annual takeoffs and landings at all commercial airports is attributable to general aviation aircraft.

General Aviation Airports – General aviation is the largest segment of aviation in the U.S. General aviation aircraft range from high-powered, sophisticated business jets that can fly from South Carolina non-stop to destinations around the world, to small, single-engine planes flown for recreational use. As noted, even at South Carolina’s commercial service airports, the highest percentage of annual aircraft takeoffs and landings are performed by general aviation aircraft. South Carolina has 54 general aviation airports whose capabilities vary based on airport facilities. Many of South Carolina’s general aviation airports can serve corporate or business jets and most can serve smaller twin-engine aircraft that are often used by businesses.

Military Airfields – South Carolina is home to two Air Force Bases, Shaw AFB and Charleston AFB. It is worth noting that Charleston AFB is co-located with Charleston International Airport, making this airport a joint military/civilian use facility. South Carolina is also home to Beaufort Marine Naval Air Station and to McEntire Air National Guard Station. The economic benefits of these four military airfields are discussed in this report.

1.2 Economic Impacts of Aviation

Through the aviation services they accommodate, airports in South Carolina support thousands of jobs and billions of dollars in annual economic activity. The largest employers in South Carolina use commercial service and general aviation airports to increase their efficiency. Employers throughout South Carolina rely on all airports to provide transportation for people, equipment and supplies. South Carolina’s general aviation and commercial service airports are also critical to the state’s thriving tourism industry. The four military airfields located in South Carolina also make significant annual economic contributions.

Airport Businesses/Tenants – Airports in South Carolina create economic impact in many ways; one of the most visible is through on-airport businesses or tenants. Examples of on-airport business include airlines, flight schools, agricultural sprayers and providers of aircraft maintenance. Restaurants, ground transportation providers, rental car companies, gift shops, and air cargo companies and freight forwarders are other examples. Local, state, and/or federal entities charged with the day-to-day operation and maintenance of an airport or the aviation system are also included in this category. For this study, military and civilian activities that are associated with the four military airfields were also evaluated.

Construction and Capital Improvements – Each year, private, local, state and federal investment helps to support improvement projects at civilian airports throughout the state. In addition, through the Department of Defense (DOD), annual investment is also made to maintain and improve the four military airfields. When a runway is extended or a taxiway built, South Carolina workers are employed. These same projects require the acquisition of supplies and other services which further stimulate local and the state’s economy. Construction projects are responsible for additional aviation related economic activity.

Visitors – Visitors who arrive in South Carolina via both the commercial service and the general aviation airports are responsible for spending and additional economic impacts. Each day, thousands of visitors arrive in South Carolina using one of the airports. Visitors may arrive on a commercial airline flight, a general aviation charter, or a privately owned general aviation aircraft. Once in South Carolina, these visitors spend money for hotels, meals, shopping, entertainment, ground transportation, and other items.

1.3 Study Approach and Scope

This study not only addressed the economic impacts associated with South Carolina airports in terms of jobs and expenditures, it also assessed the qualitative benefits airports bestow on their communities and the state and local taxes collected that associated with aviation activity in the state.

Study Methodology – A methodology approved by the Federal Aviation Administration (FAA) was used to calculate the economic impacts associated with South Carolina's civilian airport system and its four military airfields. Airport related economic impacts were identified for three categories: direct, indirect, and multiplier. Direct impacts result of the provision of aviation services and are associated with on-airport employers, business, and tenants. Indirect impacts are tied to spending by visitors who arrive in South Carolina through one of the public commercial or general aviation airports. As direct and indirect impacts circulate through the local, regional and statewide economies, additional multiplier impacts are created. The economic impacts created by the multiplier effect re-circulate until the benefits ultimately leak outside South Carolina or reach their primary source. For this report, multipliers specific to South Carolina were used to complete the economic impact analysis. Total economic impacts presented in this report, for the state, for each airport, and for each of the four military airfields are the sum of direct, indirect and multiplier impacts.

Tax Benefits From Aviation – The state and each South Carolina county also benefit from taxes levied on aviation and aviation activities. Since military activities and military airfields are generally exempt from state tax, the tax benefits discussion focuses on the commercial and general aviation airports. The cost to maintain and improve South Carolina's commercial and general aviation airports is shared by the federal government, the state, local governments, and various private entities. Through the Airport and Airways Trust Fund, the Federal Aviation Administration provides grants to public commercial and general aviation airports in South Carolina for eligible maintenance and development projects.

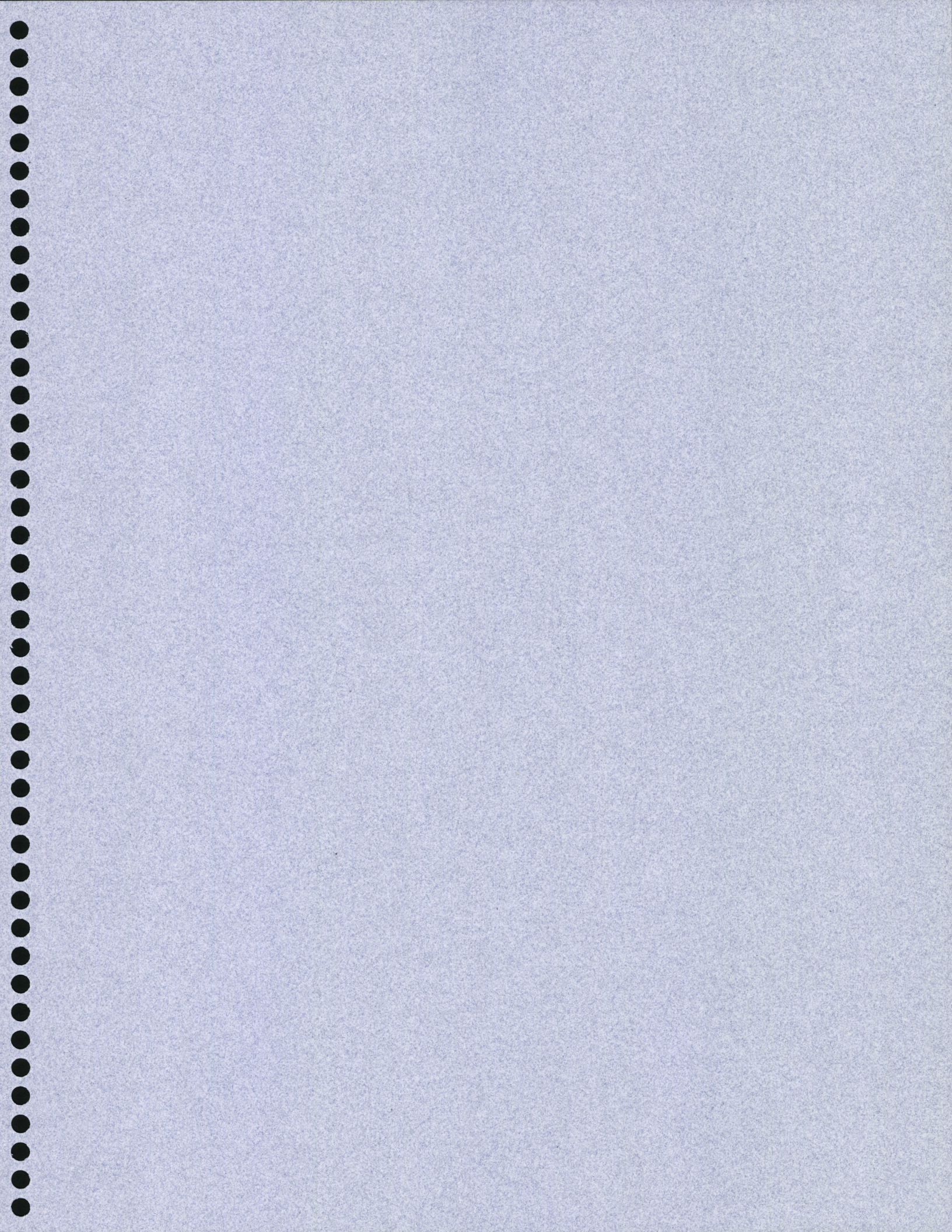
Other Qualitative Benefits – Airports throughout South Carolina help to support and improve the quality of life for all residents, businesses, and visitors. Airports support many activities in the health, welfare, safety, and environmental services category. Information gathered as part of this study, describes how airports in South Carolina support recreational activities, serve as

gateways to many communities and tourist attractions, accommodate agricultural spraying, support air cargo and air freight shipments, help law enforcement, support the military and its operations, provide access in times of emergency, and support medical needs and the medical profession. In short, South Carolina airports touch and improve everyone's quality of life, even those individuals who never directly use one of the commercial or general aviation airports or the many services they support.

Business Reliance on Aviation and Airports – All types of businesses in South Carolina rely on aviation and commercial and general aviation airports for the efficiency they gain using this mode of travel and transportation. As part of this study, over 3,000 other businesses in South Carolina were surveyed to determine how they use aviation to support their business activities. This support may come from the use of scheduled commercial airline service, charter carrier flights, general aviation, air cargo, freight forwarders, or air express shipments.

1.4 Report Outline

Chapter 2 of this report identifies the airports studied, lists based aircraft and aircraft operations by airport, and details the economic impact methodology. Chapter 3 provides relevant background South Carolina demographic data. Chapter 4 presents the study's findings economic impact and qualitative benefits by airport, and Chapter 5 provides an analysis of tax revenue generated by the state's aviation network.



Chapter 2. Economic Impact Methodology

The economic impact of South Carolina's commercial and general aviation airports is calculated using a methodology that evolved over the past two decades and is nationally recognized as the standard for conducting economic impact studies of airports. The methodology is consistent with that advocated by the Federal Aviation Administration (FAA), and explicitly follows FAA-suggested procedures.¹ The study also uses an input/output model with multipliers specific to the State of South Carolina to derive total economic impacts attributable to the study airports.

The methodology is an "impact" approach rather than a "transportation benefits" approach. Therefore, study findings do not address the efficiencies, productivity or travel benefits from air travel. Rather, this effort measures the importance of the airports as an industry, in terms of the employment, earnings and tax revenue they generate, as well as locally produced goods and services which they consume.

All impacts are expressed in annual terms, with all impact calculations based on the latest year for which data are available (generally for the year 2005). All economic impacts are expressed in terms of jobs or dollars. The dollar impacts themselves comprise financial transactions that are of benefit to the residents and businesses of each airport's service area. Care is taken to avoid double counting of impacts. For example, when a fixed based operator's (FBO) lease payment or fuel flowage fee payment to an airport operator is included in the FBO's expenditure impact, it is not included in the airport operator's impact.

2.1 Airports Studied and Airport Activity

The study evaluates 60 public-use airports and four military airfields. Of the 60 public-use airports, six (Columbia Metropolitan, Charleston Air Force Base/International, Greenville-Spartanburg International, Florence Regional, Hilton Head and Myrtle Beach International) are designated as commercial service airports, while the other 54 are classified as general aviation facilities. The locations of the study airports and military airfields are presented in **Exhibit 2-1**. Based aircraft and total annual operations by airport are presented in **Exhibits 2-2** and **2-3**, respectively. A review of aviation operational data at the 60 public-use airports indicates that the top three airports in terms of based aircraft are Greenville Downtown (219), Rock Hill (109) and both Columbia-Owens (108) and Charleston International (108).

¹ "Estimating the Regional Economic Significance of Airports," Federal Aviation Administration, Washington, DC, 1992.

Exhibit 2-1
Study Airports and Military Airfields
 South Carolina Aviation Economic Impact Study

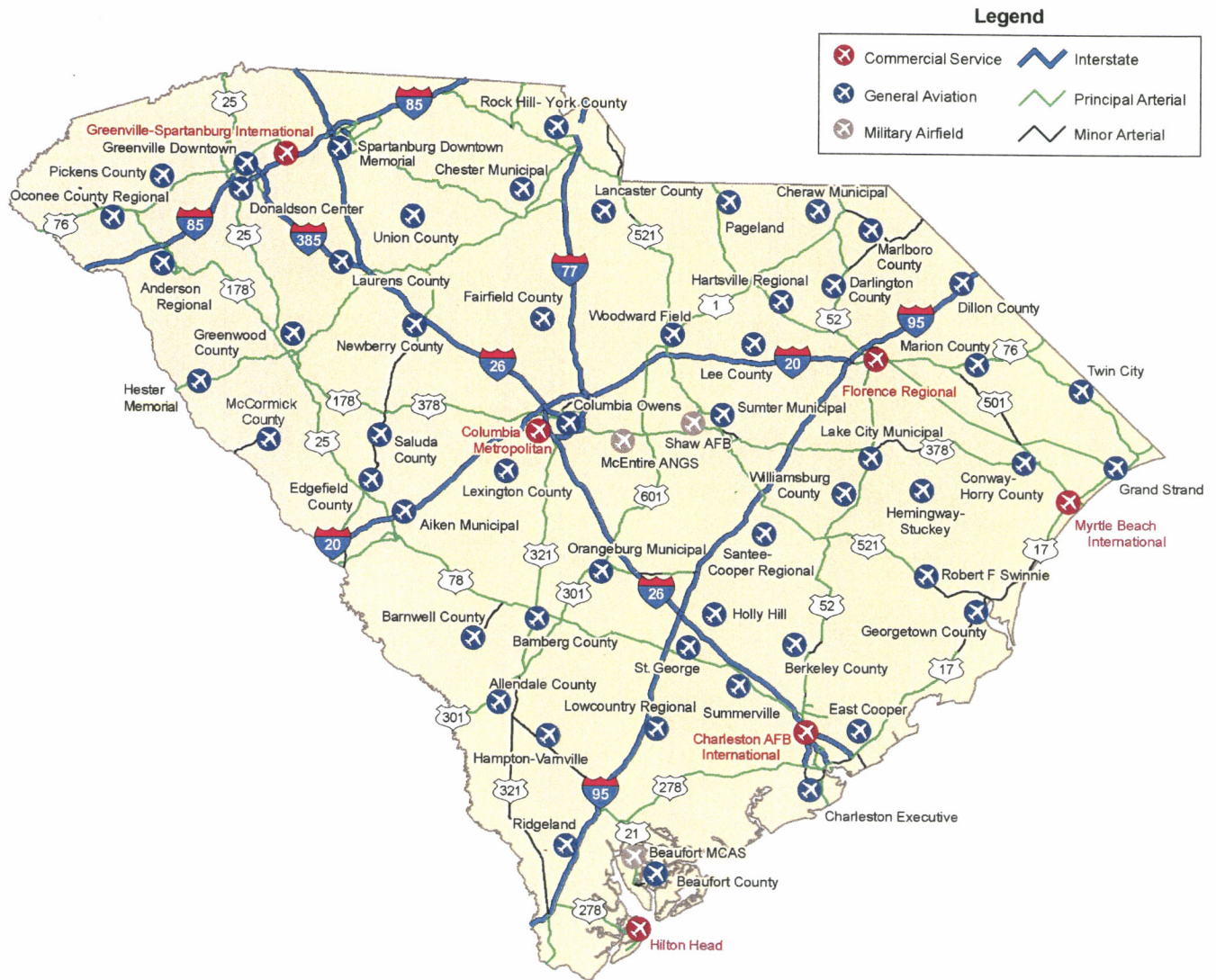


Exhibit 2-2
Based Aircraft by Airport
 South Carolina Aviation Economic Impact Study

Airport by Type	Single Engine	Multi-Engine	Jet	Heli.	Military	Other ¹	Total Aircraft
Commercial Service							
Charleston International	56	27	1	0	24	0	108
Columbia Metropolitan	63	21	18	2	1	0	105
Florence Regional	30	13	1	1	0	0	45
Greenville-Spartanburg Int'l	8	5	8	0	0	0	21
Hilton Head	55	23	8	0	0	1	87
Myrtle Beach Int'l	<u>31</u>	<u>13</u>	<u>1</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>48</u>
Total Commercial	243	102	37	6	25	1	414
General Aviation Service							
Aiken Municipal	44	11	4	0	0	0	59
Allendale County	9	0	0	0	0	0	9
Anderson Regional	61	10	1	5	0	0	77
Bamberg County	4	1	0	0	0	0	5
Barnwell County	18	2	1	0	0	2	23
Beaufort County	33	2	0	0	0	0	35
Berkeley County	40	2	0	1	0	0	43
Charleston Executive	55	10	0	1	0	0	66
Cheraw Municipal	26	1	1	0	0	0	28
Chester-Catawba Regional	26	2	0	0	0	0	28
Columbia-Owens-Downtown	85	22	0	1	0	0	108
Conway-Horry	19	2	0	0	0	0	21
Lexington County (Pelion)	15	0	0	0	0	0	15
Darlington County	15	1	2	0	0	2	20
Dillon County	3	0	0	0	0	0	3
Donaldson Center	68	12	1	1	0	0	82
East Cooper	40	6	0	3	0	0	49
Edgefield County	14	0	0	0	0	12	26
Fairfield County	22	3	0	0	0	0	25
Georgetown County	16	3	0	0	0	0	19
Grand Strand	45	5	2	1	0	0	53
Greenville Downtown	133	57	20	9	0	0	219
Greenwood County	48	12	0	1	0	0	61
Hampton-Varnville	4	0	0	0	0	1	5
Hartsville Regional	21	2	0	0	0	1	24
Hemingway-Stuckey	0	0	0	0	0	0	0
Hester Memorial	0	0	0	0	0	0	0
Holly Hill	7	0	0	0	0	0	7

Exhibit 2-2 (continued)
Based Aircraft by Airport
South Carolina Aviation Economic Impact Study

Airport by Type	Single Engine	Multi-Engine	Jet	Heli.	Military	Other ¹	Total Aircraft
Lake City Municipal	1	0	0	0	0	0	1
Lancaster County	35	3	0	1	0	1	40
Laurens County	16	0	0	0	0	0	16
Lee County	1	0	0	0	0	0	1
Lowcountry Regional	11	1	1	0	0	0	13
Marion County	9	1	0	0	0	0	10
Marlboro County	10	0	0	0	0	0	10
McCormick County	1	0	0	0	0	0	1
Newberry County	20	0	0	1	0	1	22
Oconee County	61	5	2	2	0	3	73
Orangeburg Municipal	25	7	0	0	0	0	32
Pageland	5	1	0	0	0	0	6
Pickens County	39	3	0	1	0	1	44
Ridgeland	45	3	0	0	0	8	56
Robert F. Swinnie	4	0	0	0	0	0	4
Rock Hill-York County	98	9	0	0	0	2	109
Saluda County	0	0	0	2	0	0	2
Santee Cooper Regional	12	2	0	0	0	5	19
Spartanburg Dwntrn. Mem.	74	16	5	2	0	10	107
St. George	1	0	0	0	0	7	8
Summerville	47	7	0	2	0	1	57
Sumter	40	16	0	0	0	0	56
Twin City	8	0	0	0	0	1	9
Union County	20	0	0	0	0	0	20
Williamsburg Regional	6	2	0	0	0	2	10
Woodward Field	35	1	2	0	0	2	40
Gen. Aviation Summary	1,495	243	42	34	0	62	1,876
Total	1,738	345	79	40	25	63	2,290

Source: SC CAIRS database, FAA 5010, Various FAA Tower Counts and interviews

¹Includes gliders and ultra-lights

Exhibit 2-3
Aircraft Operations by Airport
 South Carolina Aviation Economic Impact Study

Airport by Type	General Aviation			Military	Air Carrier	Total
	Local	Air Taxi	Itinerant			
Commercial Service						
Charleston International	4,257	4,261	29,967	0	48,370	86,855
Columbia Metropolitan	19,461	5,361	35,067	4,991	58,638	123,518
Florence Regional	6,258	522	18,114	1,819	4,693	31,406
Greenville-Spartanburg Int'l	727	4,602	11,430	1,776	48,936	67,471
Hilton Head	26,429	6,762	0	202	2,109	35,502
Myrtle Beach Int'l	5,916	1,789	23,043	3,520	30,404	64,672
Total Commercial	63,048	23,297	117,621	12,308	193,150	409,424
General Aviation Service						
Aiken Municipal	38,000	2,500	14,000	500	0	55,000
Allendale County	7,000	450	4,500	200	0	12,150
Anderson Regional	20,000	4,500	28,600	400	0	53,500
Bamberg County	2,250	0	2,150	0	0	4,400
Barnwell County	7,800	0	8,000	500	0	16,300
Beaufort County	17,000	1,000	10,000	0	0	28,000
Berkeley County	25,200	800	11,800	200	0	38,000
Charleston Executive	31,000	1,900	13,000	3,600	0	49,500
Cheraw Municipal	14,000	0	6,500	200	0	20,700
Chester-Catawba Regional	8,000	0	3,000	0	0	11,000
Columbia-Owens-Downtown	29,500	3,500	22,000	1,000	0	56,000
Conway-Horry	68,740	150	3,343	125	0	72,358
Lexington County (Pelion)	8,000	0	4,800	200	0	13,000
Darlington County	7,800	700	4,900	100	0	13,500
Dillon County	3,000	0	2,000	100	0	5,100
Donaldson Center	23,000	3,000	33,000	3,500	0	62,500
East Cooper	17,000	900	7,000	100	0	25,000
Edgefield County	10,000	0	500	0	0	10,500
Fairfield County	8,000	500	4,600	300	0	13,400
Georgetown County	10,000	600	11,300	100	0	22,000
Grand Strand	11,500	1,500	20,000	0	0	33,000
Greenville Downtown	22,759	14,899	34,650	684	0	72,992
Greenwood County	25,000	1,000	13,900	100	0	40,000
Hampton-Varnville	750	0	1,100	0	0	1,850
Hartsville Regional	3,000	0	2,700	300	0	6,000
Hemingway-Stuckey	250	0	50	0	0	300
Hester Memorial	200	0	1,200	0	0	1,400
Holly Hill	1,200	0	500	0	0	1,700

Exhibit 2-3 (continued)
Aircraft Operations by Airport (Continued)
 South Carolina Aviation Economic Impact Study

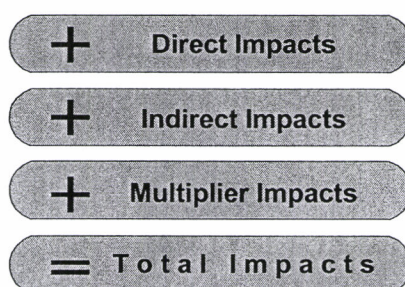
Airport by Type	General Aviation			Military	Air Carrier	Total
	Local	Air Taxi	Itinerant			
Lake City Municipal	1,000	0	1,000	0	0	2,000
Lancaster County	14,350	350	10,000	300	0	25,000
Laurens County	8,700	150	1,000	150	0	10,000
Lee County	750	0	1,100	0	0	1,850
Lowcountry Regional	12,000	0	15,500	500	0	28,000
Marion County	2,000	0	4,300	150	0	6,450
Marlboro County	1,200	60	2,500	0	0	3,760
McCormick County	450	0	900	50	0	1,400
Newberry County	8,500	0	7,000	100	0	15,600
Oconee County	62,000	1,500	6,350	150	0	70,000
Orangeburg Municipal	9,200	170	13,000	50	0	22,420
Pageland	1,300	0	1,000	0	0	2,300
Pickens County	22,800	1,500	40,500	150	0	64,950
Ridgeland	12,000	0	3,000	250	0	15,250
Robert F. Swinnie	500	0	500	0	0	1,000
Rock Hill-York County	27,500	375	12,050	100	0	40,025
Saluda County	5,000	0	3,600	0	0	8,600
Santee Cooper Regional	17,400	0	13,500	100	0	31,000
Spartanburg Dwntr. Mem.	24,200	5,500	37,000	150	0	66,850
St. George	3,000	0	2,500	0	0	5,500
Summerville	17,500	2,500	10,800	200	0	31,000
Sumter	22,000	700	16,000	300	0	39,000
Twin City	1,200	0	2,200	0	0	3,400
Union County	2,500	0	4,000	0	0	6,500
Williamsburg Regional	5,050	0	900	50	0	6,000
Woodward Field	<u>20,000</u>	<u>450</u>	<u>21,500</u>	<u>350</u>	<u>0</u>	<u>42,300</u>
Gen. Aviation Summary	722,049	51,154	500,793	15,309	0	1,289,305
Total	785,097	74,451	618,414	27,617	193,150	1,698,729

Source: SC CAIRS database, FAA 5010, Various FAA Tower Counts and interviews

2.2 Types of Economic Impacts

Airport economic impacts are assigned to one of these categories: Direct impacts, Indirect impacts, and Multiplier impacts. Combined, the three impact types yield the total economic impacts of an airport on its regional economy, as shown in **Exhibit 2-4**, and detailed below.

Exhibit 2-4
Economic Impact Types
South Carolina Aviation Economic Impact Study



2.2.1 Determining Direct Impacts

Direct impacts include expenditures at or near South Carolina's sixty-one public-use airports by firms involved in the provision of aviation services. Those who provide aviation services include the airlines, FBOs, aviation component manufacturing firms, flight and ground schools, the control tower, etc. The direct impacts associated with the provision of aviation services consist of three general classifications:

- Direct Payroll – The annual gross payroll for any employed person at an airport whose job is attributable to a tenant. When possible, these figures also include payroll taxes, unemployment insurance and other related payroll expenses.
- Capital Expenditures – Investment at or near an airport by either the airport operator or by various public and private tenants. Capital expenditures primarily include the costs associated with buildings, structures, runway improvements, terminals, etc. Since capital expenditures fluctuate significantly by year, a five-year average is used in this study when possible.
- Operating Expenses – The annual costs of operation of the airport operator, businesses, tenants and agencies at an airport. These costs include utilities, repair, maintenance, supplies, legal and professional services, etc. Operation expenses made by one entity at an airport to another airport entity are excluded. For example, tenant rent, leases, fees,

etc. made to the airport operator are excluded, because these operator revenues are paid out to operator employees and other operator expenses. To include such expenditures under both the tenant and the airport operator would be to "double-count" the expenditures.

Calculation of direct impacts comprises the collection of background information from all airport operators regarding airline passengers, capital expenditures, aircraft operations, etc. Airport tenant surveys were developed, which sought information on employment, operations, revenue, and expenditures. A copy of the survey is presented in **Appendix B**. Care was taken to recognize expenditures that "leak" to places outside of the impact area, e.g., aircraft parts, and equipment expenditures in cases where the source is obviously external to the state. Survey responses were evaluated to check on reasonableness of results, e.g., payroll per employed person, etc. In each case, care was taken to avoid "double counting" of impacts. Most tenants surveyed responded to at least employment data.

2.2.2 Determining Indirect Impacts

Indirect impacts include expenditures by airport users made in the impact area, such as visitors to the region that arrive via the airport and by travel agents located throughout the state. These economic impacts comprise three categories:

- Air Carrier Visitor Expenditures – Money spent in the regional economy by commercial air passengers.
- General Aviation Visitor Expenditures - Money spent in the regional economy by general aviation passengers and pilots.
- Other Related Business Expenditures – Expenditures by other dependent businesses namely travel agencies.

All commercial and general aviation visitor expenditures were calculated in a manner consistent with the methodology advocated by the Aircraft Owners and Pilot Association (AOPA). That methodology estimates the number of visitors arriving at the airport and multiplies the number of visitors by an estimated average expenditure rate per visitor. Visitors are defined as persons who reside in places external to South Carolina who arrive via an airport. The average expenditure per visitor (e.g., lodging, food, retail etc.), persons per party and average stay, were compiled from three principal sources:

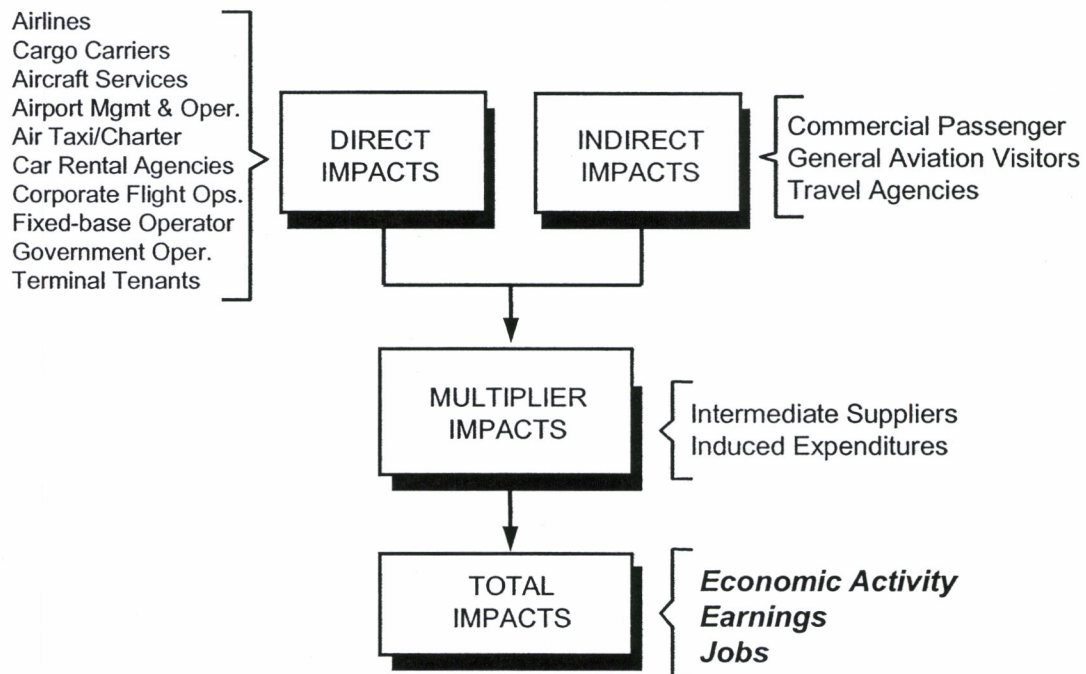
- Departing Air Passenger Survey – Developed and administered by the Wilbur Smith Associates;
- Transient GA Pilot Survey – Developed by Wilbur Smith Associate and administered by the FBOs;

- Databases – Wilbur Smith Associate and other commercial databases, such as the U.S. Department of Transportation OD1A (origin-destination) database

2.2.3 Determining Multiplier Impacts

Direct and indirect economic impacts represent increases in final demand in the impact areas. Such final demand increases, however, do not represent the total economic impact value attributable to South Carolina’s airports. Rather, a secondary or multiplier impact also occurs. The components of these three impact types are shown in **Exhibit 2-5**. The secondary multiplier effect is measured using the IMPLAN² multiplier coefficients for impact areas specific to South Carolina, as explained below.

Exhibit 2-5
Components of Economic Impact Types
 South Carolina Aviation Economic Impact Study



In effect, the multiplier is used to trace money as it flows through the state’s economy. The longer that the money stays in the state, the better off the state is and the higher the multiplier.

² The Minnesota Implan Group’s Regional Input Output Modeling System (IMPLAN)

The multiplier indicates that, as the money is used over and over again, many people and businesses benefit, even if they do not use an airport.

For example, if an airline employee earns \$100 at the airport, and uses it to buy \$100 worth of groceries, he is better off by \$100 because he has \$100 worth of groceries, and the local grocer is better off because he has the \$100. The grocer then pays his employees, the delivery truck operator, etc. all of whom then are slightly better off due to the airport. The multiplier traces this flow of funds until the money ultimately leaks to places outside the impact area, or reaches the primary source.

Secondary Multiplier Model – To estimate the multipliers, The Minnesota Implan Group's Regional Input-Output Modeling System (IMPLAN) is used. Final demand expenditures (i.e., primary direct and indirect impact values) are categorized into industrial codes and applied to a variety of different multiplier classifications, depending on the nature of the final demand activities. The size of the multipliers varies depending on the study area's size (population) and economic base. Typically, the larger and more developed the impact area, the longer the money re-circulates in the regional economy, resulting in a higher multiplier. For this study, multipliers for the State of South Carolina are used.

2.3 Measures of Economic Impact

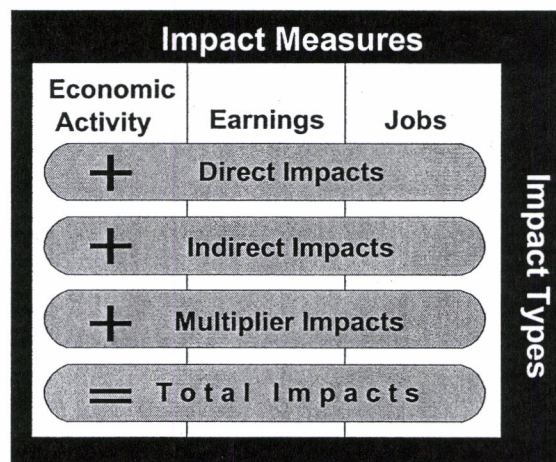
The economic impact of South Carolina's airports are measured in three ways: Economic Activity (Output), Earnings (Payroll), and Jobs (Employment). The total impact measures include the direct as well as the indirect and multiplier impacts as derived using South Carolina IMPLAN multipliers. All three measures of economic impact are useful. However, the monetary measures for Economic Activity and Earnings should not be added together, as explained below.

- Economic Activity (Output) – The value of the aviation primary expenditures (aviation or airport service), plus the secondary multiplier effect (the sum of all of the intermediate goods and services needed to provide aviation services, plus the induced impacts of increased household consumption). Total economic activity (often referred to as "output") equals the sum of intermediate demand, consumption demand, government demand, investment demand, and net export demand. Because Economic Activity includes intermediate demand, it should not be compared to Gross State Product.
- Earnings – Equates to the direct and indirect wages and salaries, other labor income and proprietors' income paid to all employed persons that deliver final demand output and services. Earnings Impacts are part of Economic Activity, so they should not be added to the Economic Activity impact.
- Jobs – Include the number of employees who provide aviation service or manufacture aircraft, plus the aviation-oriented share of those that are employed in sectors that support

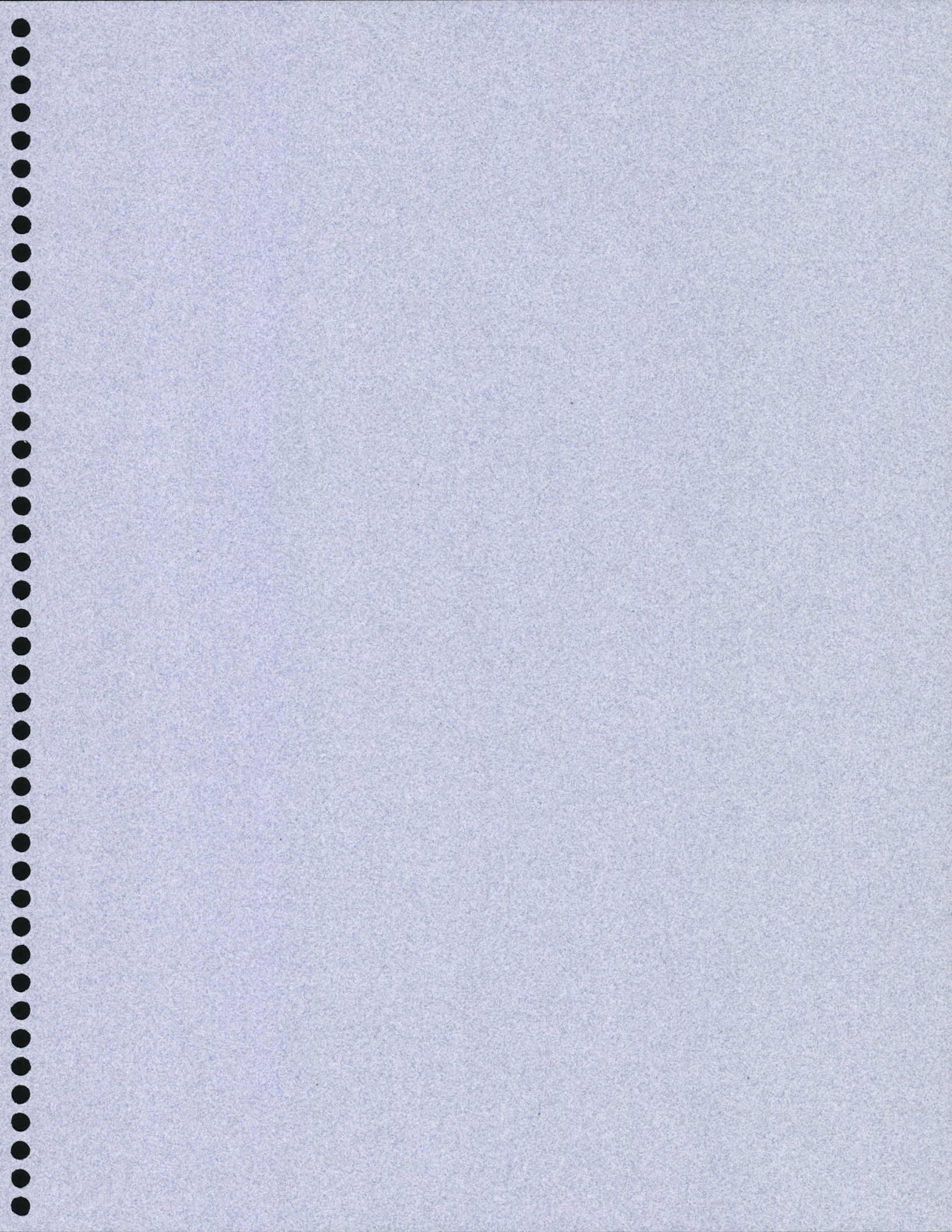
the air passenger (hotels, restaurants, etc.), plus those employed in the industries included in the multiplier effect impacts. Jobs are expressed in terms of annual “full-time-equivalents” (FTEs), where two part-time jobs are represented as one full-time job.

These three impact “measures” and the three impact “types” described earlier are inter-related as shown in **Exhibit 2-6**. The economic activity, earnings, and job impact measures all have associated direct, indirect and multiplier impact types.

Exhibit 2-6
Economic Impact Types and Measures
 South Carolina Aviation Economic Impact Study



The economic impact estimates for South Carolina airports reflect these three impact types and are reported in these three measures. The IMPLAN model also provides information used to calculate the resulting state income taxes associated with the total earnings and jobs impact estimates.



Chapter 3. Demographic & Economic Trends

For decades, South Carolina's robust agricultural, manufacturing and tourism sectors drove the economic growth. The state's relatively low tax burden and largely non-unionized labor force fostered a business environment conducive to manufacturing. However, in the past two decades a fundamental shift in the national economy occurred from one based primarily on its manufacturing, to one now dominated by the services sector. Further, the liberalization of international trade and increased global competition detrimentally affected the state's textile industry, as well as a host of other traditional manufacturing industries. Though the state is currently experiencing a renaissance in its manufacturing sector, largely due to Upstate manufacturers, the service sector now drives the state's economy.

Today, South Carolina's services sector is heavily dependent on transportation infrastructure to sustain current growth trends, while setting the stage for future economic expansion. The provision of safe, efficient air transport enables the state's service sectors, as well as all other economic sectors, to compete economically in an increasingly challenging global environment. This section summarizes recent South Carolina demographic and economic trends in population, employment, and household income. This data provides the context from which to view the airport economic impact findings presented in Chapter 4.

3.1 Population

According to the 2000 national census data, South Carolina ranked 26th among the states with a total population of 4.0 million. This represents a 15.1% increase in statewide population since 1990. Despite rapid urbanization in Columbia, Charleston and Greenville, the state remains predominately rural and sparsely populated with a population density of 54 persons per square mile. Though a number of the state's counties experienced declines in population, the vast majority of the state experienced an upswing in population between 1990 and 2000. Population growth trends are higher for most of the state's 46 counties, as shown in **Exhibit 3-1**.

3.2 Employment

The estimated total employment for the state of South Carolina in 2005 was 2.4 million people. **Exhibit 3-2** identifies employment levels by sector and average annual earnings per employee for 13 major sectors. The sector exhibiting the largest number of persons employed is the state's services sector, with nearly 648,000 employees. The sector showing the highest annual earnings is the Federal Civilian Government (\$58,631); while the sector with the lowest average earnings is the state's agricultural sector (\$6,482). On average, during 2005, the typical South Carolina employee earned approximately \$33,735 annually.

Exhibit 3-1
Population Trends by County – 1990- 2005
 South Carolina Aviation Economic Impact Study

County	1990	2000	2005	Change ('90-'05)	County	1990	2000	2005	Change ('90-'05)
Abbeville	23,960	26,220	26,650	11%	Greenwood	59,650	66,330	68,260	14%
Aiken	122,050	142,780	150,340	23%	Hampton	18,260	21,360	21,730	19%
Allendale	11,750	11,190	10,950	-7%	Horry	145,180	198,030	221,500	53%
Anderson	145,540	166,320	175,320	20%	Jasper	15,530	20,730	21,640	39%
Bamberg	16,880	16,620	16,030	-5%	Kershaw	43,640	52,850	55,300	27%
Barnwell	20,420	23,470	23,670	16%	Lancaster	54,700	61,390	63,650	16%
Beaufort	87,220	121,980	139,910	60%	Laurens	58,420	69,660	71,000	22%
Berkeley	129,370	142,990	151,120	17%	Lee	18,450	20,140	20,420	11%
Calhoun	12,790	15,240	15,610	22%	Lexington	168,910	216,860	236,960	40%
Charleston	295,630	310,670	330,540	12%	Marion	33,930	35,470	35,140	4%
Cherokee	44,660	52,670	54,480	22%	Marlboro	29,730	28,810	28,460	-4%
Chester	32,200	34,130	34,080	6%	McCormick	8,880	9,990	10,500	18%
Chesterfield	38,670	42,910	43,780	13%	Newberry	33,230	36,130	37,010	11%
Clarendon	28,510	32,550	33,230	17%	Oconee	57,700	66,420	69,380	20%
Colleton	34,520	38,350	39,720	15%	Orangeburg	85,050	91,500	91,630	8%
Darlington	62,020	67,480	68,450	10%	Pickens	94,470	111,050	115,750	23%
Dillon	29,120	30,710	31,050	7%	Richland	287,490	321,360	337,490	17%
Dorchester	83,850	96,710	107,150	28%	Saluda	16,470	19,180	19,300	17%
Edgefield	18,520	24,600	24,960	35%	Spartanburg	227,580	254,400	265,050	16%
Fairfield	22,330	23,540	24,020	8%	Sumter	101,270	104,740	106,650	5%
Florence	114,690	125,790	130,060	13%	Union	30,310	29,870	29,200	-4%
Georgetown	46,650	56,100	60,370	29%	Williamsburg	36,770	37,150	35,960	-2%
Greenville	321,860	381,030	403,860	25%	York	132,350	165,700	183,790	39%
					State Totals	3,501,160	4,023,130	4,241,120	21%

Source: Woods & Poole

Exhibit 3-2
Employment and Average Earnings – 2005
 South Carolina Aviation Economic Impact Study

Industry Sector	Employment	Average Earnings
Farm	45,650	\$6,482
Agricultural Services, Other	27,470	\$18,503
Mining	2,900	\$44,586
Construction	157,920	\$31,999
Manufacturing	311,520	\$45,576
Transportation, Communications & Public Utilities	118,960	\$40,671
Wholesale Trade	89,290	\$42,536
Retail Trade	417,940	\$17,275
Finance, Insurance & Real Estate	166,930	\$29,194
Services	647,510	\$26,961
Federal Civilian Government	31,190	\$58,631
Federal Military Government	54,450	\$40,700
State and Local Government	306,460	\$35,443
State Totals/State Average	2,378,190	\$33,735

Source: Woods & Poole

3.3 Unemployment

According to the Department of Labor’s March 2005 unemployment estimates, South Carolina has the nation’s fourth highest rate of unemployment at 6.8% surpassed only by the District of Columbia, Mississippi and Michigan (**Exhibit 3-3**).

Exhibit 3-3
National Unemployment Rates – 2005
 South Carolina Aviation Economic Impact Study

State	Rate	State	Rate
Hawaii	2.8%	Georgia	5.0%
Wyoming	3.1%	Colorado	5.1%
North Dakota	3.3%	Iowa	5.1%
Virginia	3.3%	Arkansas	5.2%
Vermont	3.4%	North Carolina	5.2%
New Hampshire	3.7%	Washington	5.2%
South Dakota	3.7%	West Virginia	5.2%
Delaware	3.9%	Kentucky	5.3%
Nevada	3.9%	Louisiana	5.3%
Nebraska	4.0%	California	5.4%
Idaho	4.2%	Kansas	5.4%
Maryland	4.3%	Pennsylvania	5.4%
New Jersey	4.3%	Illinois	5.6%
Florida	4.4%	Indiana	5.6%
Minnesota	4.4%	Texas	5.6%
Oklahoma	4.4%	Missouri	5.7%
Rhode Island	4.5%	New Mexico	5.9%
Montana	4.6%	Tennessee	5.9%
New York	4.6%	Oregon	6.2%
Wisconsin	4.6%	Ohio	6.3%
Alabama	4.7%	Alaska	6.7%
Arizona	4.7%	South Carolina	6.8%
Maine	4.7%	Michigan	6.9%
Utah	4.8%	Mississippi	7.0%
Connecticut	4.9%	District of Columbia	7.8%
Massachusetts	4.9%	<i>National Average</i>	5.0%

Source: United States Department of Labor

3.4 Household Income

The mean household income and ranking by county for the state of South Carolina is shown in **Exhibit 3-4**. Note that these figures include all income sources such as wages and salaries, as well as proprietors’ income, rental income, dividend income, personal interest income and transfer payments. The county with the highest mean income during 2005 was Beaufort County

with a median household income of \$94,958. The next four ranking counties were Lexington (\$80,284), Charleston (\$80,092), Greenville (\$79,182) and Richland (\$76,057). Other top counties for average household income are in South Carolina’s major urban areas.

Exhibit 3-4
Household Income by County –2005
 South Carolina Aviation Economic Impact Study

County	Household Income	Rank	County	Household Income	Rank
Abbeville	\$61,636	21	Greenwood	\$63,104	19
Aiken	74,181	6	Hampton	55,245	36
Allendale	49,253	45	Horry	64,123	18
Anderson	67,027	13	Jasper	55,683	34
Bamberg	53,012	40	Kershaw	70,604	10
Barnwell	60,319	24	Lancaster	59,647	26
Beaufort	94,958	1	Laurens	58,900	27
Berkeley	66,198	15	Lee	52,962	41
Calhoun	65,749	16	Lexington	80,284	2
Charleston	80,092	3	Marion	51,759	43
Cherokee	56,470	32	Marlboro	52,156	42
Chester	57,194	30	McCormick	48,031	46
Chesterfield	54,865	38	Newberry	55,572	35
Clarendon	54,268	39	Oconee	64,699	17
Colleton	57,236	29	Orangeburg	60,159	25
Darlington	66,485	14	Pickens	61,427	22
Dillon	55,066	37	Richland	76,057	5
Dorchester	68,377	12	Saluda	61,001	23
Edgefield	56,665	31	Spartanburg	68,827	11
Fairfield	58,188	28	Sumter	62,996	20
Florence	73,039	8	Union	56,181	33
Georgetown	70,962	9	Williamsburg	49,522	44
Greenville	79,182	4	York	73,076	7
			State Average	\$62,662	

Source: Woods & Poole; /1 Household income consist of wage and salaries, proprietor’s income, rental income, dividend income, personal interest income, and transfer payments

3.5 Gross State Product

Service-oriented sectors such as finance and insurance, utilities, professional and technical services and information experienced dramatic increases in the past few years (35%, 34% and 28%, respectively), as shown in **Exhibit 3-5**. Growth in these and a number of other service-oriented sectors outpaced the total economy’s expansion (20%), while the state’s historical economic strengths (agriculture and manufacturing) grew relatively little. As detailed in Section

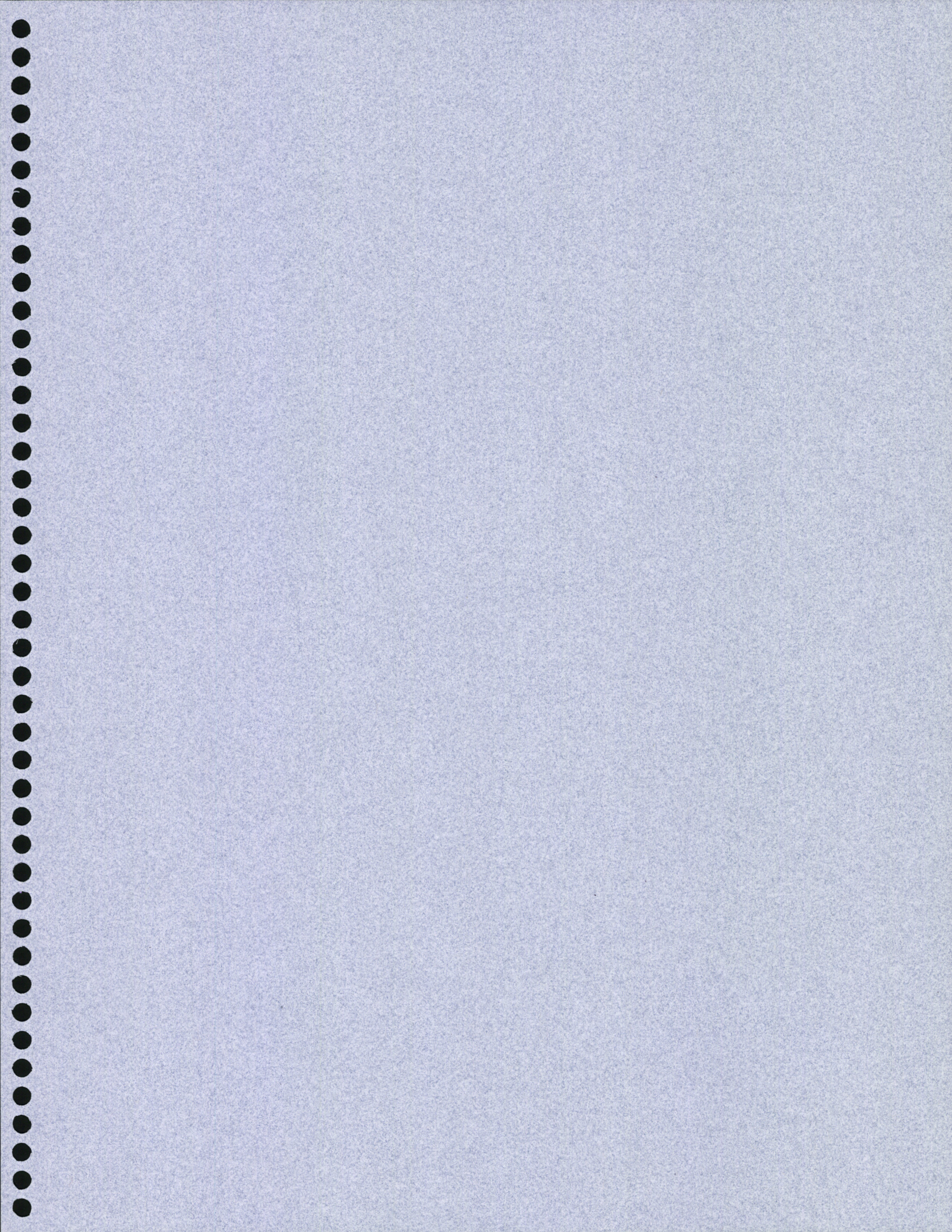
4.6 of this report, these service industries rely on commercial and general aviation. Given this connection between the services sector and aviation, and the continued growth in the services sector, a vibrant aviation system is essential to support of the State's future growth.

Exhibit 3-5
Gross State Product – 2000-2004
 South Carolina Aviation Economic Impact Study
 (Millions of Current Dollars)

Industry	2000	2001	2002	2003	2004	Change (2000-2004)
Agriculture	1,080	1,155	832	1,206	1,198	11%
Mining	175	150	153	157	158	-10%
Utilities	2,935	3,393	3,224	3,575	3,944	34%
Construction	6,303	6,614	6,768	7,184	7,670	22%
Manufacturing	23,487	23,927	24,237	24,822	26,265	12%
Wholesale trade	6,133	6,381	6,713	6,979	7,643	25%
Retail trade	9,245	9,402	9,942	10,416	10,903	18%
Transportation and warehousing	2,812	2,811	2,897	3,011	3,170	13%
Information	2,863	3,031	3,077	3,272	3,608	26%
Finance and insurance	4,933	5,063	5,812	6,228	6,665	35%
Real estate, rental, and leasing	12,411	13,624	14,125	14,351	15,185	22%
Professional and technical services	4,550	5,056	5,262	5,501	5,830	28%
Government	<u>17,451</u>	<u>17,995</u>	<u>18,998</u>	<u>19,872</u>	<u>21,094</u>	21%
State Totals	94,378	98,602	102,040	106,574	113,333	20%

Source: Bureau of Economic Analysis

The data provided in this chapter provides the context with which to interpret the economic impacts derived from the state's airport network. Precise quantification of the state, local and regional economic benefits attributable to aviation should paint a clear picture of the role aviation plays in South Carolina's future economic development.



Chapter 4. Economic Impacts of Aviation in South Carolina

Detailed analysis of South Carolina’s airport network was used to identify the annual economic impacts of airport operations, visitors, industrial, commercial, government and multiplier impacts. Statewide, South Carolina’s public-use airports and military airfields generate an annual impact of \$4.34 billion in economic activity, of which \$1.95 billion is paid in earnings to 65,533 jobs. These annual economic impacts are detailed by aviation activity (civil and military) and impact type (output, earnings and jobs) in **Exhibit 4-1**.

Exhibit 4-1
Economic Impact Summary
 South Carolina Aviation Economic Impact Study

Airport Type	Economic Activity (Output)	Earnings	Jobs
Civil Aviation			
Commercial	\$2,524,434,300	\$1,024,575,800	40,871
General Aviation	<u>417,352,600</u>	<u>178,011,500</u>	<u>5,167</u>
Total Civil	\$2,941,786,900	\$1,202,587,300	46,038
Military	<u>\$1,401,678,600</u>	<u>\$745,637,700</u>	<u>19,495</u>
Total	\$4,343,465,500	\$1,948,225,000	65,533

These impacts reflect the direct provision of aviation services, the indirect use of aviation services, and the multiplier effect of supplier and induced expenditures in the state’s economy. Of these total \$4.34 billion in expenditure impacts, approximately \$1.26 billion (29%) occur at the airports and airfields, another \$1.26 (29%) billion arise from off-airport visitor expenditures, and an additional \$1.82 (42%) billion arises through state multiplier effects. These impacts are detailed below.

4.1 Direct Impacts

Direct aviation related impacts associated with the hundreds of firms and agencies located at and around South Carolina’s commercial and general aviation airports and military airfields generated \$1.26 billion in expenditures. The largest share (61%) of the expenditures is paid in the form of earnings, \$772.4 million, to 19,515 FTE jobs³. Capital expenses of \$74.5 million comprise 6% of total expenditures, and operations expenses of \$411.4 million comprise 33% of the total. The direct job and expenditure impacts presented in **Exhibit 4-2** are discussed below.

³ Two part-time jobs equal one full-time equivalent (FTE) job

Exhibit 4-2
Direct Economic Impacts by Airport
 South Carolina Aviation Economic Impact Study

Airport by Type	FTE Jobs	Expenditures			
		Payroll	Capital	Operating	Total
Commercial Service					
Charleston International	836	\$30,417,300	\$8,437,700	\$33,662,500	\$72,517,500
Columbia Metropolitan	1,526	44,252,700	12,970,100	28,448,000	85,670,800
Florence Regional	135	5,314,300	4,731,100	5,683,700	15,729,100
Greenville-Spartanburg Int'l	813	31,718,700	7,520,800	33,572,400	72,811,900
Hilton Head	93	3,066,800	2,425,000	1,665,000	7,156,800
Myrtle Beach Int'l	690	22,157,800	8,300,200	18,480,900	48,938,900
Total Commercial	4,093	\$136,927,600	\$44,384,900	\$121,512,500	\$302,825,000
General Aviation Service					
Aiken Municipal	12	\$295,000	\$628,300	\$934,700	\$1,858,000
Allendale County	3	65,500	159,100	69,000	293,600
Anderson Regional	55	2,164,500	1,530,400	1,724,000	5,418,900
Bamberg County	0	0	46,100	11,000	57,100
Barnwell County	3	59,800	174,400	778,400	1,012,600
Beaufort County	4	70,000	400,000	313,300	783,300
Berkeley County	4	156,000	1,461,000	165,000	1,782,000
Charleston Executive	25	866,700	799,200	633,400	2,299,300
Cheraw Municipal	3	50,000	138,900	13,200	202,100
Chester-Catawba Regional	4	85,000	187,200	115,000	387,200
Columbia-Owens-Downtown	13	490,000	3,319,300	686,000	4,495,300
Conway-Horry	30	819,700	1,883,100	2,297,000	4,999,800
Darlington County	13	667,100	347,900	449,300	1,464,300
Dillon County	1	20,100	3,000	36,400	59,500
Donaldson Center	1,734	68,406,400	6,655,300	27,268,600	102,330,300
East Cooper	8	336,700	143,600	243,400	723,700
Edgefield County	0	0	0	24,000	24,000
Fairfield County	3	75,000	174,900	70,000	319,900
Georgetown County	15	345,000	485,000	201,700	1,031,700
Grand Strand	45	1,147,300	484,800	1,820,400	3,452,500
Greenville Downtown	134	4,130,800	3,394,200	8,010,400	15,535,400
Greenwood County	4	70,000	326,900	335,000	731,900
Hampton-Varnville	0	0	10,000	15,000	25,000
Hartsville Regional	2	\$18,500	\$254,200	\$44,700	\$317,400
Hemingway-Stuckey	0	0	0	6,700	6,700
Hester Memorial	0	0	0	6,700	6,700
Holly Hill	0	0	0	7,500	7,500

Exhibit 4-2 (continued)
Direct Economic Impacts by Airport
South Carolina Aviation Economic Impact Study

Airport by Type	FTE Jobs	Expenditures			
		Payroll	Capital	Operating	Total
Lake City Municipal	0	0	10,000	16,700	26,700
Lancaster County	4	95,200	161,800	90,500	347,500
Laurens County	2	33,900	157,400	21,200	212,500
Lee County	0	0	151,100	6,700	157,800
Lexington County at Pelion	2	60,000	71,200	15,000	146,200
Lowcountry Regional	7	157,500	1,297,300	417,500	1,872,300
Marion County	3	40,000	0	55,000	95,000
Marlboro County	1	15,000	211,800	30,000	256,800
McCormick County	0	0	0	6,700	6,700
Newberry County	4	74,000	150,000	10,700	234,700
Oconee County	12	372,900	451,100	477,900	1,301,900
Orangeburg Municipal	4	125,000	1,082,000	332,000	1,539,000
Pageland	0	0	155,100	11,400	166,500
Pickens County	3	115,000	270,200	200,000	585,200
Ridgeland	3	55,000	81,100	59,000	195,100
Robert F. Swinnie	0	0	334,200	6,700	340,900
Rock Hill-York County	31	1,260,500	411,500	975,600	2,647,600
Saluda County	8	225,000	125,700	168,200	518,900
Santee Cooper Regional	7	175,000	136,400	76,000	387,400
Spartanburg Dwntrn. Mem.	47	2,083,100	143,900	3,949,000	6,176,000
St. George	2	60,000	177,100	11,700	248,800
Summerville	7	254,000	233,200	146,700	633,900
Sumter	6	197,100	492,100	312,200	1,001,400
Twin City	7	199,700	202,200	74,700	476,600
Union County	4	76,500	193,300	160,000	429,800
Williamsburg Regional	7	211,100	197,600	99,100	507,800
Woodward Field	11	338,500	196,100	373,100	907,700
Gen. Aviation Summary	2,297	\$86,563,100	\$30,100,200	\$54,383,100	\$171,046,400
Military¹					
Beaufort MCAS	3,455	\$144,100,000	na	\$30,400,000	\$174,500,000
Charleston AFB	3,755	155,600,000	na	171,400,000	327,000,000
McEntire ANGS	1,020	42,300,000	na	11,900,000	54,200,000
Shaw AFB	4,895	206,900,000	na	21,800,000	228,700,000
Military Summary	13,125	\$548,900,000	na	\$235,500,000	\$784,400,000
Total	19,515	\$772,390,700	\$74,485,100	\$411,395,600	\$1,258,271,400

Source: Wilbur Smith Associates

¹Department of Defense, Directorate for Information Operations and Reports, 2004; The Economic Impact of Military in SC; A Focus on the Industry Distribution of Economic Activity, 2004

Payroll and Jobs – Earnings paid to people who work at the airports total \$772.4 million annually. This payroll goes to the estimated 19,515 full-time equivalent (FTE) jobs at the airports, where two part-time jobs typically equal one FTE job. In total, 25,424 people are employed at the airports and military airfields, of which 13,497 are actual full-time jobs and 11,929 are part-time. Many of these jobs are high paying, with the average aviation provision employee earning an annual salary of \$39,600 per FTE job; the average civil aviation airport FTE job earns an estimated \$35,000 versus the average FTE military employee who earns \$41,800.

Capital Expenditures – The \$74.5 million in capital expenditures at civilian airports represents physical improvements to airport facilities, either public or private.⁴ Funds may come from private sources, such as the leaseholders who build air cargo sorting facilities at Columbia Metropolitan, or from government agencies such as the South Carolina Division of Aeronautics (SCDOA), the Federal Aviation Administration (FAA), or the local county or municipal governments.

The estimated capital expenditures represent an average of several years. This is because the measurement of new runway or terminal construction projects during a single year could exaggerate an airport's typical annual impacts (since these facilities are used over many years). Similarly, to exclude the major construction projects would under estimate an airport's economic impact. For this reason, the total capital costs evaluated in this study typically comprise an annual average of the capital costs over the past ten years. The annual average estimation approach better reflects the typical annual impact that large capital investment projects have on local communities.

Operation Expenses – Estimated operation expenses at the civilian airports and military airfields total \$411.4 million and include expenditures for utilities, operations, parts and supplies, services and other purchases. Of these, 57.2% (\$235.5 million) occur at military airfields and 42.8% (\$175.9 million) occur at civilian airports. This \$175.9 million is distributed between the six commercial service airports (\$121.5 million) and general aviation airports (\$54.4 million).

4.2 Indirect Impacts

The estimated \$1.26 billion in total indirect economic impacts from South Carolina's airports reflects visitor expenditures of \$1.21 billion at commercial service airports and \$47.6 million at general aviation airports. The following discussion presents the visitor impact findings and summary calculations for the commercial passenger visitor and the general aviation visitor.

⁴ Note the emphasis of this project was civilian, public use airports, not military airfields. For this reason, readily available employment and expenditure data on military airfields in South Carolina was used. This expenditure data did not breakdown estimates between capital and operation expenses.

Commercial Service Airport Visitor Expenditures – Each of the 3.2 million commercial passengers that arrive in South Carolina via one of the six commercial airports typically enplane and deplane. Based on departing passenger surveys conducted at each of the six commercial service airports and U.S. Department of Transportation Origin-Destination Survey data, an estimated 56.5% of South Carolina’s total annual enplaned (boarding) passengers (1.81 million) were visitors to the State. Based on departing passenger surveys, conducted in conjunction with the study, it is estimated that these visitors stayed in South Carolina an average of 6.3 days and spent an average of \$103 per day on hotel accommodation, food, entertainment, and other expenses. Given these assumptions it is estimated that the commercial passenger visitor impact totals \$1.17 million, as shown by airport in **Exhibit 4-3**.

Exhibit 4-3
Commercial Passenger Enplanements and Visitor Characteristics
 South Carolina Aviation Economic Impact Study

	Columbia Metro	Charleston Int'l	Florence Regional	Greenville-Spartanburg	Hilton Head Reg.	Myrtle Beach Int'l	Total
Total Enplaned Passengers	634,100	912,600	35,300	791,400	62,900	768,900	3,205,200
<i>Percent Visitors</i>	<u>48%</u>	<u>59%</u>	<u>48%</u>	<u>45%</u>	<u>78%</u>	<u>71%</u>	<u>56%</u>
Total Visitors	304,368	538,434	16,944	356,130	49,062	545,919	1,810,857
<i>Days in Region per Visitor</i>	<u>7.1</u>	<u>6.3</u>	<u>5.6</u>	<u>4.9</u>	<u>5.2</u>	<u>6.9</u>	<u>6.3</u>
Total Visitor Days (000)	2,161	3,392	95	1,745	255	3,767	11,415
<i>Daily Exp. per Visitor</i>	<u>\$77</u>	<u>\$122</u>	<u>\$105</u>	<u>\$85</u>	<u>\$155</u>	<u>\$106</u>	<u>\$103</u>
Total Annual Expen. (\$000)	\$166,400	\$413,800	\$10,000	\$148,300	\$39,500	\$399,300	\$1,177,300

In addition, commercial service airports accommodate a significant number of general aviation visitors, who also generate significant visitor impacts. Specifically, an estimated 177,098 general aviation visitors arrive at commercial service airports annually. Of these, 64% stay for only a few hours (i.e., day only) and spend an average of \$44 per day; the other 36% stay an average of 2.2 days and spend \$246 per day. Combined, the day only expenditure impacts (\$4.9 million) and overnight-related expenditure impacts (\$34.8 million) result in total GA visitor impacts at commercial service airports of \$39.7 million. The general aviation impacts at commercial service airports is summarized in **Exhibit 4-4**.⁵

⁵ The exhibit also summarizes the general aviation visitor impacts at general aviation airports, which are detailed in the next subsection.

Exhibit 4-4
General Aviation Visitors and Impacts by Airport Type
 South Carolina Aviation Economic Impact Study

	Airport Type		
	General Aviation	Commercial Service	Total
General Aviation Visitors			
Itinerant & Air Taxi Operations	551,900	140,900	692,800
Operations per Landing	<u>2</u>	<u>2</u>	<u>2</u>
Itinerant Landings	275,950	70,450	346,400
Percent Visitors	65.1%	64.9%	65.0%
Visitor Itinerant Landings	179,600	45,700	225,300
People/Aircraft (Pilots & Pass.)	<u>3.2</u>	<u>3.9</u>	<u>3.3</u>
Total Visitors	576,500	177,100	753,600
General Aviation Visitor Impacts			
<i>Day-Only Visitors Impacts</i>			
Percent Day Only	75%	64%	72%
Day Only Visitors	429,800	113,200	543,000
Daily Expend. per Visitor	<u>\$32</u>	<u>\$44</u>	<u>\$35</u>
Day-Only Visitor Impacts	\$13,831,100	\$4,930,700	\$18,761,800
<i>Overnight Visitor Impacts</i>			
Percent Overnight Only	25%	36%	28%
Total G/A Overnight Visitors	146,700	63,900	210,600
Days in Region per Vis.	<u>2.0</u>	<u>2.2</u>	<u>2.1</u>
Visitor Days	291,400	141,500	432,900
Daily Exp. per Vis.	<u>\$116</u>	<u>\$246</u>	<u>\$158</u>
Total Over Vis. Exp.	33,781,900	34,753,800	68,535,700
Total GA Visitor Impacts	\$47,613,000	\$39,684,500	\$87,297,500

General Aviation Airport Visitor Expenditures – The general aviation visitor impact estimates were derived from a Transient Pilot Survey, information collected from fixed-base operators (FBO), discussions with FBOs, and from consultant experience at other airports where transient pilot surveys have been conducted. The results of the analysis, also shown previously in Exhibit 4-4, suggest that annual visitor impacts at general aviation airports total \$47.6 million. Combined with the general aviation impacts that occur at commercial service airports (presented above), the total visitor impact in South Carolina attributable to general aviation totals \$87.3 million.

Of the 692,800 general aviation air taxi and itinerant aircraft operations at South Carolina's airports, a total of 346,400 landings occurred (e.g., one aircraft operation equals one take-off or one landing), of which 65.1% (225,300) were visitors. Data from the survey suggest an average of 3.3 people per aircraft (including both pilots and passengers), resulting in an estimated 753,600 annual general aviation visitors to South Carolina. The majority of these general aviation visitors (72% or 543,000) stay in the region for less than an entire day. Many business-related general aviation visitors typically fly into general aviation airports, conduct business and depart the same day. Given the short time duration, such visitors typically account for only a modest impact, spending an average of \$35 per person-day⁶. Conversely, another 210,600 aviation related visitors (28%) stay overnight and generate larger visitor impacts. The average length of stay of "overnight" general aviation visitors is 2.1 days, with an average daily expenditure of \$158.

Combined, visitor expenditures (food, lodging, retail, etc.) in South Carolina that arise from visitors who arrive by air totals \$87.3 million annually. This includes the impacts associated with both "day-only" and "overnight visitors" at both commercial and general aviation airports.

Total Indirect Impacts – The total indirect impacts associated with visitor impacts at both commercial service and general aviation airports totals \$1.26 million, as shown by airport and activity type in **Exhibit 4-5**; visitor impacts at commercial service airports total \$1.22 million (93%), versus \$47.6 million at commercial service airports (3%). However, the general aviation share of these expenditures, \$87.1 million (including GA impacts at commercial service airports), suggests that general aviation represents nearly 7% of the total visitor impact.

⁶ Note the actual expenditure per visitor at each airport varies significantly

Exhibit 4-5
Indirect Economic Impacts by Airport
 South Carolina Aviation Economic Impact Study

Airport Name	General Aviation	Commercial	Total Indirect
Commercial Service			
Charleston International	10,326,600	\$413,840,400	\$424,167,000
Columbia Metropolitan	7,196,200	166,398,000	173,594,200
Florence Regional	3,029,500	9,963,100	12,992,600
Greenville-Spartanburg Int'l	2,430,100	148,328,100	150,758,200
Hilton Head	3,094,300	39,544,000	42,638,300
Myrtle Beach Int'l	<u>13,607,900</u>	<u>399,285,200</u>	<u>412,893,100</u>
Total Commercial	39,684,600	\$1,177,358,800	\$1,217,043,400
General Aviation Service			
Aiken Municipal	1,020,900	\$0	\$1,020,900
Allendale County	289,800	0	289,800
Anderson Regional	2,055,500	0	2,055,500
Bamberg County	15,600	0	15,600
Barnwell County	198,000	0	198,000
Beaufort County	2,288,000	0	2,288,000
Berkeley County	609,500	0	609,500
Charleston Executive	2,956,200	0	2,956,200
Cheraw Municipal	182,000	0	182,000
Chester-Catawba Regional	150,000	0	150,000
Columbia-Owens-Downtown	4,303,100	0	4,303,100
Conway-Horry	161,600	0	161,600
Darlington County	1,634,600	0	1,634,600
Dillon County	19,000	0	19,000
Donaldson Center	2,322,000	0	2,322,000
East Cooper	293,300	0	293,300
Edgefield County	6,300	0	6,300
Fairfield County	127,500	0	127,500
Georgetown County	937,100	0	937,100
Grand Strand	2,438,100	0	2,438,100
Greenville Downtown	4,738,100	0	4,738,100
Greenwood County	885,100	0	885,100
Hampton-Varnville	61,900	0	61,900
Hartsville Regional	75,600	0	\$75,600
Hemingway-Stuckey	1,000	0	1,000
Hester Memorial	43,200	0	43,200
Holly Hill	7,300	0	7,300

Exhibit 4-5 (continued)
 Indirect Economic Impacts by Airport
 South Carolina Aviation Economic Impact Study

Airport	General Aviation	Commercial	Total Indirect
Lake City Municipal	22,100	0	22,100
Lancaster County	1,108,500	0	1,108,500
Laurens County	91,100	0	91,100
Lee County	8,300	0	8,300
Lexington County at Pelion	142,800	0	142,800
Lowcountry Regional	888,900	0	888,900
Marion County	173,500	0	173,500
Marlboro County	77,800	0	77,800
McCormick County	68,600	0	68,600
Newberry County	189,000	0	189,000
Oconee County	2,441,700	0	2,441,700
Orangeburg Municipal	1,011,500	0	1,011,500
Pageland	16,200	0	16,200
Pickens County	5,696,300	0	5,696,300
Ridgeland	50,400	0	50,400
Robert F. Swinnie	10,200	0	10,200
Rock Hill-York County	1,370,600	0	1,370,600
Saluda County	126,900	0	126,900
Santee Cooper Regional	305,100	0	305,100
Spartanburg Dwtn. Mem.	2,656,300	0	2,656,300
St. George	22,500	0	22,500
Summerville	1,246,900	0	1,246,900
Sumter	854,800	0	854,800
Twin City	8,400	0	8,400
Union County	44,900	0	44,900
Williamsburg Regional	53,400	0	53,400
Woodward Field	<u>1,106,300</u>	<u>0</u>	<u>1,106,300</u>
Gen. Aviation Summary	47,613,300	\$0	\$47,613,300
Military			
Beaufort MCAS	na	na	na
Charleston AFB	na	na	na
McEntire ANGS	na	na	na
Shaw AFB	<u>na</u>	<u>na</u>	<u>na</u>
Military Summary	na	na	na
Total	87,297,900	\$1,177,358,800	\$1,264,656,700

4.3 Multiplier and Total Impact Summary

The primary direct and indirect economic expenditures in the airport impact area create demand for support goods and services, and induce re-spending of wages and salaries by airport and visitor industry workers. This “multiplier” effect reflects the supplier and re-spending impacts that arise from the direct and indirect expenditure impacts. In total, annual aviation related impacts total \$4.34 billion in output (i.e., economic activity), with \$1.95 billion in earnings is paid to over 65,500 jobs. The impacts are summarized in **Exhibit 4-6** by measure (output, earnings and jobs), and type (direct, indirect and multiplier).

Exhibit 4-6
Economic Impacts by Airport Type, Impact Measure and Impact Type – 2005
 South Carolina Aviation Economic Impact Study

Impact Measure and Type	Civil Aviation			Military	Total
	Commercial	General Aviation	Total Civil		
Output					
Direct	\$302,825,000	\$171,046,400	\$473,871,400	\$784,400,000	\$1,258,271,400
Indirect	1,217,043,400	47,613,300	1,264,656,700	0	1,264,656,700
Multiplier	<u>1,004,565,900</u>	<u>198,692,900</u>	<u>1,203,258,800</u>	<u>617,278,600</u>	<u>1,820,537,400</u>
Total	\$2,524,434,300	\$417,352,600	\$2,941,786,900	\$1,401,678,600	\$4,343,465,500
Earnings					
Direct	\$136,927,600	\$86,563,100	\$223,490,700	\$548,900,000	\$772,390,700
Indirect	486,272,000	17,677,800	503,949,800	0	503,949,800
Multiplier	<u>401,376,200</u>	<u>73,770,600</u>	<u>475,146,800</u>	<u>196,737,700</u>	<u>671,884,500</u>
Total	\$1,024,575,800	\$178,011,500	\$1,202,587,300	\$745,637,700	\$1,948,225,000
Jobs					
Direct	4,093	2,297	6,390	13,125	19,515
Indirect	20,148	555	20,703	0	20,703
Multiplier	<u>16,630</u>	<u>2,315</u>	<u>18,945</u>	<u>6,370</u>	<u>25,315</u>
Total	40,871	5,167	46,038	19,495	65,533

Impact Breakdown – Review of the job impacts by impact type indicates that total direct impacts account for 19,515 jobs (30%), while the indirect jobs account for 20,703 (31%), and the multiplier account for 25,315 (39%). This generates an aggregate job multiplier of 1.63; which suggests that for every FTE direct and/or indirect job another 0.63 jobs arise in South Carolina associated with supply/support services, or through the respending of earnings.

Review of the job impacts by aviation activity indicates that commercial service airports account for 62% (40,871) of the jobs impacts, while general aviation airports account for 8% (5,167) and military airfields account for 30% (19,495). Breakdown of the earnings and economic activity (output) impact measures indicates a similar distribution between impact types and airport types.

4.4 Total Impacts by Airport

The impact findings for each airport are detailed below, which begins with, a summary of the total impact measures (output, earnings and jobs) by airport, followed by a detailed breakdown of the each impact measure by the three impact types (direct, and indirect/multiplier).

Total Impacts – The total output, earnings and jobs impacts for the 60 civilian airports and the 4 military airfields are summarized in **Exhibit 4-7**. These aggregated figures include the direct, indirect and multiplier impacts, which are disaggregated by impact type in the following tables.

Charleston International (CHS) and Myrtle Beach International (MYR) generate the greatest impacts with output in the \$800 million range, of which over \$300 million is paid in earnings to over 12,000 jobs at both airports. These impacts reflect the extensive aviation service provided at the airports as well as the large share of visitors who arrive by air.

Among general aviation airports, Donaldson Center generates the largest economic impacts with \$222.2 million in output, of which \$103.3 million is paid to 2,430 jobs due to the extensive aircraft services provided by airport tenants. Greenville Downtown also generates substantial impacts with over \$35.2 million in output and 453 jobs.

Output (Economic Activity) Impacts – The total \$4.34 billion in airport related output/economic activity is broken down by the direct, indirect and multiplier impact types in **Exhibit 4-8**. The shown shows that Columbia Metropolitan (CAE) and Greenville/Spartanburg International (GSP) generate significantly larger direct impacts than MYR. However, the huge indirect impacts associated with visitors at MYR far exceed those at CAE and GSP. In fact, the estimated indirect impacts at all commercial service airports (\$1.2 billion) quadruples the direct impacts (\$0.3 billion). This magnitude helps demonstrate the value of South Carolina's airports to the surrounding communities. Conversely, the direct impacts at general aviation airports (\$171.0 million) far exceed the indirect impacts (\$47.6 million) associated with visitor expenditures.

Earnings and Jobs Impacts – The earnings and jobs impacts are also detailed for each airport by the direct and indirect/multiplier components in **Exhibit 4-9** and **Exhibit 4-10**, respectively.⁷ These jobs are reported in terms of full-time-equivalents (FTEs), where two part-time employees are typically reported as a single FTE. Of notable interest is that the greatest number of direct, at-airport jobs (1,734) occur at Donaldson Center, a general aviation airport – not one of the commercial service airports. The high number of employees associated with cargo sorting activities at Columbia Metropolitan Airport, as well as other airport aviation activity, result in its second highest at-airport employment level (1,526).

⁷ Note that the expenditures estimates associated with the indirect visitor impacts does not enable a separate estimate of the associated indirect jobs and indirect earnings for each airport.

Exhibit 4-7
Total Economic Impacts by Airport
 South Carolina Aviation Economic Impact Study

Airport	Output (Econ. Activity)	Earnings	Jobs
Commercial Service			
Charleston International	\$806,457,400	\$333,574,900	13,680
Columbia Metropolitan	421,403,400	164,900,100	6,540
Florence Regional	48,393,600	18,224,100	656
Greenville-Spartanburg Int'l	409,922,100	149,583,000	5,911
Hilton Head	81,804,200	33,071,800	1,438
Myrtle Beach Int'l	<u>756,453,600</u>	<u>325,221,900</u>	<u>12,646</u>
Total Commercial	\$2,524,434,300	\$1,024,575,800	40,871
General Aviation Service			
Aiken Municipal	\$4,925,100	\$1,804,300	66
Allendale County	986,900	414,800	16
Anderson Regional	12,916,400	5,160,100	176
Bamberg County	124,200	53,600	1
Barnwell County	2,142,800	1,286,300	37
Beaufort County	5,127,000	2,201,600	90
Berkeley County	4,070,600	1,719,600	57
Charleston Executive	8,893,600	3,151,800	128
Cheraw Municipal	654,600	243,500	10
Chester-Catawba Regional	927,300	427,500	15
Columbia-Owens-Downtown	14,830,000	5,635,800	218
Conway-Horry	8,975,400	3,188,700	96
Darlington County	5,251,100	1,886,400	75
Dillon County	136,300	46,700	1
Donaldson Center	222,159,200	103,268,900	2,430
East Cooper	1,772,200	832,600	26
Edgefield County	53,800	33,900	1
Fairfield County	768,500	268,800	9
Georgetown County	3,352,200	1,167,100	47
Grand Strand	10,118,700	3,628,900	137
Greenville Downtown	35,198,300	13,433,900	453
Greenwood County	2,750,400	993,800	40
Hampton-Varnville	148,100	62,400	2
Hartsville Regional	672,200	292,600	8
Hemingway-Stuckey	13,800	8,800	0
Hester Memorial	84,300	34,700	1
Holly Hill	25,800	13,900	0

Exhibit 4-7 (continued)
Total Economic Impacts by Airport
South Carolina Aviation Economic Impact Study

Airport	Output		
	(Econ. Activity)	Earnings	Jobs
Lake City Municipal	84,000	41,000	1
Lancaster County	2,448,800	998,300	43
Laurens County	517,500	229,800	6
Lee County	282,500	112,800	3
Lexington County at Pelion	494,900	228,100	9
Lowcountry Regional	4,700,000	2,027,300	69
Marion County	460,300	226,100	9
Marlboro County	571,600	242,800	8
McCormick County	125,900	50,900	1
Newberry County	726,200	317,800	11
Oconee County	6,296,400	2,686,800	107
Orangeburg Municipal	4,341,200	1,862,900	68
Pageland	311,000	126,200	3
Pickens County	10,361,600	4,215,900	189
Ridgeland	425,600	177,700	6
Robert F. Swinnie	596,400	234,800	7
Rock Hill-York County	6,934,300	2,339,500	87
Saluda County	1,118,500	369,400	12
Santee Cooper Regional	1,177,200	417,300	18
Spartanburg Dwntrn. Mem.	15,410,400	5,205,100	190
St. George	465,300	170,200	5
Summerville	3,170,200	1,128,600	49
Sumter	3,163,600	1,184,200	46
Twin City	843,100	314,100	9
Union County	824,500	319,900	10
Williamsburg Regional	972,700	327,700	10
Woodward Field	<u>3,450,100</u>	<u>1,195,300</u>	<u>51</u>
Gen. Aviation Summary	\$417,352,600	\$178,011,500	5,167
Military¹			
Beaufort MCAS	311,821,700	165,876,800	4,337
Charleston AFB	584,330,600	310,840,900	8,127
McEntire ANGS	96,852,300	51,521,600	1,347
Shaw AFB	<u>408,674,000</u>	<u>217,398,400</u>	<u>5,684</u>
Military Summary	\$1,401,678,600	\$745,637,700	19,495
Total	\$4,343,465,500	\$1,948,225,000	65,533

Source: Wilbur Smith Associates

Exhibit 4-8
Output (Economic Activity) Impacts by Type and Airport
 South Carolina Aviation Economic Impact Study

Airport	Direct	Indirect	Multiplier	Total
Commercial Service				
Charleston International	\$72,517,500	\$424,167,000	\$309,772,900	\$806,457,400
Columbia Metropolitan	85,670,800	173,594,200	162,138,400	421,403,400
Florence Regional	15,729,100	12,992,600	19,671,900	48,393,600
Greenville-Spartanburg Int'l	72,811,900	150,758,200	186,352,000	409,922,100
Hilton Head	7,156,800	42,638,300	32,009,100	81,804,200
Myrtle Beach Int'l	48,938,900	412,893,100	294,621,600	756,453,600
Total Commercial	\$302,825,000	\$1,217,043,400	\$1,004,565,900	\$2,524,434,300
General Aviation				
Aiken Municipal	\$1,858,000	\$1,020,900	\$2,046,200	\$4,925,100
Allendale County	293,600	289,800	403,500	986,900
Anderson Regional	5,418,900	2,055,500	5,442,000	12,916,400
Bamberg County	57,100	15,600	51,500	124,200
Barnwell County	1,012,600	198,000	932,200	2,142,800
Beaufort County	783,300	2,288,000	2,055,700	5,127,000
Berkeley County	1,782,000	609,500	1,679,100	4,070,600
Charleston Executive	2,299,300	2,956,200	3,638,100	8,893,600
Cheraw Municipal	202,100	182,000	270,500	654,600
Chester-Catawba Regional	387,200	150,000	390,100	927,300
Columbia-Owens-Downtown	4,495,300	4,303,100	6,031,600	14,830,000
Conway-Horry	4,999,800	161,600	3,814,000	8,975,400
Darlington County	1,464,300	1,634,600	2,152,200	5,251,100
Dillon County	59,500	19,000	57,800	136,300
Donaldson Center	102,330,300	2,322,000	117,506,900	222,159,200
East Cooper	723,700	293,300	755,200	1,772,200
Edgefield County	24,000	6,300	23,500	53,800
Fairfield County	319,900	127,500	321,100	768,500
Georgetown County	1,031,700	937,100	1,383,400	3,352,200
Grand Strand	3,452,500	2,438,100	4,228,100	10,118,700
Greenville Downtown	15,535,400	4,738,100	14,924,800	35,198,300
Greenwood County	731,900	885,100	1,133,400	2,750,400
Hampton-Varnville	25,000	61,900	61,200	148,100
Hartsville Regional	317,400	75,600	279,200	672,200
Hemingway-Stuckey	6,700	1,000	6,100	13,800
Hester Memorial	6,700	43,200	34,400	84,300
Holly Hill	7,500	7,300	11,000	25,800

Exhibit 4-8 (continued)
 Output (Economic Activity) Impacts by Type and Airport
 South Carolina Aviation Economic Impact Study

Airport	Direct	Indirect	Multiplier	Total
Lake City Municipal	26,700	22,100	35,200	84,000
Lancaster County	347,500	1,108,500	992,800	2,448,800
Laurens County	212,500	91,100	213,900	517,500
Lee County	157,800	8,300	116,400	282,500
Lexington County at Pelion	146,200	142,800	205,900	494,900
Lowcountry Regional	1,872,300	888,900	1,938,800	4,700,000
Marion County	95,000	173,500	191,800	460,300
Marlboro County	256,800	77,800	237,000	571,600
McCormick County	6,700	68,600	50,600	125,900
Newberry County	234,700	189,000	302,500	726,200
Oconee County	1,301,900	2,441,700	2,552,800	6,296,400
Orangeburg Municipal	1,539,000	1,011,500	1,790,700	4,341,200
Pageland	166,500	16,200	128,300	311,000
Pickens County	585,200	5,696,300	4,080,100	10,361,600
Ridgeland	195,100	50,400	180,100	425,600
Robert F. Swinnie	340,900	10,200	245,300	596,400
Rock Hill-York County	2,647,600	1,370,600	2,916,100	6,934,300
Saluda County	518,900	126,900	472,700	1,118,500
Santee Cooper Regional	387,400	305,100	484,700	1,177,200
Spartanburg Dwntrn. Mem.	6,176,000	2,656,300	6,578,100	15,410,400
St. George	248,800	22,500	194,000	465,300
Summerville	633,900	1,246,900	1,289,400	3,170,200
Sumter	1,001,400	854,800	1,307,400	3,163,600
Twin City	476,600	8,400	358,100	843,100
Union County	429,800	44,900	349,800	824,500
Williamsburg Regional	507,800	53,400	411,500	972,700
Woodward Field	<u>907,700</u>	<u>1,106,300</u>	<u>1,436,100</u>	<u>3,450,100</u>
Gen. Aviation Summary	\$171,046,400	\$47,613,300	\$198,692,900	\$417,352,600
Military				
Beaufort MCAS	\$174,500,000	na	\$137,321,700	\$311,821,700
Charleston AFB	327,000,000	na	257,330,600	584,330,600
McEntire ANGS	54,200,000	na	42,652,300	96,852,300
Shaw AFB	<u>228,700,000</u>	<u>na</u>	<u>179,974,000</u>	<u>408,674,000</u>
Military Summary	\$784,400,000	0	\$617,278,600	\$1,401,678,600
Total	\$1,258,271,400	\$1,264,656,700	\$1,820,537,400	\$4,343,465,500

Exhibit 4-9
Earnings Impacts by Type and Airport
 South Carolina Aviation Economic Impact Study

Airport	Direct	Indirect and Induced	Total
Commercial Service			
Charleston International	\$30,417,300	\$303,157,600	\$333,574,900
Columbia Metropolitan	44,252,700	120,647,400	164,900,100
Florence Regional	5,314,300	12,909,800	18,224,100
Greenville-Spartanburg Int'l	31,718,700	117,864,300	149,583,000
Hilton Head	3,066,800	30,005,000	33,071,800
Myrtle Beach Int'l	<u>22,157,800</u>	<u>303,064,100</u>	<u>325,221,900</u>
Total Commercial	\$136,927,600	\$887,648,200	\$1,024,575,800
General Aviation Service			
Aiken Municipal	\$295,000	\$1,509,300	\$1,804,300
Allendale County	65,500	349,300	414,800
Anderson Regional	2,164,500	2,995,600	5,160,100
Bamberg County	0	53,600	53,600
Barnwell County	59,800	1,226,500	1,286,300
Beaufort County	70,000	2,131,600	2,201,600
Berkeley County	156,000	1,563,600	1,719,600
Charleston Executive	866,700	2,285,100	3,151,800
Cheraw Municipal	50,000	193,500	243,500
Chester-Catawba Regional	85,000	342,500	427,500
Columbia-Owens-Downtown	490,000	5,145,800	5,635,800
Conway-Horry	819,700	2,369,000	3,188,700
Darlington County	667,100	1,219,300	1,886,400
Dillon County	20,100	26,600	46,700
Donaldson Center	68,406,400	34,862,500	103,268,900
East Cooper	336,700	495,900	832,600
Edgefield County	0	33,900	33,900
Fairfield County	75,000	193,800	268,800
Georgetown County	345,000	822,100	1,167,100
Grand Strand	1,147,300	2,481,600	3,628,900
Greenville Downtown	4,130,800	9,303,100	13,433,900
Greenwood County	70,000	923,800	993,800
Hampton-Varnville	0	62,400	62,400
Hartsville Regional	18,500	274,100	292,600
Hemingway-Stuckey	0	8,800	8,800
Hester Memorial	0	34,700	34,700
Holly Hill	0	13,900	13,900

Exhibit 4-9 (continued)
 Earnings Impacts by Type and Airport
 South Carolina Aviation Economic Impact Study

Airport	Direct	Indirect and Induced	Total
Lake City Municipal	0	41,000	41,000
Lancaster County	95,200	903,100	998,300
Laurens County	33,900	195,900	229,800
Lee County	0	112,800	112,800
Lexington County at Pelion	60,000	168,100	228,100
Lowcountry Regional	157,500	1,869,800	2,027,300
Marion County	40,000	186,100	226,100
Marlboro County	15,000	227,800	242,800
McCormick County	0	50,900	50,900
Newberry County	74,000	243,800	317,800
Oconee County	372,900	2,313,900	2,686,800
Orangeburg Municipal	125,000	1,737,900	1,862,900
Pageland	0	126,200	126,200
Pickens County	115,000	4,100,900	4,215,900
Ridgeland	55,000	122,700	177,700
Robert F. Swinnie	0	234,800	234,800
Rock Hill-York County	1,260,500	1,079,000	2,339,500
Saluda County	225,000	144,400	369,400
Santee Cooper Regional	175,000	242,300	417,300
Spartanburg Dwntn. Mem.	2,083,100	3,122,000	5,205,100
St. George	60,000	110,200	170,200
Summerville	254,000	874,600	1,128,600
Sumter	197,100	987,100	1,184,200
Twin City	199,700	114,400	314,100
Union County	76,500	243,400	319,900
Williamsburg Regional	211,100	116,600	327,700
Woodward Field	<u>338,500</u>	<u>856,800</u>	<u>1,195,300</u>
Gen. Aviation Summary	\$86,563,100	\$91,448,400	\$178,011,500
Military¹			
Beaufort MCAS	\$144,100,000	\$21,776,800	\$165,876,800
Charleston AFB	155,600,000	155,240,900	310,840,900
McEntire ANGS	42,300,000	9,221,600	51,521,600
Shaw AFB	<u>206,900,000</u>	<u>10,498,400</u>	<u>217,398,400</u>
Military Summary	\$548,900,000	\$196,737,700	\$745,637,700
Total	\$772,390,700	\$1,175,834,300	\$1,948,225,000

Exhibit 4-10
Job Impacts by Type and Airport
 South Carolina Aviation Economic Impact Study

Airport	Direct	Indirect and Induced	Total
Commercial Service			
Charleston International	836	12,844	13,680
Columbia Metropolitan	1,526	5,014	6,540
Florence Regional	135	521	656
Greenville-Spartanburg Int'l	813	5,098	5,911
Hilton Head	93	1,345	1,438
Myrtle Beach Int'l	690	11,956	12,646
Total Commercial	4,093	36,778	40,871
General Aviation Service			
Aiken Municipal	12	54	66
Allendale County	3	13	16
Anderson Regional	55	121	176
Bamberg County	0	1	1
Barnwell County	3	34	37
Beaufort County	4	86	90
Berkeley County	4	53	57
Charleston Executive	25	103	128
Cheraw Municipal	3	7	10
Chester-Catawba Regional	4	11	15
Columbia-Owens-Downtown	13	205	218
Conway-Horry	30	66	96
Darlington County	13	62	75
Dillon County	1	0	1
Donaldson Center	1,734	696	2,430
East Cooper	8	18	26
Edgefield County	0	1	1
Fairfield County	3	6	9
Georgetown County	15	32	47
Grand Strand	45	92	137
Greenville Downtown	134	319	453
Greenwood County	4	36	40
Hampton-Varnville	0	2	2
Hartsville Regional	2	6	8
Hemingway-Stuckey	0	0	0
Hester Memorial	0	1	1
Holly Hill	0	0	0

Exhibit 4-10 (continued)
 Job Impacts by Type and Airport
 South Carolina Aviation Economic Impact Study

Airport	Direct	Indirect and Induced	Total
Lake City Municipal	0	1	1
Lancaster County	4	39	43
Laurens County	2	4	6
Lee County	0	3	3
Lexington County at Pelion	2	7	9
Lowcountry Regional	7	62	69
Marion County	3	6	9
Marlboro County	1	7	8
McCormick County	0	1	1
Newberry County	4	7	11
Oconee County	12	95	107
Orangeburg Municipal	4	64	68
Pageland	0	3	3
Pickens County	3	186	189
Ridgeland	3	3	6
Robert F. Swinnie	0	7	7
Rock Hill-York County	31	56	87
Saluda County	8	4	12
Santee Cooper Regional	7	11	18
Spartanburg Dwntrn. Mem.	47	143	190
St. George	2	3	5
Summerville	7	42	49
Sumter	6	40	46
Twin City	7	2	9
Union County	4	6	10
Williamsburg Regional	7	3	10
Woodward Field	<u>11</u>	<u>40</u>	<u>51</u>
Gen. Aviation Summary	2,297	2,870	5,167
Military ¹			
Beaufort MCAS	3,455	882	4,337
Charleston AFB	3,755	4,372	8,127
McEntire ANGS	1,020	327	1,347
Shaw AFB	<u>4,895</u>	<u>789</u>	<u>5,684</u>
Military Summary	13,125	6,370	19,495
Total	19,515	46,018	65,533

4.5 Study Year Impacts vs. 1990 Study Impacts

The economic impact associated with aviation in South Carolina increased notably since the previous 1990 study. To understand the magnitude, the impact totals for 1990 are presented below in **Exhibit 4-11**; the format is the same as used to summarize the current study year impacts (see Exhibit 4-6).

Exhibit 4-11
Economic Impacts by Airport Type, Impact Measure and Impact Type – 1990
 South Carolina Aviation Economic Impact Study

Impact Measure and Type	Civil Aviation			Military	Total
	Commercial	General Aviation	Total Civil		
Output					
Direct	\$159,001,000	\$62,809,000	\$221,810,000	\$589,595,000	\$811,405,000
Indirect	316,710,000	25,920,000	342,630,000	0	342,630,000
Multiplier	<u>349,129,000</u>	<u>129,530,000</u>	<u>478,659,000</u>	<u>1,403,750,000</u>	<u>1,882,409,000</u>
Total	\$824,840,000	\$218,259,000	\$1,043,099,000	\$1,993,345,000	\$3,036,444,000
Earnings					
Direct	\$51,744,000	\$39,134,000	\$90,878,000	\$479,081,000	\$569,959,000
Indirect	106,009,300	5,240,200	106,089,100	0	106,089,100
Multiplier	<u>116,860,700</u>	<u>26,186,800</u>	<u>143,047,500</u>	<u>155,856,000</u>	<u>298,903,500</u>
Total	\$274,614,000	\$70,561,000	\$345,175,000	\$634,937,000	\$980,112,000
Jobs					
Direct	2,325	2,059	4,384	24,285	28,669
Indirect	8,591	358	8,600	0	8,600
Multiplier	<u>9,470</u>	<u>1,789</u>	<u>11,259</u>	<u>10,333</u>	<u>21,592</u>
Total	20,386	4,206	24,592	34,618	59,210

In 1990, the output (i.e., economic activity) impact of civil aviation airports (including both commercial service and general aviation) and military airfields totaled \$3.04 billion of which \$0.98 billion was paid in earnings to 59,210 jobs. Since 1990, many developments occurred at the airports and airfields. Specifically, one of the military airfields, the Myrtle Beach Air Force Base, closed, which notably reduced the impacts associated with military operations. Conversely, the commercial service operations at Myrtle Beach International grew tremendously resulting in huge increases of both at-airport (direct) impacts and off-airport (visitor) impacts. In addition, the location of an air cargo distribution facility at Columbia brought hundreds of additional jobs, while Donaldson Center and many other general aviation airports continued to grow. Further, the inter-industry relationships captured in the multipliers changed over the 15-year period with some industries yielding higher multipliers and some industries yielding lower multipliers.

Comparison of the impacts detailed in the 1990 and 2005 reports suggests that the total impact of civil aviation airports and military airfields grew: output impacts grew 43% from \$3.04 billion to \$4.34 billion, earnings nearly doubled from \$1.04 billion to \$1.95 billion, and jobs grew 11% from 59,210 to 65,533, as detailed in **Exhibit 4-12**. Since the monetary impacts are not adjusted for inflation⁸, comparison is difficult; for this and other reasons, jobs are considered a better overall factor for comparison purposes.

Exhibit 4-12
Economic Impact Changes – 1990 vs. 2005
 South Carolina Aviation Economic Impact Study

	Output	Earnings	Jobs
Civil Aviation			
Commercial Aviation			
2005 Study	2,524,434,300	1,024,575,800	40,871
1990 Study	824,840,000	274,614,000	20,386
Change %	206.1%	273.1%	100.5%
General Aviation			
2005 Study	417,352,600	178,011,500	5,167
1990 Study	218,259,000	70,561,000	4,206
Change %	91.2%	152.3%	22.8%
Total Civil Aviation			
2005 Study	2,941,786,900	1,202,587,300	46,038
1990 Study	1,043,099,000	345,175,000	24,592
Change %	182.0%	248.4%	87.2%
Military			
2005 Study	1,401,678,600	745,637,700	19,495
1990 Study	1,993,345,000	634,937,000	34,618
Change %	-29.7%	17.4%	-43.7%
Total (Civil & Military)			
2005 Study	4,343,465,500	1,948,225,000	65,533
1990 Study	3,036,444,000	980,112,000	59,210
Change %	43.0%	98.8%	10.7%

Breakdown of Civil Aviation versus Military job impact changes shows a striking difference. Aviation related jobs at military airfields fell 43.7%, due mainly to the closure of the Myrtle Beach Air Force Base, changes in personnel levels at other airfields and different (i.e. lower) military-related multipliers. Conversely, aviation related jobs at civil aviation airports rose 87.2%, due to increased commercial passenger and cargo operations and increased corporate activity at general aviation airports. Specifically, jobs at commercial airports doubled (100.5% growth) over the 15-year study period, while jobs at general airports rose 22.8%.

⁸ According to the Consumer Price Index, prices changed 47.2% between the two study years.

4.6 Other Qualitative and Productivity Benefits

In addition to the quantitative impacts discussed above, aviation also generates a host of qualitative benefits and productivity benefits, which are difficult to quantify in terms of dollars and jobs. Nonetheless, such benefits do exist and are addressed in this study through surveys and industry references. This section addresses the issue of other benefits from three perspectives: (1.) general observable benefits associated with individual airport activity; (2.) national trends in business use of general aviation aircraft; and (3.) South Carolina businesses perspective of general aviation importance.

4.6.1 Qualitative Benefits

Qualitative benefits arise from regular airport activities that improve people's quality of life. While it is difficult to place a dollar value on such impacts, these benefits affect South Carolina's residents, business and visitors in a variety of ways. Types of qualitative benefits include health, welfare, or safety benefits; which arise from medical flights, police patrol, aerial forest fire fighting, pest control, traffic reporting, educational opportunities, economic development marketing, etc.

The airport management surveys conducted as part of this study identified specific examples of qualitative benefits supported at each South Carolina airport. The demographics of individual market areas and available facilities greatly influence each airport's need to support such benefits. Each airport's qualitative benefits are summarized in **Exhibit 4-13**. While this matrix is not all-encompassing, it does provide an overview of the diversity of benefits that airports support, beyond the creation of jobs, payroll, and output. In general, these categories can be summarized into eight categories

1. *Recreational/Gateway* – This category includes recreation flying and flying to airports for pursuing recreational activities in the airport's market area.
2. *Agricultural Spraying* – This category includes the use of aircraft to apply agricultural fertilizers, pesticides or seeding applications.
3. *Corporate Use* – Many businesses rely on aircraft for conducting business. Businesses in an airport's market area may own, lease, charter, rent or have financial ownership interest in plane. Businesses from outside the State or local market area also rely on airpark to fly to conduct business.
4. *Air Cargo* – Many industries rely on air cargo. Airports with regularly scheduled air cargo service are identified.
5. *Law Enforcement* – This category includes law enforcement activity by federal, state and local agencies. It also includes prisoner transport activities.

Exhibit 4-13
Qualitative Activity Benefits
 South Carolina Aviation Economic Impact Study

	Recreational flying	Agricultural spraying	Corporate/business activity	Recreational gateway	Police/law enforcement	Prisoner transport	Military exercises/training	Career training/Flight instr.	Search & rescue/Civil Air Patrol	Physician/med. Transport	Med. shipment/patient transfer	Forest firefighting	Aerial photography/survey	Traffic/news reporting	Air shows	Skydiving	Gliders/soaring
Airport																	
Commercial Service																	
Charleston International	▲	■	■	■	■	○	■	○	○	■	○	○	▲	■	▲		
Columbia Metropolitan	■	■	■	■	■	○	■	■	■	■	○	○	▲	■	▲		
Florence Regional	■	■	■	■	■	○	▲	■	■	■	○	○	▲	○	■		
Greenville-Spartanburg Int'l	▲	■	▲	■	■	○	○	▲	▲	▲	▲	○	▲	○	○		
Hilton Head	■	■	■	■	■	○	■	▲	▲	▲	○	○	▲	○	○		
Myrtle Beach Int'l	■	■	■	■	○	■	■	○	▲	○	○	○	▲	○	▲		
General Aviation Service																	
Aiken Municipal	■	■	○					○			○						○
Allendale County	▲	■	▲	○				○			○	○	○				
Anderson Regional	■	■	■	■	○	○	■	○	▲	○	○	○	○	○	○	○	○
Bamberg County	○	▲	○	○													
Barnwell County	▲	○	▲	▲				▲	○	○	▲		○			○	
Beaufort County	■	▲	■	■	▲	○		■	○	○	▲		○		○		
Berkeley County	▲	▲	■	○				■	○	▲	▲		○				
Charleston Executive	■	▲	■	■	▲			■	▲	○	○	○	○				
Cheraw Municipal	▲	▲	▲	○				○	▲	▲	○	○	○				
Chester-Catawba Regional	▲	▲	○	○				○	○							■	■
Columbia-Owens-Downtown	▲	■	▲	■	○			▲	▲	▲	▲	○	○	■	○	○	○
Conway-Horry	▲	▲	▲	○				■	○	○	○	○	○		○	○	
Lexington County (Pelion)	▲	○	○	■									○				
Darlington County	■	▲	▲					▲	○						○		
Dillon County	■	○	○														
Donaldson Center	■	■	○				▲	■	○	○	○				○		
East Cooper	■	▲	○					■	○	○	○		○		○	○	
Edgefield County	■	○	○					○					○				
Fairfield County	■	▲	○					▲									
Georgetown County	■	■	■	▲				▲	○	○	○	○	○				
Grand Strand	■	■	■	▲	○			▲	▲	▲	▲	○	▲	○	○	○	○
Greenville Downtown	■	■	○	▲	○	○		▲	▲	▲	▲	○	▲	■	○		
Greenwood County	■	■	○					▲	○	○	○						
Hampton-Varnville	○														○		
Hartsville Regional	■	■	▲	○				▲	○	○	○	○	○		○		○
Hemingway-Stuckey	▲																
Hester Memorial	▲																
Holly Hill	▲		○														
Lake City Municipal	▲		○					▲	○	○	○	○	○				
Lancaster County	■	▲	○					▲	○	○	○		○		○		
Laurens County	▲	▲	○					▲	○				○			○	
Lee County	▲																
Lowcountry Regional	▲	▲	■	○				▲	▲	○	○	○	○		○	■	○
Marion County	▲	▲	▲					○	▲	○	○	▲	▲				
Marlboro County	▲	▲	○												○		○
McCormick County	▲	▲	○							○	○	○	○				
Newberry County	▲	▲	○					▲	▲	○	○	■	○				
Oconee County	■	■	▲					■	○	○	○	○	○	○	○	■	○
Orangeburg Municipal	■	■	○					▲	○	○	○	▲	○				
Pageland	▲	▲	○					▲	▲	▲	○	○	○				
Pickens County	▲	▲	▲	■	○			▲			○	○	○	○	○		
Ridgeland	■	○	○					▲	○			■					■
Robert F. Swinnie	▲	○	○										○				
Rock Hill-York County	■	■	○					■	○	○	○		○		○		
Saluda County	▲	○	○	○	○			▲									■
Santee Cooper Regional	▲	▲	○	○	○							○	▲				■
Spartanburg Dwntrn. Mem.	▲	■	○	■	○			▲	▲	▲	▲	○	■	▲	○		▲
St. George	▲	○	○									○					■
Summerville	■	▲	○					▲	○	○	○						○
Sumter	■	▲	■	○				■	○	○	○	■	○		○	▲	○
Twin City	▲	▲	○							○	○		○		○		
Union County	▲	○	○							○	○	○	○	○	○	○	
Williamsburg Regional	▲	▲	▲	○								○	○				
Woodward Field	■	■	▲					▲				○	○		▲		

6. *Military* – Military activities includes military exercises and flight training activity.
7. *Emergency Access* – Emergency access includes grassland and forest firefighting, search and rescue activity, as well as wildlife management.
8. *Medical* – This category includes medical evacuation of patients via air ambulance, travel by physicians via aircraft to hold clinics at rural hospitals, and the use of aircraft for medical shipments.

Note that the indicated activity levels are based on airport management observations, and should not necessarily be viewed as predominate aviation activities at the respective airport.

4.6.2 Business Use of South Carolina Airports

Many businesses throughout the U.S. depend on commercial airlines as well as on general aviation aircraft to improve productivity and efficiency. Previous report sections quantified the economic impacts associated with the aviation as well as the qualitative health, welfare, and safety benefits of South Carolina's publicly owned airports and military airfields. But these measures alone do not represent the full spectrum of benefits that the State derives from the day-to-day operation of its airport system. Many businesses realize valued-added air transport benefits from increased efficiency. This subsection discusses the additional benefits that non-aviation businesses in South Carolina gain from the use of the State's airport system.

Commercial Airline Service – Today's economy presents business opportunities at any time, anywhere. To remain competitive and take advantage of potential opportunities, South Carolina must be able to move people and products anywhere in the world safely, quickly, and conveniently. Commercial air transport is the preeminent means for doing so. Commercial passenger airline service in South Carolina helps support its competitive advantage in key industries, such as coastal tourism and Upstate manufacturing. For this reason, the overall benefit of South Carolina's airline-served airports is enormous and goes beyond the transport industry impacts detailed in this report. Unfortunately, no widely accepted method has yet been developed to quantify the dollar and job impacts of businesses that depend on air transport. Nonetheless, businesses are keenly aware of the inherent benefits of air transport, and hence base investment decisions accordingly.

General Aviation – Many of the nation's leading employers that use general aviation as a business tool are members of the National Business Aircraft Association (NBAA). The NBAA's Business Aviation Fact Book 2004 indicates that approximately 75 percent of all businesses included in the Fortune 500 operate general aviation aircraft. In addition, 92 of the Fortune 100 companies operate general aviation aircraft. A detailed analysis conducted for NBAA in 2004 also indicated that among the Fortune 500 there were more than twice as many companies operating general aviation aircraft as non-operators.

Business use of general aviation aircraft ranges from small single-engine aircraft rental to multiple aircraft corporate fleets supported by dedicated flight crews and mechanics. The use of general aviation aircraft enables employers to efficiently transport personnel and air cargo. Businesses use general aviation aircraft to link multiple office locations and to reach existing and potential customers. Small to mid-size company use of business aircraft escalated during the emergence of various chartering, leasing, time-sharing, interchange agreements, partnerships, and management contracts. Fractional ownership arrangements also experienced recent rapid growth. The NBAA estimated that between 2000 and 2004 the number of companies and individuals indicating fractional ownership increased 62% from 3,834 to 6,217.

Regardless of who owns the aircraft or what type of aircraft is flown, businesses increasingly choose to use general aviation because it provides safe, efficient, flexible, and reliable transport. Of all the benefits provided to business by general aviation, flexibility is the highest ranked factor by all businesses using general aviation aircraft. Many reasons exist for why businesses use general aviation in their day-to-day operation, NBAA contacted businesses identified the following seven key factors:

1. Employee Time Savings
2. Increased Productivity
3. Minimization of Non-business Hours Away from Home
4. Assurance of Industrial Security
5. Maximization of Personal Safety and Peace of Mind
6. More Control of Business Travel Scheduling
7. Better Facilitation of the Entrepreneurial Spirit

The use of general aviation as a business tool adds to productivity and to the bottom line. According to an NBAA survey of key Forbes and Fortune 500 companies, those businesses that use general aviation aircraft routinely and significantly outperform businesses that do not. Performance indicators such as annual sales, number of employees, value of assets, and annual income are significantly higher for employers using general aviation aircraft.

4.6.3 Measuring Value-Added Impacts

Approximately 3,000 businesses throughout South Carolina were surveyed to assess their dependence on aviation. The 3,000 businesses were selected from a pool of businesses in the manufacturing, transportation, telecommunications, engineering/consulting, and utility sectors. The sectors targeted in this study represent those with greater propensities to use airline service and general aviation. Approximately 10% of the surveys (298) were returned, the results of which are summarized below.

South Carolina Business Use of Airports – The survey was generally oriented towards gaining information on business use of aviation. Survey results indicate that many businesses depend on South Carolina's system of airports on a daily basis. Without access to general aviation and airline-served airports, businesses indicate a need to cut employment or possibly relocate to other states. Approximately 22% of all survey respondents indicate that their company owns, has fractional ownership, leases, or charters general aviation aircraft. In addition, approximately 37% of the respondents indicate their customers or suppliers travel by general aviation to visit the surveyed company. Surveyed businesses also indicate that commercial airline service is vital for employees who travel to conduct business, as well as for customers/clients who visit.

South Carolina Business Dependence on Airports – Considering the number and variety of businesses in the State, it is impossible to quantify the value-added benefit that South Carolina businesses derive from their use of the airport system. It is possible, however, to evaluate or rank aviation's importance to some non-aviation business sectors. To do so surveyed firms were asked: (1.) about their reliance on both general aviation and commercial air service in terms of employment and sales; and (2.) to rank various location factors. The results are summarized below:

- *Employment Reliance* – Each respondent to the non-aviation business survey was asked to estimate the percentage of employment reduction they would anticipate if, for some reason, general aviation and commercial airline service ceased to be available. Statewide, surveyed employers estimated a 12 percent reduction in their current employment levels without commercial airline service. The overall results of the business survey are as follows:
 - 97% of the respondents use South Carolina's commercial airports.
 - 40% of their clients use South Carolina's general aviation airports.
 - 15% stated that at least half of their sales depended on commercial aviation.
 - 19% use general aviation aircraft for business by either owning, leasing, or chartering.
 - 23% indicated that either a portion of their sales or employees depend on general aviation.
 - Employees take about 47,750 annual commercial service airline trips, and their suppliers and clients make a about 31,795 trips through South Carolina airports.

Location Factor Ranking – The final section of the business survey asked respondents to rank the importance of various factors that they would consider if they contemplated relocating or expanding. Overall, the availability of an airport with airline service ranked fourth, and proximity to general aviation facilities ranked eighth out of the 13 factors considered. Highway access,

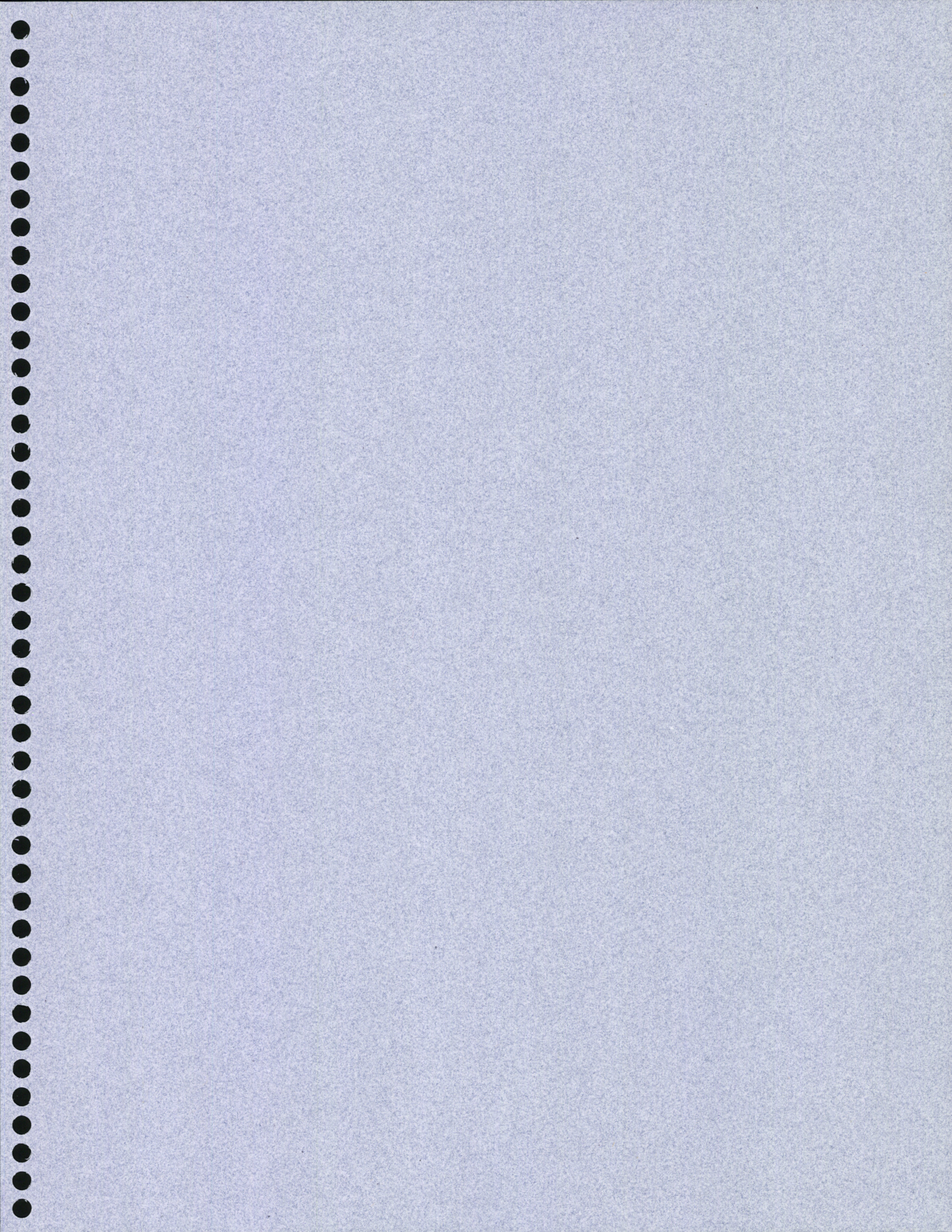
labor supply, and availability of a trained workforce ranked first, second, and third, respectively. The rankings of the 13 location factors included in the survey are as follows:

1. Convenient highway access
2. Available labor supply
3. Availability of a trained workforce
- 4. A commercial service airport**
5. Tax incentives
6. Proximity of Suppliers
7. Academic or cultural centers
- 8. A general aviation airport**
9. Urban business district
10. Raw Materials
11. Natural Resources
12. Water Transportation Facilities
13. Rail transportation facilities
14. Historic location

4.6.4 Qualitative Impact Summary

In summary, South Carolina airports help support and improve the quality of life for all state residents, businesses, and visitors. Airports do so by supporting many activities and services related to one's health, welfare and safety, as well as environmental management. Specifically, study information gathered indicates that South Carolina airports support recreational activities, provide gateways to many communities and tourist attractions, facilitate air cargo and air freight shipments, assist in law enforcement, support the military and its operations, expedite emergency access, and address medical needs.

The qualitative benefits associated with South Carolina's airports cannot be quantitatively assessed as those direct, indirect, and multiplier impacts previously documented throughout this study. Nonetheless, the qualitative benefits do exist and are extremely important. Their relative importance becomes clear when one considers the fact that the purpose of aviation transport is to help support the personal and business needs, which drive South Carolina's economy.



Chapter 5. Tax and Revenue Analysis

Aviation in South Carolina generates a variety of tax revenues from sales, property and income that contribute to both state and local government coffers. These include tax revenues generated from commercial airlines, aircraft owners, aviation employees and aviation-oriented industries in South Carolina. This chapter compares South Carolina's aviation-related tax structure with other states, estimates tax revenues collected directly from aviation activity in South Carolina, and compares these collection with public contributions. Lastly, the state income tax receipts associated with the economic impacts presented in the previous section are also quantified.

5.1 Aviation Taxes and Fees in the U.S.

States and local counties/cities assess a wide range of taxes and fees across the nation on aviation-related products and services. This analysis evaluates these taxes under three broad categories: (1.) sales taxes on aircraft, parts and services; (2.) personal property taxes and registration fees; and (3.) avgas and jet fuel taxes. The national analysis of aviation-oriented taxes provides a backdrop from which to compare South Carolina's tax rates and its effect on based aircraft and business location attractiveness.

5.1.1 Sales Taxes on Aircraft, Parts and Services

State and local taxes are often levied on the sale of aircraft, aircraft parts and services. These taxes often reflect general sales taxes on goods and services. South Carolina's statewide sales tax on aircraft is 5.0% with a very low ceiling of \$300. In addition, local jurisdiction may add an additional 1.0%-2.0% sales tax, which is also subject to the \$300 tax payment ceiling.

As shown below in **Exhibit 5-1**, four states, Alaska, Montana, New Hampshire, and Oregon have no state sales tax on aircraft/parts/services, however, local jurisdictions in Alaska do levy sales taxes. Including both state and median local sales taxes, South Carolina appears to have a combined average tax rate (6.0%)⁹, which is higher than the national average (5.625%). However, the \$300 sales tax cap in South Carolina results in foregone tax revenues on all sales over \$6,000. Further, South Carolina's median total tax rate (6.0%) is lower than most other states in the region with Tennessee having the highest at 9.125%; and North Carolina at 7.5%, Florida at 7.0%, and Georgia at 6.563%.

Given the \$300 sales tax cap, the effective sales tax on a \$100,000 aircraft is 0.3% and only 0.03% on a \$1.0 million aircraft. Due to the sales tax cap, the *effective* sales tax rate in South Carolina is seen as extremely low.

⁹ Varies by county between 5.0% to 7.0%

**Exhibit 5-1
State and Local Sales Tax Rates on Aircraft, Parts & Services – by State
South Carolina Aviation Economic Impact Study**

State	State	Local	Total (Range)	Total (Median)
TN	7.000%	1.500 - 2.750% (4)	8.500 - 9.750%	9.125%
AR	6.000%	1.000 - 4.000%	7.000 - 10.000%	8.500%
IL	6.250%	0.000 - 3.750%	6.250 - 10.000%	8.125%
CA	7.250%	0.500 - 1.250%	7.750 - 8.500%	8.125%
AZ	5.600%	1.000 - 3.500%	6.600 - 9.100%	7.850%
WA	6.500%	0.500 - 1.700%	7.000 - 8.200%	7.600%
NC	7.500%	None (4)	7.500%	7.500%
TX	6.250%	0.000 - 2.000%	6.250 - 8.250%	7.250%
MN	6.500%	0.000 - 1.000%	6.500 - 7.500%	7.000%
NV	6.500%	0.000 - 1.000% (2)	6.500 - 7.500%	7.000%
RI	7.000%	None	7.000%	7.000%
FL	6.000%	0.500 - 1.500% (1)	6.500 - 7.500%	7.000%
OH	6.000%	0.250 - 1.500%	6.250 - 7.500%	6.875%
OK	3.250%	3.250 - 3.875%	6.500 - 7.125%	6.813%
KS	5.300%	0.850 - 1.975%	6.150 - 7.275%	6.713%
NY	4.250%	0.000 - 4.625%	4.250 - 8.875%	6.563%
GA	4.000%	1.000 - 4.000%	5.000 - 8.000%	6.500%
NE	5.500%	0.500 - 1.500%	6.000 - 8.000%	6.500%
PA	6.000%	0.000 - 1.000% (3)	6.000 - 7.000%	6.500%
UT	4.750%	1.000 - 2.250%	5.750 - 7.000%	6.375%
NM	5.000%	0.375 - 2.813%	5.375 - 7.813%	6.279%
ID	6.000%	0.000 - 0.500%	6.000 - 6.500%	6.250%
IA	5.000%	0.000 - 2.000%	5.000 - 7.000%	6.000%
CT	6.000%	None	6.000%	6.000%
IN	6.000%	None	6.000%	6.000%
KY	6.000%	None	6.000%	6.000%
MI	6.000%	None	6.000%	6.000%
NJ	6.000%	None	6.000%	6.000%
SC	5.000%	0.000 - 2.000% (4)	5.000 - 7.000%	6.000%
VT	6.000%	None	6.000%	6.000%
WV	6.000%	None	6.000%	6.000%
WI	5.000%	0.500 - 1.000%	5.500 - 6.000%	5.750%
MO	4.225%	0.500 - 2.250%	4.725 - 8.475%	5.600%
SD	4.000%	1.000 - 2.000%	5.000 - 6.000%	5.500%
CO	2.900%	1.000 - 4.000%	3.900 - 6.900%	5.400%
WY	4.000%	0.500 - 2.000%	4.500 - 6.000%	5.250%
MA	5.000%	None	5.000%	5.000%
MD	5.000%	None	5.000%	5.000%
ME	5.000%	None	5.000%	5.000%
ND	5.000%	None	None	5.000%
AL	2.000%	0.019 - 3.000%	2.010 - 5.000%	4.450%
AK	0.000%	1.000 - 7.000%	1.000 - 7.000%	4.000%
HI	4.000%	None	4.000%	4.000%
LA	4.000%	n/a	n/a	4.000%
MS	3.000%	None	None	3.000%
VA	2.000%	n/a	n/a	2.000%
DE	0.384%	None	0.384%	0.384%
MT	0.000%	None	None	0.000%
NH	0.000%	None	0.000%	0.000%
OR	0.000%	None	0.000%	0.000%
Average	4.718%	0.665 - 2.452%	5.383 - 7.170%	5.626%

(1) Applied to the first \$5,000 only; (2) Local school and city/county relief tax is included in the State Tax of 6.5%; (3) In Philadelphia and Allegheny Counties only; (4) Total sales taxes, including State sales tax capped at \$300 in SC. \$6,000 in TN and \$1,500 in NC..

Source: Conklin & deDecker "State Tax Guide for Aviation, 2005" and EDR Group.

5.1.2 Personal Property and Registration Fees

States typically charge either an aircraft property tax or an aircraft registration fee on non-commercial aircraft. These general aviation property taxes and registration fees vary notably between states, thereby complicating comparisons. Among the 48 continental United States, only 16 levy personal property tax on general aviation aircraft, including South Carolina; the mill rates¹⁰ and assessed valuation basis is summarized by state in **Exhibit 5-2**.

Exhibit 5-2
General Aviation Aircraft Property Tax Rates – by State
 South Carolina Aviation Economic Impact Study

State	Assessment Rate / Basis	Millage Rates		
		State	County*	Local*
AL	20% market value	0.065	0.280	0.100
AR	20% market value	0.30 - 0.55	None	None
CA	Full value	n/a	n/a	n/a
GA	40% market value	None	0.170 - 0.540	None
KS	11.50%	0.215	1.17	None
KY	Full value	0.136	None	None
LA	N/a	None	1.01	None
MO	33.3% market value	None	0.506	None
NE	Net book value	n/a	n/a	n/a
NV	35% of full value	None	0.290	None
NC	Full value	None	0.059 - 0.141	None
SC	Full value	None	0.282	None
TN	25 - 50%**	None	0.140 - 0.630	None
VA	Av. Loan value	n/a	n/a	n/a
WV	60% market value	n/a	n/a	n/a
WY	9.5-11.5% of value	n/a	n/a	n/a

Source: Conklin & deDecker "State Tax Guide for General Aviation, 2005" and EDR Group

n/a = not avail

* Estimated average.

** Dependent on property type (i.e., farm, personal business, commercial, etc.)

Alternatively, a few states rely on annual or biennial general aviation aircraft registration fees in lieu of property taxes (with the exception of Virginia which levies both a personal property tax and annual registration fee). Six states, Arizona, Hawaii, Illinois, Indiana, Maine, and Ohio, charge an annual flat fee, ranging from \$5 in Arizona to \$100 in Ohio. Other states have a rate schedule with fees determined by aircraft weight or engine/wing type, while the remaining states calculate registration fees on a per pound basis. Specific state information is shown below in **Exhibit 5-3**. Interestingly, registration fees are not applied in the southeast (excluding Virginia).

¹⁰ Tax per dollar of assessed value. 1 mill = 0.001 cents.

Exhibit 5-3
General Aviation Aircraft Registration Fees – by State
 South Carolina Aviation Economic Impact Study

State	Lowest Rate		Highest Rate	
	Amount	Fee Basis	Amount	Fee Basis
AZ	\$5	n/a	\$5	n/a
CT	\$90	<3,000 lbs	\$2,500	>12,500 lbs.
HI	\$10	n/a	\$10	n/a
ID	\$0.01/lb gross aircraft weight	n/a	\$200	n/a
IL	\$10	n/a	\$10	n/a
IN	\$10	n/a	\$10	n/a
IA	1% of mfg list price, \$5,000 max	1st year of registration	0.25 of 1% of mfg list price	4th year of reg. and thereafter
ME	\$10	n/a	\$10	n/a
MA	\$75	<2,000 lbs.	\$225	>12,500 lbs.
MI	\$0.01/lb gross weight or max. takeoff weight*	n/a	\$0.01/lb gross weight or max. takeoff weight*	n/a
MN	1% of mfg list price, \$5,000 max	1st year of registration	0.25 of 1% of mfg list price	6th year of reg. and thereafter
MS	\$25	<3,600 lbs.	\$2,500	>100,000 lbs.
MT	\$25	Single engine, fixed gear, <200hp, 30+ years old	\$3,000	Jet engine, no propeller, 0-5 years old
NH	\$48	Resident owner	\$63	Non-resident owner
NM	\$0.01/lb.	Planes 0-1 yr old	\$0.02/lb.	Planes 5+ years old
ND	\$15	<500 lbs, >10 years old	\$3,000	100,000 lbs, <5 years old
OH	\$100	n/a	\$100	n/a
OK	\$20	Single engine, <1,750 lbs.	\$15,000	Turbo-jet, >100,000 lbs.
OR	\$50	Fixed wing or piston engine	\$187	Ex-military/air-carrier multiengine or turbojet
RI	\$30	<2,000 lbs.	\$250	>12,500 lbs.
SD	\$12.50 / \$25.00	0-9 yrs/10+ yrs (0-1,500 lbs)	\$150 / \$300	0-9 yrs/10+ yrs (15,000 lbs)
UT	\$25	Propeller driven	\$10,000	Jet, >20,000 lbs.
VA	\$5	noncommercial	\$100	commercial fleet
WA	\$65	Single engine, fixed wing	\$140	Turbo-jet, multi-engine fixed wing
WI	\$70	<3,500 lbs.	\$3,125	>10,000 lbs.

*Whichever is greater.

For comparative summary purposes, both property taxes and registration fees are identified in **Exhibit 5-4**, which indicates that eight states have neither aircraft property taxes or registration fees. Six of these states (DE, MD, NJ, NY, PA and VT) are located in the northeast; only one of the other states, Florida, is located in the southeast.

Exhibit 5-4
General Aviation Aircraft Property Tax & Registration Fee Summary – by State
 South Carolina Aviation Economic Impact Study

State	Property Taxes			Registration Fees	State	Property Taxes			Registration Fees
	State	County	Local			State	County	Local	
AL	Yes	Yes	Yes	None	MT	None	None	None	Yes
AK	n/a	n/a	n/a	None	NE	n/a	n/a	n/a	None
AZ	None	None	None	Yes	NV	None	Yes	None	None
AR	Yes	None	None	None	NH	None	None	None	Yes
CA	None	100	n/a	None	NJ	None	None	None	None
CO	None	None	None	None	NM	None	None	None	Yes
CT	None	None	None	Yes	NY	None	None	None	None
DE	None	None	None	None	NC	None	Yes	None	None
FL	None	None	None	None	ND	None	None	None	Yes
GA	None	Yes	None	None	OH	None	None	None	Yes
HI	None	None	None	Yes	OK	None	None	None	Yes
ID	None	None	None	Yes	OR	None	None	None	Yes
IL	None	None	None	Yes	PA	None	None	None	None
IN	None	None	None	Yes	RI	None	None	None	Yes
IA	None	None	None	Yes	SC	None	Yes	None	None
KS	Yes	Yes	None	None	SD	None	None	None	Yes
KY	Yes	None	None	None	TN	None	Yes	None	None
LA	None	Yes	None	None	TX	Yes	Yes	Yes	None
ME	None	None	None	Yes	UT	None	None	None	Yes
MD	None	None	None	None	VT	None	None	None	None
MA	None	None	None	Yes	VA	n/a	n/a	n/a	Yes
MI	None	None	None	Yes	WA	None	None	None	Yes
MN	None	None	None	Yes	WV	n/a	n/a	n/a	None
MS	None	None	None	Yes	WI	None	None	None	Yes
MO	None	Yes	None	None	WY	None	Yes	None	None

Source: Conklin & deDecker "State Tax Guide for Aviation" and EDR Group.

In summary, South Carolina's general aviation property taxes appear high compared to other states property tax/registration fee structure. South Carolina property taxes are detailed by county in section 5.2.1.

5.1.3 Sales and Excise Taxes on AvGas and Jet Fuel

Various sales and excise taxes are also levied on aviation fuels nationwide. The 5% state sales tax levied on other goods and services in South Carolina is also applied to the sales price of jet fuel and aviation gasoline (AvGas), the fuels used by most general aviation aircraft. Many states also levy an excise tax on the gallons of aviation fuel sold, which is not levied in South Carolina. These two distinct taxes, levied on sales amount and gallons pumped, complicate comparisons between states, as discussed below. The aviation fuel rates are summarized by tax type and state in **Exhibit 5-5**, and are referred to in the following discussion.

Sales Tax – Aviation fuel taxes often differ in a state between jet fuel and aviation gasoline (AvGas). Regarding AvGas, 16 states including South Carolina apply a general sales tax ranging from 4.0% to 6.5% of the sales price. At 5.0%, South Carolina's sales tax on AvGas falls right in the middle compared to the other 15 states; half have a higher rate than South Carolina and half have an equal or lower rate. Regarding jet fuel, 20 states including South Carolina levy a sales tax ranging from 3.0% (Colorado) to 7.25% (California). At 5.0 %, South Carolina is also firmly in the middle range.

Excise Tax – Though South Carolina is one of nine states that do not, most states (41) charge a special excise tax on AvGas ranging from \$0.001 to \$0.290 per gallon. In fact, 11 states charge *both* sales and excise taxes on AvGas. Similarly, South Carolina does not levy an excise tax on jet fuel, however 33 states do, including eight states that levy *both* a sales and excise tax. Excise taxes on jet fuel range from \$0.001 to \$0.070 per gallon.

Comparison Summary – The average tax for AvGas in 2004, including both sales and excise taxes, averaged an estimated \$0.124 per gallon. For aviation fuel the combined average is estimated at \$0.094 per gallon. It is important to note that several states in addition to South Carolina exempt commercial carriers from aviation fuel taxes, as discussed in the next subsection.

In addition to being 40% higher than the national average, South Carolina's tax per gallon on AvGas (\$0.174) is *slightly* higher than the total effective tax per gallon (including both sales and excise taxes) in Georgia (\$0.149) and North Carolina (\$0.157), over 150% greater than Florida (\$0.069) and Virginia (\$0.050). Similarly, South Carolina's current tax per gallon on jet fuel (\$0.154) is *slightly* higher than the effective tax per gallon in Tennessee (\$0.148), North Carolina (\$0.138) and Georgia (\$0.123), and is also 150% greater than Florida (\$0.069) and Virginia (\$0.050).

Exhibit 5-5
Sales and Excise Tax Rates on AvGas and Jet Fuel – by State
 South Carolina Aviation Economic Impact Study

State	AvGas Taxes			Jet Fuel Taxes		
	Gas Tax Rate (per \$ Sales)	Excise Tax Rate (per Gallon)	Total Tax/Gallon ¹	Fuel Tax Rate (per \$ Sales)	Excise Tax (per Gallon)	Total Tax/Gallon ²
AL	0%	\$0.027	\$0.027	0%	\$0.009	\$0.009
AK	0%	\$0.047	\$0.047	0%	\$0.032	\$0.032
AZ	0%	\$0.050	\$0.050	0%	\$0.031	\$0.031
AR	6.000%	\$0	\$0.209	6.000%	\$0	\$0.184
CA	0%	\$0.180	\$0.180	7.250%	\$0.020	\$0.243
CO	0%	\$0.060	\$0.060	3.000%	\$0.040	\$0.132
CT	0%	\$0	\$0	0%	\$0	\$0
DE	0%	\$0.230	\$0.230	0%	\$0	\$0
FL	0%	\$0.069	\$0.069	0%	\$0.069	\$0.069
GA	4.000%	\$0.010	\$0.149	4.000%	\$0	\$0.123
HI	4.000%	\$0.010	\$0.149	4.000%	\$0.010	\$0.133
ID	0%	\$0.055	\$0.055	0%	\$0.045	\$0.045
IL	6.250%	\$0.003	\$0.221	6.250%	\$0.003	\$0.195
IN	6.000%	\$0.180	\$0.389	6.000%	\$0	\$0.184
IA	0%	\$0.080	\$0.080	0%	\$0.030	\$0.030
KS	5.300%	\$0	\$0.184	5.300%	\$0	\$0.163
KY	0%	\$0.150	\$0.150	6.000%	\$0	\$0.184
LA	4.000%	\$0.200	\$0.339	4.000%	\$0	\$0.123
ME	5.000%	\$0.220	\$0.394	0%	\$0.340	\$0.340
MD	0%	\$0.070	\$0.070	0%	\$0.070	\$0.700
MA	0%	\$0.124	\$0.124	0%	\$0.050	\$0.050
MI	6.000%	\$0.030	\$0.239	6.000%	\$0.030	\$0.214
MN	0%	0%	\$0	0%	\$0	\$0
MS	0%	\$0.064	\$0.064	0%	\$0.052	\$0.052
MO	4.225%	\$0.090	\$0.237	4.255%	\$0	\$0.131
MT	0%	\$0.040	\$0.040	0%	\$0.040	\$0.040
NE	0%	\$0.050	\$0.050	0%	\$0.030	\$0.030
NV	0%	\$0.020	\$0.020	0%	\$0.010	\$0.010
NH	0%	\$0.040	\$0.040	0%	\$0.020	\$0.020
NJ	0%	\$0.040	\$0.040	0%	\$0.020	\$0.020
NM	0%	\$0.170	\$0.170	5.000%	0%	\$0.154
NY	4.250%	\$0.146	\$0.294	4.250%	\$0.056	\$0.186
NC	4.500%	\$0	\$0.157	4.500%	\$0	\$0.138
ND	0%	\$0.080	\$0.080	0%	\$0.080	\$0.080
OH	6.000%	\$0	\$0.209	6.000%	0%	\$0.184
OK	0%	\$0.001	\$0.001	0%	\$0.001	\$0.001
OR	0%	\$0.090	\$0.090	0%	\$0.010	\$0.010
PA	0%	\$0.041	\$0.041	0%	\$0.018	\$0.018
RI	0%	\$0	\$0	0%	\$0	\$0
SC	5.000%	\$0	\$0.174	5.000%	\$0	\$0.154
SD	0%	\$0.060	\$0.060	0%	\$0.040	\$0.040
TN	4.500%	\$0.010	\$0.167	4.500%	\$0.010	\$0.148
TX	0%	\$0	\$0	0%	\$0	\$0
UT	0%	\$0.090	\$0.090	0%	\$0.090	\$0.090
VT	0%	\$0.290	\$0.290	6.000%	\$0	\$0.184
VA	0%	\$0.050	\$0.050	0%	\$0.050	\$0.050
WA	6.500%	\$0.050	\$0.276	6.500%	\$0.050	\$0.250
WV	0%	\$0.049	\$0.049	0%	\$0.049	\$0.049
WI	0%	\$0.060	\$0.060	0%	\$0.060	\$0.060
WY	0%	\$0.050	\$0.050	0%	\$0.050	\$0.050
Average	1.631%	\$0.068	\$0.124	2.076%	\$0.030	\$0.094

Source: Conklin & deDecker "State Tax Guide for Aviation" and www.airnav.com

Note: Fuel sales taxes are levied as a % on sales; excise taxes are levied as

¹Assuming an average pre-tax price per gallon of \$3.48; ²Assuming an average pre-tax price per gallon of \$3.07.

5.1.4 Exemptions

A wide range of exemptions further complicate analysis of aviation-related taxes between states. These exemptions, as summarized in **Exhibit 5-6**, include common carrier sales/use taxes, personal property taxes, and aviation fuel taxes. The following discussion highlights key points, especially those relative to South Carolina.

Common Carrier Sales/Use – Exemptions are often given for aircraft used to transport people or property for a charge (e.g., “common carrier”) Some states require such aircraft to be used exclusively or significantly for commercial activity, versus others that may only require the aircraft to be certified as an air carrier. While no such exemptions are reported in South Carolina, they do apply for the other nearby southeastern states (NC, TN, GA, FL).

Personal Property – Of the 16 states that levy personal property taxes on aircraft, only three states (KS, KY, LA) report some form of exemption.

Aviation Fuels – A wide range of exemptions apply to both jet fuel and AvGas. *The exemption of jet fuel taxes for “transportation companies” in South Carolina, which includes commercial airlines, is particularly interesting since it is a potentially large revenue source.* Further, no such exemptions exist for the other nearby southeastern states (NC, TN, GA, FL) except Florida, which only exempts “export and international flights”. Given this commercial carrier exemption, South Carolina’s aviation fuel tax rates generate less on a total per gallon ratio than the other regional states despite having higher taxes (see section 5.1.3).

Another exemption concern regarding South Carolina jet fuel taxes concerns the definition of “transportation companies”. While no evidence was found that non-commercial carriers are avoiding this tax, concern was raised that corporate aircraft and/or air taxi operators may fall under this broad definition, and conceivably could apply for such an exemption. Specifically, air taxi operators and corporate aviation operators often are set-up as private companies whose purpose is to provide for-hire transport; such firms could arguably be interpreted as “transportation companies”. Similarly, “Fractional Companies” might also fall under this unclear definition.

Exhibit 5-6
Aviation Tax Exemptions – by State
 South Carolina Aviation Economic Impact Study

State	Common Carrier Exemption from Sales/Use Tax	Personal Property Tax Exemption	Aviation Fuel Tax Exemptions	
			Jet Fuel	AvGas
AL	Yes	No	airlines w/AL hub	No
AK	n.a.	n/a	intl flights	intl flights
AZ	No	n.a.	tax on 1st 10 million gal. only	aerial applicators
AR	No	n/a	no	No
CA	Yes	No	aircraft manufacturers	commercial aviation
CO	Yes	n.a.	commercial	aerial applicators
CT	No	n.a.	n.a.	n.a.
DE	No	n.a.	n.a.	No
FL	Yes	n.a.	export/intl flights	export/intl flights
GA	Yes	No	no	No
HI	No	n.a.	commercial intl flights	commercial intl flights
ID	Yes	n.a.	none	No
IL	Yes	n.a.	intl flights	intl flights
IN	Yes	n.a.	export/intl flights	export/intl flights
IA	Yes	n.a.	no	No
KS	Yes	comm. & bus.use	interstate flights	interstate flights
KY	Yes	Some local	commercial & business use	must pay state sales tax or excise tax
LA	Yes	private non-comm.	none	n/a
ME	Yes	n.a.	export/intl flights	export/intl flights
MD	Yes	n.a.	export/intl flights	common carriers, agricultural ops
MA	No	n.a.	no	No
MI	Yes	n.a.	commercial/ interstate 50% exemption	commercial/ interstate 50% exemption
MN	No	n.a.	sliding scale based on volume	sliding scale based on volume
MS	No	n.a.	no	no
MO	Yes	n.a.	no	agricultural ops
MT	n.a.	n.a.	common carriers partially exempt	no
NE	Yes	No	flight schools	flight schools
NV	Yes	No	no	no
NH	n.a.	n.a.	common carriers partially exempt	no
NJ	Yes	n.a.	all fuel sold at intl airports	all fuel sold at intl airports
NM	Yes	n.a.	limited exemption for turbo prop/lets	may apply for refund based on volume
NY	Yes	n.a.	commercial airlines	gen.aviat. exempt by application
NC	Yes	No	no	no
ND	No	n.a.	partial exempt. by application	partial exempt. by application
OH	Yes	n.a.	agricultural ops	agricultural ops
OK	Yes	n.a.	no	no
OR	n.a.	n.a.	export/intl flights	export/intl flights
PA	Yes	n.a.	no	no
RI	No	n.a.	no	no
SC	No	No	transportation companies	no
SD	Yes	No	no	no
TN	Yes	No	no	no
TX	Yes	No	n.a.	n.a.
UT	Yes	n.a.	export/intl flights	export/intl flights
VT	Yes	n.a.	no	no
VA	Yes	No	may apply for volume discount	may apply for volume discount
WA	Yes	No	partial exempt. for comm.carriers. aarl ops	agricultural ops
WV	Yes	No	no	no
WI	Yes	n.a.	no	no
WY	Yes	No	no	no

n.a. = not applicable.(i.e. personal property taxes are not levied)

n/a = not available

Source: Conklin & deDecker "State Tax Guide for Aviation" and EDR Group.

5.2 Aviation-Related Tax Collection in South Carolina

Aviation activity in South Carolina generates tax revenues from both the provision of aviation products and services, as well as from state income taxes that arise from the economic impacts associated with the direct, indirect and multiplier impacts (tabulated in Chapter 4). These taxes and their associated collections are discussed and quantified below.

5.2.1 Direct Aviation Taxes and Revenues

Tax revenue attributable to the provision of aviation services is identified as direct aviation taxes, which arise from (1.) the ownership and/or purchase of aircraft and aircraft parts, (2.) the property tax or registration of aircraft, and (3.) the sale of aviation fuels. The previous section (5.1) compared South Carolina's general tax rates to those of other southeastern states. The actual tax collections for these aviation-related products in South Carolina is detailed below for each of these three tax types.

Sales Taxes on Aircraft, Parts & Services – The provision of merchandise and services in South Carolina is subject to sales taxes. The tax rates for sales, seller's use and consumers use are identical at 5%, with counties having the option to levy an additional sales tax of up to 2% (as summarized above in Exhibit 5-1). For aviation activities, this includes aircraft, aircraft parts, labor and aircraft dry leases. Businesses that sell aircraft parts and auxiliary equipment or that lease or rent aviation equipment are subject to such taxes. The South Carolina Department of Revenue collects these tax receipts, and requires each firm to include in their tax registration an SIC code (Standard Industrial Classification) that describes the business. This SIC code is used to identify aviation-related tax receipts, as summarized in **Exhibit 5-7**.

Exhibit 5-7
SC Sales and Use Tax Collections for Aviation-Related Industries – by Year
 South Carolina Aviation Economic Impact Study

Year	Number of Businesses	Gross Sales	Net Taxable Sales Amount	Sales Tax Revenue
1993-1994	9	\$2,883,200	\$1,987,345	\$99,367
1994-1995	8	\$3,314,028	\$2,043,233	\$102,162
1995-1996	8	\$3,063,149	\$2,201,446	\$110,072
1996-1997	5	\$515,557	\$107,913	\$5,396
1997-1998	3	Na	na	na
1998-1999	3	Na	na	na
1999-2000	4	Na	na	na
2000-2001	5	Na	na	na
2001-2002	8	\$206,749	\$118,749	\$5,937
2002-2003	12	\$315,580	\$110,382	\$5,519
2003-2004	8	\$445,958	\$63,639	\$3,182

Source: South Carolina Department of Revenue, Sales and Use Tax Division

na: data not available

The information does not appear robust since it suggests a huge decline in fiscal year 1996/97 revenues, which plummeted from over \$110,000 to \$5,400. Further, the \$3,182 in sales tax revenue in fiscal year 2004 reflects collections from eight firms identified as providing "Air Transportation" services – that is firms that only sell aircraft parts and auxiliary equipment or that rent or lease aviation equipment.¹¹ Given the relatively small revenue figures, it is important to note that other firms that sell aircraft and other aviation-related materials may be classified under different SIC codes such as "transportation equipment". It is presumed that sales generated by aviation-related firms not included in the classification above also contribute sales tax revenue to the state's general fund. However, the SCDOR does not have data readily available for these collections.

Commercial Aircraft Property Taxes – Airline property tax assessments are based on: (1.) Blue Book – low wholesale values; (2.) the sum of the ratios of flight time everywhere to flight time over South Carolina; and (3.) total land time in South Carolina to total land time everywhere. In 2004, the assessment rate was 10.5% and the statewide millage rate was 0.281. Because carriers operate equipment in several states, commercial airlines often pay multi-state property taxes according to the proportional use and value of the equipment in each state. Carriers must submit an annual property tax report for their aircraft to the State Department of Revenue by April 15th each year for the preceding calendar or fiscal year, which provides the basis for the State's tax assessment. A hypothetical tax calculation for an aircraft valued at \$1.0 million whose flight time over South Carolina is 100 days and land time is 25 days (out of a possible 365 days) is presented in **Exhibit 5-8**.

Exhibit 5-8

Commercial Aircraft Tax Tabulation Example
South Carolina Aviation Economic Impact Study

Item	Amount/Rate
Aircraft Value (Blue Book - low)	\$1,000,000
In-State Use Ratios	
Flight Time (i.e., 100 days)	0.274
Land Time (i.e., 25 days)	<u>0.068</u>
Total Time (i.e., 125 days)	0.342
Aircraft Value based on Time in SC	\$342,000
State Property Tax Assessment Rate	<u>10.5%</u>
Assessed Value	\$35,910
State Millage Rate	<u>0.281</u>
Aircraft Tax Assessment	\$10,091

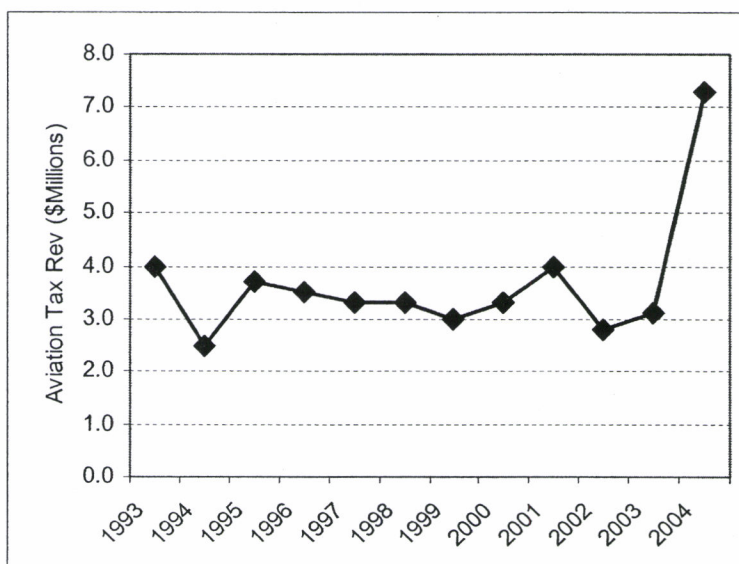
¹¹ Note that the South Carolina Department of Revenue (SCDOR) does not publish the gross sales and taxable sales figures in years when less than five (5) firms report their earnings, which explains the missing amounts for fiscal years 1997 through 2001.

The Comptroller General for the State of South Carolina records the commercial aircraft tax collection in its Annual Comprehensive Financial Report. As seen in **Exhibit 5-9**, the \$7.3 million in commercial aircraft tax revenue collected in 2004 was a banner year. According to the State Department of Revenue, between twenty to thirty commercial cargo and airline companies filed tax reports with South Carolina in 2004. The emergence of upstart air carriers, such as Independence Air and Hooters Airlines (both of which have since discontinued operations), in addition to heavier volumes of commercial flights may have played a role in the significant increase in aviation tax revenue between 2003 and 2004. Between 1993 and 2004, the State collected an average of \$4.0 million in aircraft property taxes annually from commercial airliners. All commercial aircraft tax revenue is distributed to the State’s general fund.

Exhibits 5-9
SC Commercial Aircraft Property Tax Collections – 1993-2004
 South Carolina Aviation Economic Impact

Year	Aircraft Tax Revenue (in millions) ¹
1993	\$4.0
1994	2.5
1995	3.7
1996	3.5
1997	3.3
1998	3.3
1999	3.0
2000	3.3
2001	4.0
2002	2.8
2003	3.1
2004	7.3
Average	\$3.7

Source: SC Comprehensive Annual Financial Report, FY (s) 1993-2004



Non-Commercial Aircraft Property Taxes – Aircraft owned by individuals and corporations (e.g., general aviation) are subject to property taxes levied by county auditors. Each county in South Carolina collects local property taxes on corporate and privately owned aircraft on behalf of all taxing jurisdictions: county, school districts, and municipalities. Aircraft property taxes are based on three key components: (1.) aircraft value; (2.) county property tax assessment rate; and (3.) county millage rate. To determine the aircraft value, the South Carolina Department of Revenue distributes an aircraft valuation blue book to each county assessor’s office, who use the *low wholesale aircraft value* shown in the blue book. The County Assessors then apply the property tax assessment rate (up to a maximum of 10.5%) and the municipal and school district millage rates; the sum of these two rates is shown by county in **Exhibit 5-10**. In doing so, property taxes collected for aircraft are commingled with other property tax receipts.

Exhibit 5-10
General Aviation Aircraft Millage Rates and Property Taxes by County – 2004
 South Carolina Aviation Economic Impact Study

County	County Millage Rate	Aircraft Prop. Taxes ¹	Registered Aircraft ²	Avg. Prop. Tax per Aircraft
Abbeville	0.362	\$3,216	13	\$247
Aiken	0.214	\$201,160	48	\$4,191
Allendale	0.423	\$479	2	\$240
Anderson	0.270	\$89,000	92	\$967
Bamberg	0.392	\$566	2	\$283
Barnwell	0.391	\$269	2	\$135
Beaufort	0.143	\$268,908	99	\$2,716
Berkeley	0.252	\$39,133	53	\$738
Calhoun	0.267	\$21,910	10	\$2,191
Charleston	0.192	\$672,349	195	\$3,448
Cherokee	0.242	\$852	6	\$142
Chester	0.343	\$3,250	6	\$542
Chesterfield	0.233	\$30,600	21	\$1,457
Clarendon	0.291	\$5,120	15	\$341
Colleton	0.261	\$35,254	18	\$1,959
Darlington	0.234	\$458,306	33	\$13,888
Dillon	0.252	\$2,982	16	\$186
Dorchester	0.303	\$40,028	34	\$1,177
Edgefield	0.421	\$2,587	10	\$259
Fairfield	0.284	\$1,363	2	\$682
Florence	0.261	\$148,500	81	\$1,833
Georgetown	0.200	\$32,652	35	\$933
Greenville	0.264	\$4,919,550	242	\$20,329
Greenwood	0.265	\$77,544	36	\$2,154
Hampton	0.445	\$1,463	2	\$732
Horry	0.181	\$330,490	131	\$2,523
Jasper	0.293	\$11,070	10	\$1,107
Kershaw	0.244	\$163,060	44	\$3,706
Lancaster	0.262	\$34,363	46	\$747
Laurens	0.235	\$17,743	22	\$807
Lee	0.335	\$247	2	\$124
Lexington	0.327	\$173,892	100	\$1,739
Marion	0.268	\$2,802	12	\$234
Marlboro	0.269	\$16,770	9	\$1,863
McCormick	0.186	\$326	2	\$163
Newberry	0.349	\$34,083	13	\$2,622
Oconee	0.205	\$122,162	77	\$1,587
Orangeburg	0.334	\$85,450	85	\$1,005
Pickens	0.213	\$78,812	47	\$1,677
Richland	0.362	\$526,414	83	\$6,342
Saluda	0.347	\$3,443	4	\$861
Spartanburg	0.269	\$505,929	73	\$6,931
Sumter	0.289	\$87,960	16	\$5,498
Union	0.291	\$2,904	9	\$323
Williamsburg	0.266	\$5,343	3	\$1,781
York	0.261	\$153,236	59	\$2,597
Average	0.282	\$204,642	42	\$2,304
Total		\$9,413,539	1,920	

¹Figures collected from County Auditors

²County registered aircraft often does not correlate with based aircraft, since aircraft are often based in a different location versus registration

As of 2005, counties now have the option to lower the standard 10.5% property rate assessed on general aviation aircraft to no lower than 4.0% of an aircraft's fair market value.¹² Each county also sets its millage rates for registered aircraft within their respective counties (also shown in **Exhibit 5-9**). Non-commercial aircraft property tax receipts totaled \$9.4 million in 2004. County millage rates average 0.282, ranging from a high of 0.445 in Hampton County to a low of 0.143 in Beaufort County. Registered aircraft range from a high of 242 in Greenville County to a low of only 2 in several counties. And, aircraft property taxes average \$2,304 per aircraft, ranging from a high of \$20,329 in Greenville County to a low of \$124 in Lee County.

Given the frequent use of the terms "registered aircraft" and "based aircraft", it should be made clear that they are not interchangeable. "Registered aircraft" refers to those aircraft that are registered with a certain tax jurisdiction; and as such, are subject to local taxes levied by South Carolina's county auditors. "Based aircraft", on the other hand, refers to aircraft that are physically located at a particular airport. Basing an aircraft at a particular airport does not necessarily mean that the corresponding airport's county auditor can levy property taxes on that particular aircraft. The power to levy taxes remains with the county auditor where the plane is registered. Many pilots opt to base their planes at South Carolina's airports, but register them elsewhere for any of a number of reasons, but predominantly as a result of more favorable rates of taxation elsewhere.

Aviation Fuel Sales and Tax Collections – As discussed previously in section 5.1.3, South Carolina levies a sales tax on the price of non-commercial aviation fuel sales (both AvGas and jet fuel) but not an excise tax on gallons sold. While the Department of Revenue does track AvGas tax receipts, it was not able to provide jet fuel tax receipts associated with general aviation activity. It is understood that AvGas tax data was tracked for several years because it was deposited into the South Carolina Aviation Fund, versus jet fuel tax receipts (for non-commercial aircraft) that were deposited into the State General Fund.

Recent legislative changes resulted in the intended transfer of general aviation jet fuel tax receipts from the General Fund into the State Aviation Fund, beginning in July 2005. However, at the time of this report, no information was available to confirm that the tax receipts are actually deposited into the State Aviation Fund. For this reason, an estimate was developed of both AvGas and jet fuel tax receipts based on gallons pumped and average price per gallon, as presented in **Exhibit 5-11**. The exhibit shows reported aviation fuel sales between 2001-2004, for AvGas and jet fuel, and total estimated aviation-related tax receipts (based on general aviation use only).¹³

¹² Source: South Carolina Property Tax Guide, South Carolina Department of Revenue (See Code Section 12-43-360, South Carolina State Code)

¹³ Aviation fuel sales reported in the South Carolina Department of Revenue, Monthly Supplier Return Reports, indicates significant fluctuations from 2001 to 2004 due to the ramifications associated with the September 11th Attack. However, 2004 figures show a robust recovery. Commercial passenger service fuel sales are tax exempt.

Exhibit 5-11
Aviation Fuel Sales and Estimated Tax Receipts
 South Carolina Aviation Economic Impact Study

	AvGas	Jet Fuel	Total
Aviation Fuel Sales (Gallons)¹			
Commercial Service			
2001	0	31,255,700	31,255,700
2002	0	22,148,100	22,148,100
2003	0	18,729,400	18,729,400
2004	0	28,139,900	28,139,900
General Aviation			
2001	3,562,200	12,150,000	15,712,200
2002	1,934,500	8,610,000	10,544,500
2003	2,569,200	7,280,000	9,849,200
2004	4,130,200	10,950,000	15,080,200
Total Commercial and General Aviation			
2001	3,562,200	43,405,700	46,967,900
2002	1,934,500	30,758,100	32,692,600
2003	2,569,200	26,009,400	28,578,600
2004	4,130,200	39,089,900	43,220,100
Price per Gallon (2004)²			
Commercial Service	\$1.52	\$1.50	
General Aviation	\$3.04	\$3.00	
Estimated Fuel Sales (2004)			
Commercial Service	\$0	\$42,209,900	\$42,209,900
General Aviation	<u>\$12,555,800</u>	<u>\$32,850,000</u>	<u>\$45,405,800</u>
Total Comm. and GA	\$12,555,800	\$75,059,900	\$87,615,700
Estimated Fuel Tax Receipts (2004)			
Commercial Service	\$0	\$0	\$0
General Aviation	<u>\$627,800</u>	<u>\$1,642,500</u>	<u>\$2,270,300</u>
Total Comm. and GA	\$627,800	\$1,642,500	\$2,270,300

¹SC Dept. of Revenue Monthly Supplier Return Reports, SCDOA fuel sales survey

²Aviation Research Group - Low estimate of average annual fuel prices in the Southeast

Based on this information it is estimated that jet fuel tax revenues on general aviation activity totaled \$1.2 million in 2001, fell in 2002 and 2003 (not shown) and jumped back to over \$1.6 million in 2004. These are conservative since they are based on average low fuel prices. Nonetheless, they provide an indication of the magnitude of jet aviation fuel tax receipts that should be deposited into the State Aviation Fund since the new law went into effect. Specifically, based on 2004 gallons and price, monthly jet fuel tax revenues average over \$135,000. Since 2004, both gallons pumped and average prices have risen significantly.

Also of particular note is the foregone potential tax revenues associated with commercial passenger service. In 2004, commercial service fuel (28.1 million gallons) accounted for 65% of total aviation fuel (43.2 million gallons). Due to the significantly lower price of jet fuel, estimated commercial fuel sales (\$42.2 million) accounted for a lower share (48%) of total aviation fuel sales (\$87.6 million) in South Carolina. Nevertheless, these sales represent a significant source of potential tax revenues for the State. Given this exemption on commercial service fuel taxes, South Carolina's total estimated aviation fuel tax collections in 2004 of \$2.3 million on \$87.6 million in sales yields an effective sales tax of only \$0.026. This is significantly less than the stated rates of neighboring states as presented in Section 5.1.3 (Exhibit 5-5).

Total Direct Aviation-Related Taxes – The combined State and local aviation-related tax revenues in South Carolina totaled an estimated \$18.9 million, as summarized below in **Exhibit 5-12**. Of these, approximately half, (\$9.4 million) go directly to local communities and half (\$9.5 million) go to state government coffers. Review by tax type suggest property taxes (\$16.7 million) comprise 88% of total receipts versus 12% for fuel taxes (\$2.2 million).

Exhibit 5-12

Total Estimated Direct Aviation Taxes by Type and Jurisdiction – 2004 (Millions)
 South Carolina Aviation Economic Impact Study

Tax Type	State	Local	Total
Property (Aircraft)	\$7.3	\$9.4	\$16.7
Fuel (AvGas & Jet Fuel)	\$2.2	n/a	\$2.2
Sales (Parts & Services)	n/a	n/a	n/a
Total	\$9.5	\$9.4	\$18.9

These total aviation-related taxes reflect both actual documented tax receipts as well as Consultant estimates, as detailed above. In addition, note that insufficient data regarding sales tax receipts on parts and services prevent a meaningful estimate. Similarly, insufficient data constrain an estimate of local fuel tax revenues associated with the 1%-2% local option tax.¹⁴

In summary, of the \$9.5 million in State collected property and fuel taxes, only \$0.6 million (6.4%) went to the State Aviation Fund in 2004. Based on recent legislative changes that took

¹⁴ As an order-of-magnitude, it is estimated that these local option sales taxes generate another \$100,000

effect in July 2004, general aviation-related jet fuel sales taxes (\$1.6 million in 2004 terms) should be deposited into the State Aviation Fund. Combined, the \$2.2 million in aviation fuel sales (based on 2004 volumes) represent 23% of total State-related aviation tax receipts and 12% of total state and local aviation-related tax receipts. Lastly, the estimated share of aviation related tax receipts that ultimately make its way into the State Aviation Fund is considered conservative because data on sales tax receipts is not available for aviation-related parts and services. *The bottom-line is that aviation-related taxes in South Carolina generate greater revenue than what is deposited into the State Aviation Fund.*

5.2.2 Income Taxes Associated with Economic Impacts

South Carolina also levies an income tax on both individuals and corporations. In 2004, South Carolina collected approximately \$10.1 billion in tax revenue, with individual income taxes comprising roughly 21% (\$2.1 billion) of the state’s general fund.¹⁵ This sub-section addresses individual income taxes generated from aviation related employment. South Carolina’s rate of individual income tax rates, shown in **Exhibit 5-13**, indicates a base tax rate ranges from 2.5% to 7% for annual incomes that range from \$2,350 to \$12,650 annually *after* federal withholdings.

Exhibit 5-13
State Individual Income Tax Rates – 2004
 South Carolina Aviation Economic Impact Study

Annual Income Range After Federal Withholdings	Tax Rate
\$0-2,530	2.5%
\$2,530-\$5,060	3%
\$5,060-\$7,590	4%
\$7,590-\$10,120	5%
\$10,120-\$12,650	6%
\$12,650-Above	7%

Source: South Carolina Department of Revenue

The average annual salary of a full-time employee in South Carolina working: (1) at an airport is \$39,600; (2) off-airport serving visitors who arrive by airport is \$24,700; (3) and off-airport in a multiplier related job is \$26,500. After federal income tax withholdings it is assumed that the average job earnings surpass the \$12,650 benchmark and are subject to the 7% tax rate. However, two factors complicate income tax estimates:

- First, the analysis considers average wages of full-time jobs. In reality, many of the indirect jobs associated with hotels and food service industries are part-time jobs that earn less than the \$12,650 benchmark applicable to the 7% tax bracket. Conversely,

¹⁵ Source: South Carolina Comptroller General Annual Comprehensive Financial Report, FY 2003-2004.

pilots, executives and many other direct, indirect and multiplier jobs earn considerably more than the \$12,650 benchmark. For study purposes, the exact wage of each employee cannot be calculated. For this reason, a conservative approach is taken in which the tax rate is applied to the an average-annual-after-federal-tax-withholding-income of \$12,650. This conservative average annual rate is low, but is useful to clearly illustrate the magnitude of state income related taxes associated with South Carolina's airports and airfields.

- Second, many of the military related jobs are non-state-residents who are legal residents of other States stationed within South Carolina by virtue of military orders; such armed services personnel are exempt from South Carolina income tax on their service pay. For this reason, these 3,800 estimated jobs are also excluded from the income tax estimate.

Given the 7% tax rate, a conservative average taxable income rate of \$12,650 per job, and an estimated 61,733 aviation jobs subject to state taxes it is estimated that at least \$54.7 million dollars in income tax revenue is collected annually.

5.3 Tax Analysis Summary

The State and South Carolina counties benefit from taxes levied on civil aviation activities, which include fuel sales, property and income taxes. The cost to maintain and improve South Carolina's commercial and general aviation airports is shared by the federal government, the state, local governments, and various private entities. Through the Airport and Airways Trust Fund, the Federal Aviation Administration provides grants to public commercial and general aviation airports for eligible maintenance and development projects. To help airports leverage these much larger federal grants, South Carolina contributes funding to maintenance and development activities at public airports. The following conclusion summarizes the various tax collections and relates the collections to the economic output associated with airport activity detailed in Section 4.

Aviation Fuel Tax – South Carolina collects money for airport maintenance and development through taxes levied on the airport users. Taxes levied on the sale of Avgas and on jet fuel purchased by general aviation aircraft in South Carolina are now returned to the airport system through investment for maintenance and development. Note that commercial aircraft are exempt from state fuel taxes.

For the most recent complete calendar year, South Carolina's 5 percent sales tax on jet fuel (for GA use) generated an estimated \$1.6 million in annual tax receipts, while taxes on Avgas generated about \$0.6. In July 2005, recently enacted legislative changes took effect that mandated the deposit of jet fuel tax receipts, in addition to previously deposited avgas receipts,

into the SC Aviation Trust Fund. These fuel taxes provide revenue specifically earmarked for the maintenance and development of State commercial and general aviation airports.

Almost every state levies a tax on the sale of jet fuel and AvGas. Many states also levy special excise taxes on the sale of these fuels; when these special excise taxes are levied in other states, the funds are typically returned to the airport system for maintenance and development. However, South Carolina does not have an excise tax for aviation related fuel sales.

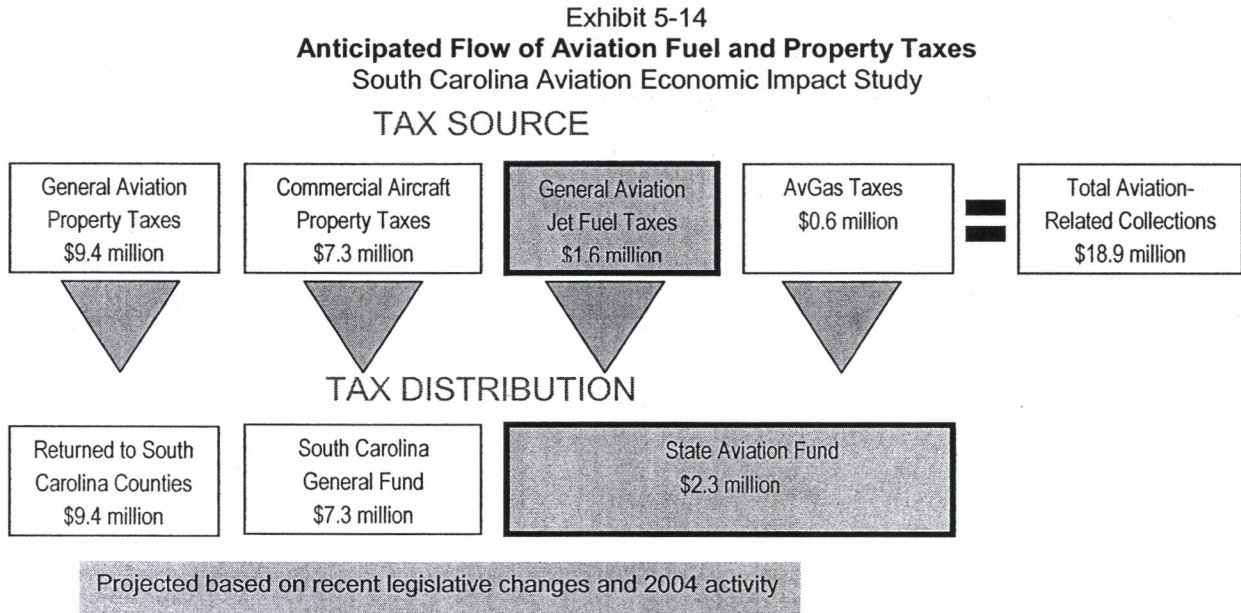
Property Tax – South Carolina also collects property taxes on general aviation and commercial aircraft. The State Department of Revenue levies a tax on commercial aircraft based on a formula that considers overflight and landed time in the state, along with aircraft values. Between 1993 and 2004, the state collected an average \$3.7 million annually from commercial airline personal property taxes; these taxes were deposited in the General Fund. Year 2004 tax collections from commercial airlines and deposited in the state's General Fund rose to \$7.3 million. New start-up low cost carriers (i.e., Independence Air and Hooters) and better collection may have helped generate the 2004 increase.

General aviation aircraft owned by individuals and companies registered in South Carolina are also subject to personal property taxes. These taxes and the tax rates are determined at the county level. Counties have input into setting the rate at which general aviation aircraft are taxed. If taxes are set too high, they may discourage aviation related activities within that county. Property taxes on aircraft are collected by each of South Carolina's 46 counties. These taxes are redistributed within each county based on local formulas for taxing authorities in each county. County funds collected from the taxation aircraft are most often used for schools and special municipal projects. Considering all county collections in 2004, an estimated \$9.4 million in personal taxes on general aviation aircraft in South Carolina were collected and returned to the counties.

Income Tax – When direct, indirect and multiplier impacts are considered, an estimated 65,533 jobs in South Carolina are in some way attributable to the airports and the military airfields analyzed in this study. Individual income tax collections in South Carolina total \$2.1 billion annually and account for over 40 percent of all tax revenue that goes into the General Fund. This study estimates that \$40.8 million in individual income tax is collected from jobs created from direct, indirect and multiplier impacts associated with commercial and general aviation airports. It is estimated that an additional \$13.9 million in individual income tax is collected from jobs associated with the four military airfields.

Total Tax Benefits vs. Current State Investment – Aviation-related taxes on fuel and personal property at airports and airfields, and income taxes of those employed by aviation contribute at least \$73.6 million to the tax base of the State or one of its 46 counties. Fuel taxes and property taxes alone account for an estimated \$18.9 million in annual tax receipts for the State and its counties. The projected \$2.3 million in aviation fuel taxes that should be allocated to the State

Aviation Fund represent 12.1% of aviation-related fuel and property taxes. Such tax collections by source and *intended* distribution by government agency (after July 2005 enactment of recent legislative changes) is diagrammed in **Exhibit 5-14**.



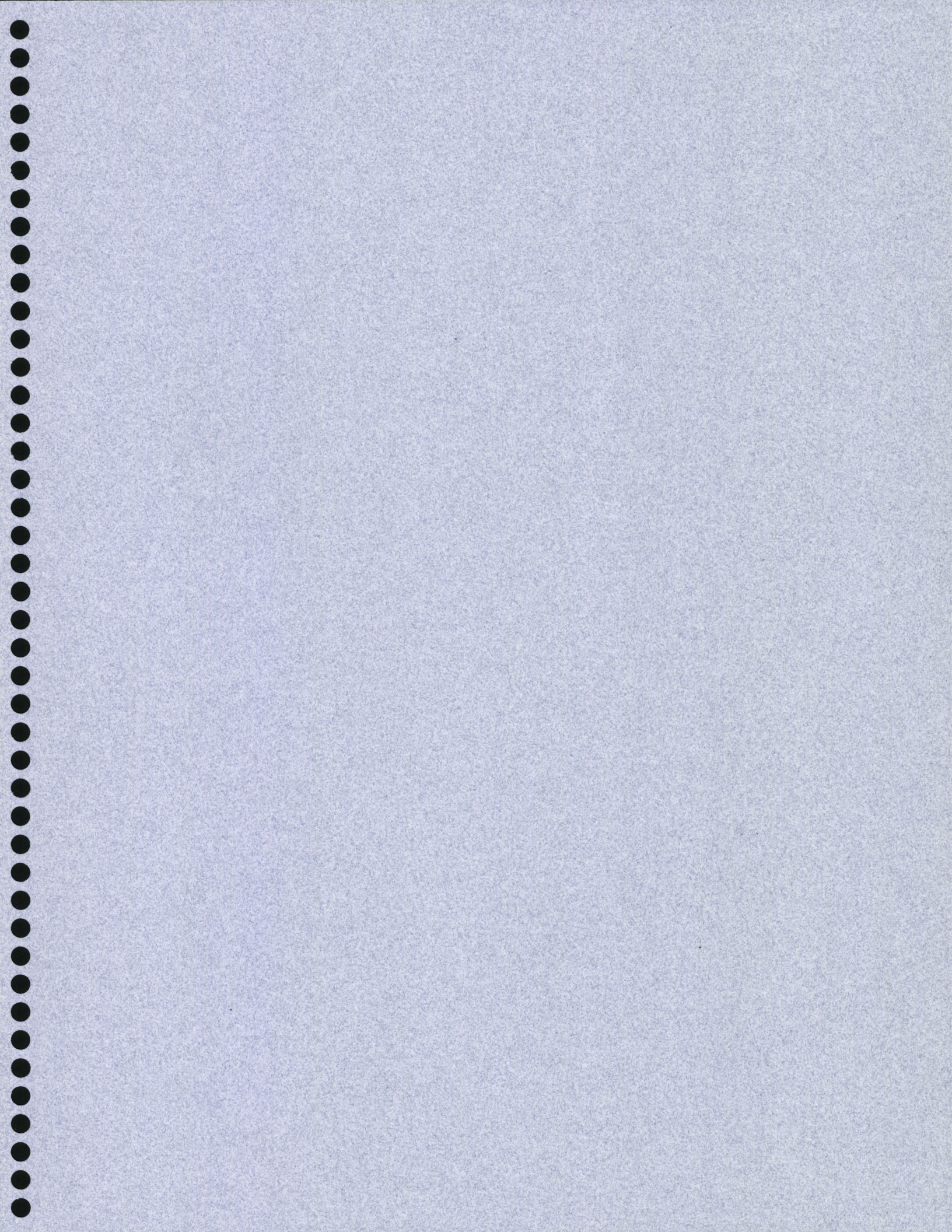
State Investment vs. Federal Funding and Annual Output – Over the past several years, the State of South Carolina’s investment in general aviation and small commercial airports (i.e. Florence Regional and Hilton Head) averaged \$1.3 million per year.¹⁶ Much of this state investment (along with \$2.0 million in local matches) was used to leverage additional Federal grants from the FAA, which average \$14.2 million per year.¹⁷ Combined, state, local and federal investment in general aviation and small commercial airports in South Carolina averages \$18.5 million per year.¹⁸ Comparison of this \$18.5 million in public investments to the current annual output of \$547.6 million at the 54 general aviation and two small commercial airports indicates an impressive return on investment.¹⁹

¹⁶ SC Division of Aeronautics, Department of Commerce

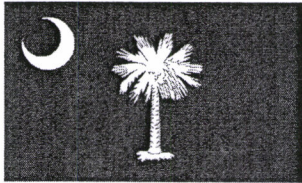
¹⁷ Ibid.

¹⁸ Small commercial airports include Florence Regional and Hilton Head. Note that the other four larger commercial service airports receive federal support directly from the FAA, and do not directly receive State funding.

¹⁹ The \$547.6 million in output (i.e., economic activity) impacts includes \$48.4 million at Florence Regional, \$81.8 million at Hilton Head and \$417.4 million at the 54 general aviation airports.



**Appendix A:
Surveys**



State of South Carolina Economic Impact Study AIRPORT MANAGEMENT SURVEY

ALL RESPONSES WILL BE HELD STRICTLY CONFIDENTIAL

1. **Your Airport** _____
Contact _____
Name Phone Number

2. EMPLOYMENT

In 2004, how many **full-time** and **part-time employees** were employed by your business at the airport?

2004 **Full-time** employees FT 2004 **Part-time** employees PT

3. EXPENDITURES

Please estimate the total **annual wages and benefits** paid to all employees shown in Question 3.

\$ ◀ 2004 Total Wages/Benefits

Please estimate how much you paid in **property taxes** in 2004. ▶

\$

Please estimate other taxes paid to South Carolina by the airport in 2004. ▶

\$

Please estimate how much the airport spent for **capital improvements** in the following years:

\$ ◀ 2001 \$ ◀ 2002
\$ ◀ 2003 \$ ◀ 2004

Omitting the expenditure categories above (i.e., payroll, taxes, and capital improvements) please estimate how much your airport spent for **all other operating expenses** in 2004.

\$ ◀ 2004 Operating Expenses

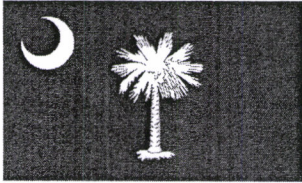
What major capital improvement projects do you anticipate at your airport in the next 3 years?

Project _____ Costs _____ Anticipated Date _____
Project _____ Costs _____ Anticipated Date _____
Project _____ Costs _____ Anticipated Date _____
Project _____ Costs _____ Anticipated Date _____

6. AVIATION ACTIVITY

What activities occur at your airport? *(Check all that apply).*

<u>Activity</u>	<u>Never</u>	<u>Infrequently</u>	<u>Frequently</u>	<u>Very Frequently</u>
Recreational flying				
Agricultural spraying				
Corporate/business activity				
Aerial inspections (pipeline, electric. etc.)				
Air cargo				
Gateway for recreational visitors				
Police/law enforcement				
Prisoner transport				
Military exercises/training				
Career training/Flight instruction				
Search & rescue/Civil Air Patrol				
Environmental patrol (i.e. wildlife)				
Emergency medical evacuation				
Physician/Medical Transportation				
Medical shipments/patient transfer				
Forest firefighting				
Aerial photography/surveying				
Real estate tours				
Aerial advertising/banner towing				
Traffic/news reporting				
Air shows				
Location of community facilities (parks, fire station, meeting rooms)				
Skydiving				
Gliders/soaring				
Food service				
Other (specify) _____				



State of South Carolina Economic Impact Study AIRPORT TENANT SURVEY

ALL RESPONSES WILL BE HELD STRICTLY CONFIDENTIAL

1. **Airport Where Your Business is Located** _____

2. **Business Name** _____

Contact _____
Name Phone Number

3. **What area of aviation activity applies to your business at the airport?** (Check ALL that apply.)

- | | |
|--|--|
| <input type="checkbox"/> Airline | <input type="checkbox"/> Rental Car |
| <input type="checkbox"/> Concession | <input type="checkbox"/> Air Taxi/Charter Operator |
| <input type="checkbox"/> FBO | <input type="checkbox"/> Aircraft Maintenance |
| <input type="checkbox"/> Corporate Flight Department | <input type="checkbox"/> Flight Instruction |
| <input type="checkbox"/> Government/Airport Management/Owner | <input type="checkbox"/> Non-Aviation Business |
| <input type="checkbox"/> Air Freight/Cargo Carrier | <input type="checkbox"/> Other (please specify) |
| <input type="checkbox"/> Aerial Applicator | _____ |

3. EMPLOYMENT

During 2004, how many **full-time** and **part-time employees** were employed by your business at the airport?

2004 **Full-time** employees ▶ 2004 **Part-time** employees ▶

4. EXPENDITURES

Please estimate the total **annual wages and benefits** paid to all employees shown in Question 3.

\$ ◀ 2004 Total Wages/Benefits

Please estimate how much your business paid in **property taxes** in 2004. ▶

Please estimate other taxes paid to South Carolina by your business in 2004. ▶

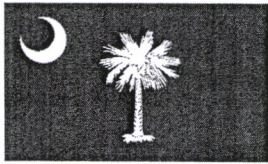
Please estimate how much your business spent for **capital improvements** in the following years:

<input type="text" value="\$"/>	◀ 2001	<input type="text" value="\$"/>	◀ 2002
<input type="text" value="\$"/>	◀ 2003	<input type="text" value="\$"/>	◀ 2004

Omitting the expenditure categories above (i.e., payroll, taxes, and capital improvements) please estimate how much your business spent for **all other operating expenses** in 2004.

\$ ◀ 2004 Operating Expenses

PLEASE CONTINUE ON THE REVERSE SIDE



STATE OF SOUTH CAROLINA ECONOMIC IMPACT STUDY

PASSENGER SURVEY

South Carolina Aeronautics is conducting a passenger survey today. Would you like to participate? The information that you provide will help identify the economic importance of commercial airline service to South Carolina.

GENERAL

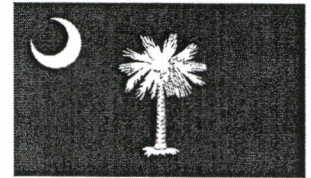
1. Are you a:
Resident of South Carolina?
Connecting Passenger?
Visitor to South Carolina?

IF PASSENGER IS A VISITOR TO THE AREA, PLEASE COMPLETE QUESTIONS 2-5

2. What is the purpose of your trip?
Business
Personal/Vacation
Military
Other (please specify) _____
3. How many days did you stay in South Carolina? _____
4. Approximately how much money did you spend on each of the following items during your stay in South Carolina? *If traveling as a family or group please include expenditures made by all.*
Lodging \$ _____
Food/Beverage \$ _____
Ground Transportation \$ _____
Entertainment \$ _____
Retail \$ _____
Other \$ _____
Total \$ _____
5. How many people, including yourself, accounted for the expenditures identified above? _____

THANK YOU FOR COMPLETING THIS SURVEY

State of South Carolina Economic Impact Study TRANSIENT PILOT SURVEY



Dear General Aviation User:

This survey, which is sponsored by the South Carolina Division of Aeronautics, will be used to help measure the positive economic benefits of daily aircraft operations at the airport. Please take a few moments to complete the survey and drop it in the mail (pre-paid postage is on the back of the survey). Thank you for your time.

- At which airport did you receive this survey? _____
- Please indicate the number of travelers, including the pilot, in your aircraft today: _____
- Please indicate the type of aircraft you are operating today:

Make _____ Model _____

Did you file an IFR Flight Plan today? Yes No

- Please indicate the purpose of your trip today (please check one box):

Business	<input type="checkbox"/>
Fuel/Maintenance	<input type="checkbox"/>
Flight Training	<input type="checkbox"/>
Recreation	<input type="checkbox"/>

Other (please specify) _____

- How long was your visit to this airport/area?

Day only – How many hours? Hours

OR

Overnight – How many days? Days

- Please estimate expenditures for this trip:

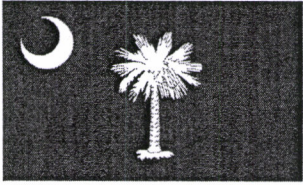
Lodging	\$
Food & Beverage	\$
Rental Car/Taxi/Limo	\$
Retail/Entertainment	\$
Aircraft services (fuel, etc)	\$
Other	\$
Total	\$

How many people, including you, accounted for these expenditures? _____

- Where is your aircraft based?

Airport Name _____ City _____ State _____

PLEASE CONTINUE ON THE REVERSE SIDE



Economic Impact Study BUSINESS QUESTIONNAIRE

COMPANY INFORMATION

Name of Company or Individual _____

Address _____

City _____ State _____

Zip _____ Phone _____

EMPLOYMENT INFORMATION

Type of Business Product or Service _____

of Employees: Full Time _____ Part Time _____ 2004 Annual Gross Sales Volume \$ _____
2004 Annual Payroll (this location only) \$ _____

SCHEDULED COMMERCIAL AIRLINE USE

1. Please list all commercial airports used by your employees for airline travel.

Airport #1: Name: _____ % of use _____
Airport #2: Name: _____ % of use _____
Airport #3: Name: _____ % of use _____
Airport #4: Name: _____ % of use _____

We do not use airline service 100%

2. Please estimate the **total number of airline trips** per year taken by your employees:
_____ (Very important for this survey)

3. Please note the method of airline ticket purchase:

Local Travel Agency Direct From Airline On-line/Internet Corporate Travel Service

4. Approximately what percent of your company's employment and sales is dependent on the availability of scheduled commercial airline service? Employment: _____% Sales: _____%

5. Do any of your **clients or vendors** use **airline service** to visit you in South Carolina?
Yes _____ Estimated Air Trips/Year? _____ No _____

GENERAL AVIATION USE

6. Does your company:

- a. Own general aviation aircraft?
- b. Have fractional ownership in an aircraft?
- c. Use charters or air taxis on a regular basis?
- d. Lease a general aviation aircraft?
- e. If you answered "yes" to any question above please estimate the number of annual aircraft takeoffs and landings that you conduct at South Carolina airports?

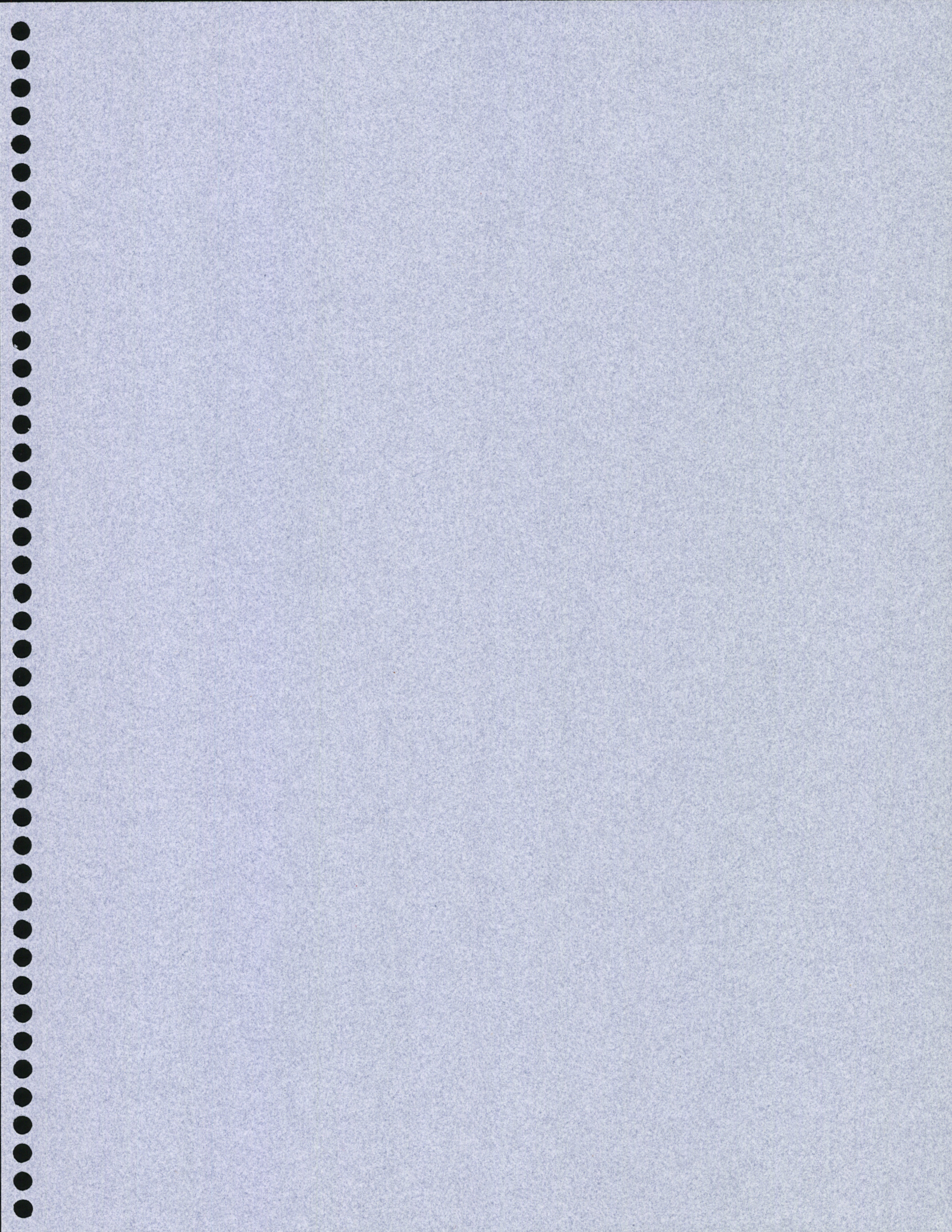
Yes	No
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

South Carolina Airport Name

Number Annual Take-Offs/Landings

_____	_____
_____	_____
_____	_____
_____	_____

PLEASE CONTINUE ON THE REVERSE SIDE



**Appendix B:
Vought Aircraft Manufacturing
Facility Impacts**

Vought Aircraft Manufacturing Facility Impacts Charleston International Airport

In February 2005, ground was broken on a joint-venture Vought Aircraft Industries-Alenia North America Boeing 787 Dreamliner fuselage production facility. The location selected by Boeing for the fuselage sub-assembly work is a 380-acre site on Charleston International Airport. The facility, expected to be completed in early 2006 with production commencing later in the year, will consist of two separate 300,000 square foot buildings (one each for Vought and Alenia), totaling an estimated \$560 million investment. Fuselage sub-assemblies will be built by Vought in its building and then mated to Italian built Alenia sub-assemblies in the adjacent Alenia facility.

The Vought-Alenia facility will create an estimated 645 high-paying jobs with an average annual salary of \$50,000 (totaling over \$32 million annually). Boeing will also employ 45 to 50 personnel at the Airport in support of freighter operations required

to transport the completed fuselage sub-assemblies from Charleston to Seattle for final aircraft construction. It is anticipated that additional jobs in South Carolina will be created as suppliers gear-up in support of the Vought-Alenia plant. Both Vought and Alenia have indicated a willingness to work with South Carolina based suppliers in all stages from initial facility construction through full-scale production phases.

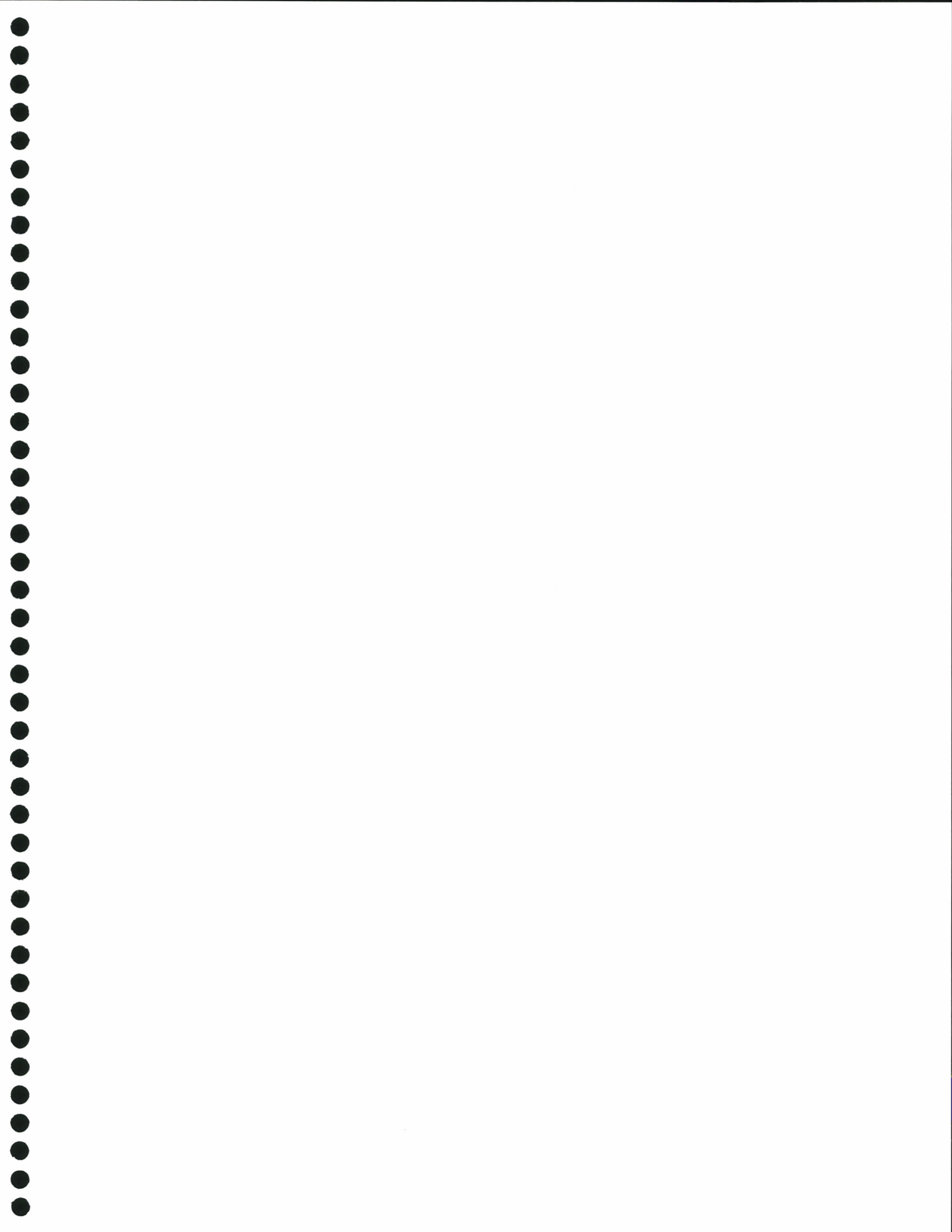
The annual impacts associated with initial construction and subsequent operations are summarized by the direct construction and operation of the facility as well as the by associated multiplier impacts. The total annual impacts associated with the facility's operations suggests \$170.0 million in economic activity, of which \$52.9 million is paid to 2,240 South Carolina employees.

Commerce Industrial Park at the Charleston International Airport



Impact Period	Impact Measure		
	Output (\$Million)	Earnings (\$Million)	Jobs
Initial Construction¹			
Direct	\$280.0	\$120.0	3,420
Multiplier	<u>190.0</u>	<u>70.0</u>	<u>2,030</u>
Total	\$470.0	\$190.0	5,450
Annual Operations			
Direct	\$103.6	\$35.0	700
Multiplier	<u>\$66.4</u>	<u>\$17.9</u>	<u>1,540</u>
Total	\$170.0	\$52.9	2,240

¹Total impacts are annualized; spread over the two-year construction period



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South Carolina
Department of Commerce

South Carolina Department of Commerce
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