The Economic Impact of New Jersey Airports

New Jersey Department of Transportation
Division of Aeronautics

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STATE AIRPORT SYSTEM PLAN

THE ECONOMIC IMPACT OF NEW JERSEY AIRPORTS

Prepared for:

The New Jersey Department of Transportation
Division of Aeronautics

October, 2003

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"The preparation of this document was financed in part through a planning grant from the Federal Aviation Administration (FAA) and the New Jersey Department of Transportation (NJDOT) as approved under the Airport and Airway 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 or NJDOT. Acceptance of this report by the FAA or NJDOT does not in any way constitute a 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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THE ECONOMIC IMPACT OF NEW JERSEY AIRPORTS

New Jersey's participation in the growing, global economy depends on variety of factors, one of the most important is having access to a transportation system that promotes safe, efficient, and rapid movement of people and goods. New Jersey's system of public-use airports is a vital component of the State's overall transportation system and serves as an important economic stimulus to the State, its residents, and businesses. In addition to creating employment, payroll, and business sales, New Jersey's aviation system provides quality of life benefits that affect most State residents, including some who never directly use aviation services. In order to highlight the relationship between New Jersey's general aviation airports, general aviation activity at scheduled service airports, and the statewide economy, an economic impact analysis was undertaken by New Jersey Department of Transportation's (NJDOT) Division of Aeronautics.

New Jersey airports are significant generators of revenues, wages, and jobs for the State. Not only do airports generate economic benefits, but many other employers rely on the New Jersey airport system to support their daily business activities. While most New Jersey residents are familiar with commercial service airports in the State, such as Newark Liberty International, Atlantic City International, and Trenton-Mercer, many are less familiar with the State's other public-use general aviation airports. The primary focus of this study is the economic stimulus provided to New Jersey by general aviation activity at the State's 49 public-use airports. Currently, citizens who are not directly associated with New Jersey's system of airports may not be aware of their significant economic contribution. It should be noted that a summary of the impacts associated with commercial service activities, based on previously completed studies as well as current tenant and activity information, is also included in the report to present the entire picture of the tremendous impact the entire aviation industry has in the State.

This economic impact study updates a previous study that used a similar methodology. The previous study, completed in 1995 using 1994 data, estimated that general aviation generated employment impacts totaling almost 16,000 full-time positions, payroll impacts totaling over $450 million, and output impacts totaling over $1.3 billion to New Jersey's economy. Since then, the economic impact of the airport system has increased. In the 2003 study, general aviation activity generated employment impacts estimated at more than 18,000 full-time positions, total payroll impacts are estimated at approximately $625 million, and total general aviation related output is estimated at over $1.7 billion. As the results from the recent analysis confirm, the economic benefit derived from general aviation in New Jersey continues to grow. It is important to note that in addition to these quantified general aviation impacts, commercial service activities and the visitors that scheduled carriers bring to the State generate additional economic impacts.

The primary focus of this study is the identifiable and quantifiable impacts to the State and local economies resulting from the 49 airports studied. **Exhibit 1** shows the location of each airport included in this study. Another goal of this study is to identify the less-quantifiable benefits linked with aviation such as quality of life contributions including health, safety, recreation, education, and

overall community support. Important activities such as emergency medical flights, police and fire support, traffic reporting, and search and rescue operations benefit the residents and businesses of the State.

Using surveys, telephone interviews, airport visits, and FAA-approved economic modeling, this analysis measures the economic benefits associated with New Jersey's public-use airports including benefits associated with on-airport tenants, visitors using general aviation airports, and non-aviation businesses relying on the airport system. This process produces estimates of expenditures, payroll, and employment that are attributable to the State's system of airports.

This study is based on estimates of airport activity and spending levels for the 2001 calendar year. It is likely that the economic link between New Jersey's airports and the State's economy will grow as the number of visitors, aircraft operations, and based aircraft at New Jersey airports increases.

The economic impact analysis is presented in the following sections:

- *New Jersey Gross State Product and Employment*
- *Methodology*
- *Statewide Economic Impact of General Aviation*
- *Qualitative Airport Benefits*
- *Economic Impact of Commercial Service Airports*
- *Business Use of New Jersey Airports*
- *Conclusions*

I. NEW JERSEY GROSS STATE PRODUCT AND EMPLOYMENT

New Jersey's Gross State Product (GSP) was over $363 million in 2000[1], eighth in the country between Ohio and Michigan. Historically, New Jersey's economy was dominated by manufacturing and wholesale trade industries. But, like many states across the nation, New Jersey has seen significant increase in gross sales and total employment in service industries and retail trades.

In 2000, employment in New Jersey was over 3.95 million people. The largest occupational category was management, professional, and related occupations, accounting for more 1.5 million persons employed, or approximately 38 percent of the employed population over the age of 16. The second largest category, sales and office occupations, accounted for over 1.1 million persons, about 29 percent of the employed civilian population. **Table 1** shows the number of employees in each occupational category in 2000.

1/ 2000 was selected as a result of the complete Census data available. This data is presented for illustrative purposes only.

Table 1
2000 NEW JERSEY EMPLOYMENT* BY OCCUPATION AND INDUSTRY

Occupation	Employees	Percent
Management, Professional, and Related occupations	1,501,037	38.0
Service occupations	538,952	13.5
Sales and Office occupations	1,123,921	28.5
Farming, Fishing, and Forestry occupations	6,963	0.2
Construction, Extraction, and Maintenance occupations	306,196	7.8
Production, Transportation, and Material Moving occupations	472,960	12.0
Total	**3,950,029**	
Industry	**Employees**	**Percent**
Agriculture, Forestry, Fishing, and Hunting	12,618	0.3
Construction	220,817	5.6
Manufacturing	472,684	12.1
Wholesale trade	173,166	4.4
Retail trade	447,346	11.3
Transportation, Warehousing, Information, and Communication	234,801	5.9
Information	173,865	4.4
Finance, Insurance, Real Estate, and Leasing	352,722	8.9
Professional, scientific, management, administrative, and waste management services	453,842	11.5
Educational, health, and social services	783,137	19.8
Arts, entertainment, recreation, accommodation, and food services	271,864	6.9
Other services (except public administration)	173,686	4.4
Public Administration	179,481	4.5
Total	**3,950,029**	

Source: U.S. Bureau of the Census, Census 2000
* Employed Civilian Population 16 Years and Over

Table 1 also shows 2000 employment by industry. The industry with the most employees in 2000 was Educational, Health, and Social Services, accounting for nearly 20 percent of the employed population. Other sectors with more than 10 percent of the employed population include manufacturing; professional, scientific, management, administrative, and waste management services; and retail trade. Prior economic studies show a strong relationship between aviation services and manufacturing, professional, and service sectors. This link will be explored in a subsequent section of this report

II. METHODOLOGY

Aviation is an important factor influencing continued growth and development of New Jersey's economy. The total economic impact, or contribution of, each airport in the State's system is measured in this study in terms of employment, payroll, and output. Each airport's total economic impact represents the sum of the impacts generated by two aviation-dependent groups. These aviation-dependent groups are:

- *On-airport tenants*

- *Visitors traveling to/within New Jersey via general aviation aircraft*

On-airport tenants and visitors who arrive in New Jersey via the State's airports are directly responsible for a significant percentage of economic activity or benefits associated with the airport system. Levels of tenant employment, capital investment, and gross sales drive a variety of economic factors. Visiting aircraft stimulate the economy, too, through of expenditures by general aviation pilots and passengers. Through a separate survey of 3,000 New Jersey businesses, this study also identified the importance of aviation to employers throughout the State. The business-related impacts identified through this survey effort are estimated and discussed in a subsequent section. The qualitative health, welfare, and social benefits of New Jersey's airports are also identified and presented later in this study.

The discussion of the study's methods and findings is presented in two separate subsections, as follows:

- *The Economic Modeling Process*
- *Data Required for Modeling*

A. The Economic Modeling Process

Economic impacts or benefits of the New Jersey airport system were estimated using an economic model. The model developed for this study presents three measures of the economic benefits resulting from the State's aviation system. These three measures are defined below:

- ***Employment*** *– Employment is based on full-time equivalent positions. For example, two part-time workers are assumed to equal one full-time position.*

- ***Payroll*** *– Payroll is the annual salary and benefits paid to all workers.*

- ***Output (Spending)*** *– Output for on-airport tenants is typically assumed to be the sum of annual gross sales and average annual capital expenditures. This assumption is accurate for most profit-oriented tenants, however, it must be modified for government tenants and visitor impacts. Government entities do not generate "sales" in the traditional sense. Government output is generally considered to be the sum of payroll, operating expenditures, and average annual capital improvement outlays. For general aviation visitors, output is assumed to equal annual visitor expenditures.*

Payroll and output cannot be combined because, in a sense, they partially measure the same thing. Some elements of economic benefit related to payroll are contained, more or less, in output measures and combining these two measures would result in some double counting.

In addition, employment, payroll, and output are discussed related to the following categories of impact:

- ***First-Round Impacts*** *– First round benefits include direct and indirect impacts. Direct*

impacts are benefits associated with businesses located on the airport, including airport management, that are directly related to the provision of aviation services. Direct impacts are stated as employment, payroll, and spending of businesses such as airport management, maintenance shops, food and government employees, flight schools, fixed base operators (FBOs), and others.

Indirect impacts generally occur off-airport. These impacts are attributed to spending by visitors who arrive in the State via a New Jersey airport. Visitor spending supports jobs and payroll in service industries such as hotels/motels, restaurants, transportation, retail, and entertainment. For this analysis, visitor spending is treated as output. It is notable that visitor spending on aviation-related goods/services such as aviation fuel, maintenance, etc. is not included in the visitor expenses, but are accounted for in the appropriate tenant's gross sales.

First round impacts associated with individual airports in this study were identified through surveys; this study's specific surveys are discussed in a subsequent section of this report.

- ***Secondary Impacts*** *– Secondary impacts, frequently referred to as induced impacts, are those benefits that result from the spending habits of businesses and workers affected by first-round impacts. For example, as an airport employee spends his or her salary for housing, food, or services, these expenditures circulate through the economy and lead to increases in other spending, payroll, and employment. Secondary impacts are not easily measured, however, reasonable estimates can be made by using economic multipliers. New Jersey industry-specific multipliers were used to estimate the secondary impacts associated with first-round on-airport and visitor economic activity. Multipliers were obtained for employment, payroll, and output for all relevant industry types.*

With each successive wave of spending beyond the first round, some part of the economic activity takes place outside the region being modeled (in this case, the State of New Jersey). Employment, payroll, and spending that take occur outside New Jersey are considered economic leakages and are not included in the estimates offered here.

- ***Total Impacts*** *– Total impacts or benefits are the sum of all first-round and secondary economic activities at an airport or the airport system.*

As noted, first-round and secondary impacts are combined to provide an estimate of the total economic impact.

B. Data Required for the Modeling Process

A number of data collection efforts were undertaken to gather information about economic activity at New Jersey airports. The collected data were used as inputs in the modeling process to identify the total economic impact of New Jersey's system of airports. The following two groups were surveyed to obtain first-round impact data for the State:

- ***On-Airport Tenants*** *– This group includes fixed-base operators (FBOs), flight schools, concessionaires, airport restaurants, maintenance, governmental agencies, and other airport tenants with employees. Governmental agencies include public airport sponsors, the New Jersey Department of Transportation, the Federal Aviation Administration, as well as various other State and federal agencies.*

- ***General Aviation Visitors*** *– Impacts from general aviation visitors come from non-local passengers arriving by private or corporate aircraft. General aviation visitors were assumed to be associated with that portion of each airport's itinerant general aviation activity that is truly transient (or visiting) in nature. First-round impacts for this group were identified using data collected from general aviation visitor surveys conducted in cooperation with the managers and/or FBOs at select New Jersey airports, NJDOT Division of Aeronautics activity estimates, and industry averages.*

First-round impacts presented in this study were identified through surveys conducted at New Jersey airports. New Jersey-specific multipliers were then used to estimate secondary impacts. By using actual survey data, tempered with industry averages, to estimate all first-round impacts, a high degree of confidence can be placed on the final results.

1. Airport Categories

Economic impact data was categorized by type of airport in New Jersey's system and by the different types of activity each accommodates. The primary focus of this analysis is the economic impact of general aviation activities at the State's system of public-use airports. The economic impact of commercial service activities at Newark Liberty International Airport, Atlantic City International Airport, and Trenton-Mercer Airport will be estimated at the conclusion of this analysis; however, the detailed analysis in the following sections focuses on general aviation activity in New Jersey.

In order to accurately reflect the economic activity associated with New Jersey airports that have limited activity, some of New Jersey's general aviation airports have been grouped into a category identified in this analysis as "Other Airports." These airports include Duplicative Basic Service airports identified in the New Jersey State Airport System Plan and/or airports with lower levels of activity. While these airports have limited levels of activity, they still provide important access and recreational services.

The following New Jersey airports are included in the Other Airports category:

- Bucks
- Eagles Nest
- Hackettstown
- Kroelinger
- Li Calzi Airpark
- Little Ferry Seaplane Base
- Newton
- Red Lion
- Red Wing
- Rudy's
- Southern Cross
- Trinca
- Twin Pine

The locations of the airports included in this category are presented in **Exhibit 2**. Of the 13 airports included in the Other Airports category, most have turf runways and are located in rural areas of the State. Recent data indicates that approximately 200 aircraft are based at these airports, most of them being single engine piston aircraft. Aircraft owners base their airplanes at these facilities for a variety of reasons, such as availability of aircraft storage, less expensive fees, and aircraft tire preservation resulting from the use of turf runways. The small-business and recreational nature of the activity occurring at these airports results in their economic impacts being relatively low when compared to other general aviation airports; however, as the based aircraft statistics indicate, these airports are an important component of the State's overall airport system.

Economic impact data for facilities in the Other Airports category will be presented collectively to show their economic contributions to New Jersey. As the data will show, the general aviation airports included in this category provide combined economic benefits to the state that create jobs, payroll, and economic output in their market areas. It is also important to note that many of the impacts and benefits associated with the activity at these airports cannot be expressed solely in dollar terms. In many cases these impacts may be more valuable than their quantified economic impacts. Many of these airports support recreational activity by pilots, provide non-aviation related recreational opportunities for their local communities, support pilot training, and accommodate emergency access as well as many other activities that benefit their communities.

2. Data Collection

First-round impacts for tenants, general aviation visitors, and non-aviation businesses were identified through surveys. This aspect of the analysis is important to ensure that final economic impact estimates are valid, since estimates of secondary impacts are driven by estimates of first-round impacts.

The methods used to collect information related to each group sampled in this analysis are discussed in the following sections.

a. Airport Tenants

Airport sponsors/owners provided names, mailing addresses, and telephone numbers for airport tenants. All airport tenants having employees on New Jersey airports during 2001 were contacted. Surveys were sent to each tenant and follow-up calls were made to ensure their response and verify certain information. Airport tenants were placed in several categories to ensure useful analysis. Airport tenant categories include:

- *Local Government (including airport management, city/county personnel, etc.)*
- *Federal Government (including FAA, US Customs, US Military, etc.)*
- *Small FBO (less than 10 employees)*
- *FBO (10 or more employees)*
- *Flight instruction*
- *Maintenance*
- *Airport related services*
- *Restaurant*
- *Car rental*
- *Corporate aviation*

The survey requested the following specific pieces of information:

- *Type of activity conducted by the business tenant*
- *Number of full-time and part-time employees at airport in 2000 and 2001*
- *Total wages and benefits to on-airport employees in 2000 and 2001*
- *Amount paid by the business for State and local taxes in 2000 and 2001*
- *Capital improvement expenditures by the business on the airport for each year 1998 through 2001*
- *Operating expenses for the business at the airport in 2000 and 2001 (excluding payroll and capital improvements)*
- *Gross sales (where applicable) by the business on the airport during 2000 and 2001*
- *The estimated impact of the events of September 11, 2001 on annual sales activity.*

A 100 percent response rate was desired for the tenant survey; however, some tenants were unwilling to participate and others only provided portions of the requested information. Several rounds of follow-up telephone calls were made to non-responding tenants and to airport managers. For tenants who did not supply complete responses, estimates were developed using ratios of payroll per employee and output per employee. Data used for estimates were selected from an industry-specific collection of ratios; the database comprised the results from New Jersey tenants who did respond to the survey, regional and national per employee averages, and interpolated data from previous economic studies. For example, the average output per employee for all reporting FBOs at study airports was used to estimate the annual sales for FBOs not reporting total sales on the tenant survey.

Each tenant was grouped by their industrial classification code based on the primary service or good they provide. This was done to facilitate subsequent economic modeling to estimate secondary

impacts. For example, aircraft maintenance, flight schools, FBOs, and corporate flight departments were combined in the air transportation category.

b. General Aviation Visitors

The economic activity generated by general aviation visitors at airports throughout the State was identified through a transient pilot survey effort. Surveys were distributed to FBOs and airport management at large and small airports throughout New Jersey. These persons, in turn, distributed the surveys to transient pilots.

The survey requested information related to the following:

- *Airport where the survey was received*
- *Type of aircraft*
- *Purpose of the trip*
- *Length of stay in the airport area*
- *Estimated expenditures*
- *Number of travelers in the aircraft*
- *Where the aircraft is based*
- *Approximate number of trips by general aviation aircraft the pilot made in 2001 for business, pleasure, and training*
- *The estimated impacts of the events of September 11, 2001 on the pilot's aviation activity.*
- *Any further comments regarding the New Jersey aviation system's value to the pilot or his/her business*

This survey effort, which lasted approximately three months, was used to estimate the economic activity associated with general aviation visitors.

Estimates of transient aircraft operations at each New Jersey airport were gathered from airport management and NJDOT Division of Aeronautics data during the on-site data collection task of the New Jersey State Airport System Plan (SASP). Itinerant operations are defined as non-training flights or aircraft that enter or leave an airport's airspace. Estimates of itinerant operations were further refined to determine the number of true transient operations at each airport. By definition, true transient flights are assumed to have departed an airport at least 150 miles away from the destination airport. Approximately one-third of all itinerant operations are considered true transient flights.

Based on survey data, regional, and national averages, estimates of general aviation visitor expenses varied among the different functional levels of airports, as identified in the SASP, that comprise New Jersey's airport system. The SASP categorized New Jersey airports into four functional levels based on a number of factors including the types of users and aviation activity they are intended to support. For example, a true-transient aircraft at a Basic Service airport, an airport intended to serve smaller general aviation aircraft, is estimated to have 2.3 passengers staying for 1.5 days, spending an estimated $50 per day on non-aviation-related expenses. However, a visiting aircraft at an Advanced Service airport, an airport intended to serve larger general aviation aircraft frequently

used for corporate travel, is estimated to arrive with an average of 5.5 passengers, staying for 1.9 days, with each passenger spending $215 per day on non-aviation related expenses.

An example of how overall general aviation visitor impacts in New Jersey were calculated follows, using an Advanced Service airport as an example:

- *The number of itinerant general aviation arrivals was estimated using data from airport management, tower counts, FAA 5010 forms, and other sources. For example, if an airport has 60,000 annual itinerant operations (including arrivals and departures), dividing by two yields 30,000 annual itinerant arrivals.*

- *The number of itinerant arrivals performed by true transients is required to calculate visitor impacts. True transients are aircraft that have departed from an airport at least 150 nautical miles away. It is estimated that 33 percent of itinerant arrivals at general aviation airports are typically true transients. These true transient flights are equated with either business or pleasure visitors. Therefore, approximately 33 percent of 30,000 itinerant arrivals equal 10,000 true transient arrivals.*

  - *30,000 itinerant arrivals x 33 percent = 10,000 true transient arrivals*

- *The findings from the transient pilot survey regarding average trip duration and average number of aircraft occupants were then applied to true transient arrivals to determine total general aviation visitor days at each airport. The average trip length was estimated at 1.9 days and the average passenger load was 5.5 persons. While some visitors will stay in the airport area for several days, many visitors using general aviation may stay for only a few hours. For this example, the 10,000 true transient arrivals yield the following number of total visitor days at an Advanced Service airport:*

  - *10,000 arrivals x 1.9 days x 5.5 persons/aircraft = 104,500 total visitor days*

- *To calculate the impact these visitors have in the local economy, it was necessary to estimate average expenditures per visitor, per day. The typical visitor expenditure was then applied to the number of visitor days to produce direct general aviation visitor spending at an Advanced Service airport. This expenditure figure is equated with direct visitor output.*

  - *104,500 days x $215 = $22,467,500 direct visitor spending*

- *To determine direct payroll and employment impacts, multiplier ratios based on $1 million of output were used for each industry category. For example, New Jersey-specific ratios used in this economic model indicate that for every $1 million of direct general aviation visitor output, approximately 26.6 full-time positions in other industries are created. Most of these jobs are included in the service and retail sectors. Visitors using general aviation at this example airport would then support approximately 598 full-time jobs.*

  - *$22,467,500 direct visitor output / $1,000,000 x 26.6 full-time positions = 598 full-time positions*

- *The average salary in the service/retail industries ($22,100) was then applied to the estimate of employment, or number of jobs, to determine direct payroll impacts associated with general aviation visitors. In this example, visitor-related direct payroll created by the 598 full-time positions is estimated to total approximately $13.2 million.*

  - *598 full-time jobs x $22,100 average direct payroll = $13,215,800 total general aviation visitor payroll*

Table 2 and **Table 3** present the estimated general aviation operations and visitor impacts for study airport in 2001.

Table 2
ANNUAL GENERAL AVIATION OPERATIONS

Airport Name	Associated City	Estimated General Aviation Operations	Percent Itinerant	Itinerant General Aviation Operations	Estimated True Transient Arrivals
Aeroflex-Andover Field	Andover	24,826	40%	9,930	1,640
Alexandria Field	Pittstown	29,863	40%	11,945	1,970
Atlantic City International	Atlantic City	60,635	49%	29,881	4,930
Bader Field	Atlantic City	10,683	70%	7,478	1,230
Blairstown	Blairstown	23,228	40%	9,291	1,530
Camden County	Berlin	16,143	35%	5,650	930
Cape May County	Wildwood	20,192	60%	12,175	2,010
Central Jersey Regional	Manville	37,486	40%	14,994	2,470
Cross Keys	Cross Keys	37,540	35%	13,139	2,170
Essex County	Caldwell	198,905	53%	105,759	17,450
Flying W	Lumberton	39,361	35%	13,776	2,270
Greenwood Lake	West Milford	29,523	40%	11,809	1,950
Hammonton Municipal	Hammonton	15,080	50%	7,540	1,240
Lakewood	Lakewood	15,765	35%	5,517	910
Lincoln Park	Lincoln	58,453	40%	23,381	3,860
Linden	Linden	36,502	45%	16,426	2,710
Marlboro	Matawan	27,527	35%	9,634	1,590
Millville Municipal	Millville	43,760	35%	15,315	2,530
Monmouth Executive	Belmar/Farmingdale	57,229	30%	17,169	2,830
Morristown Municipal	Morristown	271,074	66%	178,049	29,380
Newark Liberty International	Newark	19,750	100%	19,750	3,260
Ocean City Municipal	Ocean City	20,164	60%	12,098	2,000
Old Bridge	Old Bridge	24,787	35%	8,675	1,430
Princeton	Princeton/Rocky Hill	50,622	40%	20,249	3,340
Robert J. Miller Airpark	Toms River	35,267	49%	17,267	2,850
Sky Manor	Pittstown	26,372	40%	10,549	1,740
Solberg-Hunterdon	Readington	37,282	40%	14,913	2,460
Somerset	Somerville	40,764	40%	16,306	2,690
South Jersey Regional	Mount Holly	59,466	37%	22,142	3,650
Spitfire Aerodrome	Pedricktown	8,363	10%	836	140
Sussex	Sussex	34,026	40%	13,614	2,250
Teterboro	Teterboro	282,292	97%	274,795	45,340
Trenton-Mercer	West Trenton	133,255	50%	66,871	11,030
Trenton-Robbinsville	Robbinsville	29,762	23%	6,920	1,140
Vineland Downstown	Vineland	15,350	6%	850	140
Woodbine Municipal	Woodbine	19,250	35%	6,738	1,110
Other Airports		91,700	26%	24,300	4,000
New Jersey Total		**1,982,300**	**53%**	**1,055,700**	**174,200**

Table 3
GENERAL AVIATION EXPENDITURES

Airport Name	Associated City	Estimated True Transient Arrivals	Estimated General Aviation Visitors	Total Annual Number Of Days Stayed	Annual General Aviation Visitor Expenditures
Aeroflex-Andover Field	Andover	1,640	3,770	5,660	$ 283,000
Alexandria Field	Pittstown	1,970	4,530	6,800	$ 710,900
Atlantic City International	Atlantic City	4,930	27,120	51,530	$ 11,090,700
Bader Field	Atlantic City	1,230	2,830	4,250	$ 212,500
Blairstown	Blairstown	1,530	3,520	5,280	$ 552,000
Camden County	Berlin	930	2,140	3,210	$ 160,500
Cape May County	Wildwood	2,010	11,060	21,010	$ 4,521,900
Central Jersey Regional	Manville	2,470	8,890	13,340	$ 1,394,600
Cross Keys	Cross Keys	2,170	7,810	11,720	$ 1,225,200
Essex County	Caldwell	17,450	95,980	182,360	$ 39,249,000
Flying W	Lumberton	2,270	5,220	7,830	$ 818,500
Greenwood Lake	West Milford	1,950	4,490	6,740	$ 704,600
Hammonton Municipal	Hammonton	1,240	2,850	4,280	$ 447,400
Lakewood	Lakewood	910	2,090	3,140	$ 328,300
Lincoln Park	Lincoln	3,860	13,900	20,850	$ 2,179,600
Linden	Linden	2,710	9,760	14,640	$ 1,530,500
Marlboro	Matawan	1,590	3,660	5,490	$ 274,500
Millville Municipal	Millville	2,530	13,920	26,450	$ 5,692,800
Monmouth Executive	Belmar/Farmingdale	2,830	15,570	29,580	$ 6,366,400
Morristown Municipal	Morristown	29,380	161,590	307,020	$ 66,079,300
Newark Liberty International	Newark	3,260	17,930	34,070	$ 7,332,800
Ocean City Municipal	Ocean City	2,000	4,600	6,900	$ 345,000
Old Bridge	Old Bridge	1,430	3,290	4,940	$ 516,400
Princeton	Princeton/Rocky Hill	3,340	7,680	11,520	$ 1,204,300
Robert J. Miller Airpark	Toms River	2,850	10,260	15,390	$ 1,608,900
Rudy's	Vineland	10	20	30	$ 1,500
Sky Manor	Pittstown	1,740	4,000	6,000	$ 627,200
Solberg-Hunterdon	Readington	2,460	8,860	13,290	$ 1,389,300
Somerset	Somerville	2,690	6,190	9,290	$ 971,200
South Jersey Regional	Mount Holly	3,650	13,140	19,710	$ 2,060,500
Spitfire Aerodrome	Pedricktown	140	320	480	$ 50,200
Sussex	Sussex	2,250	5,180	7,770	$ 812,300
Teterboro	Teterboro	45,340	249,370	473,800	$ 101,975,000
Trenton-Mercer	West Trenton	11,030	60,670	115,270	$ 24,809,300
Trenton-Robbinsville	Robbinsville	1,140	2,620	3,930	$ 410,800
Vineland Downstown	Vineland	140	320	480	$ 24,000
Woodbine Municipal	Woodbine	1,110	2,550	3,830	$ 400,400
Other Airports		4,000	9,200	13,900	$ 692,500
New Jersey Total		**174,200**	**806,900**	**1,471,700**	**$ 289,052,300**

c. Non-Aviation Businesses

The economic impacts associated with aviation extend beyond airport tenants and visitors. Many New Jersey businesses depend on aviation for the movement of goods and persons. As a result, there is other employment throughout the State that benefits from air transportation. A separate survey was used to gather data from businesses throughout the State to identify this additional employment. Surveys were sent to approximately 3,000 businesses and industries in New Jersey to collect the following types of data:

- *The company's major product or service the company provides*
- *Employee use of commercial airline service*
- *Number of commercial airline trips by company employees*
- *Client/customer use of commercial service to visit their business*
- *Company ownership or charter of general aviation aircraft*
- *Client/customer use of general aviation aircraft to visit their business*
- *General aviation airport used for business*
- *The impact of September 11, 2001 on their general aviation activity*
- *Company usage of air cargo/package express services for business material*
- *The company's total employment in New Jersey*
- *2001 payroll and gross sales*
- *Percentage of business activity dependent on commercial airline service*
- *Percentage of business activity dependent on general aviation*
- *Importance of various factors to the location of the business*

The sample of businesses in this survey focused on companies likely to use aviation. While this information is not directly comparable to the other economic data gathered in the other surveys used, it does present an "order of magnitude" view of aviation's effects on the State's economy.

3. Impact Multipliers

First-round employment, payroll, and output impacts from airport tenants and transient general aviation activity represent initial economic impacts. As these first-round impacts flow through other sectors of the economy, they create successive waves of additional spending. This is referred to as the multiplier effect, or secondary impacts.

Multiplier effects arise from essential interdependencies within an economy. For example, operating an airport requires supplies, equipment, and maintenance. When the airport buys these products, sales increase for the businesses selling them. Moreover, these products also require inputs for their production, installation, and delivery. The process continues as the impacts ripple through the economy. The final requirement for goods and services is a multiple of the direct needs of the New Jersey airports; hence the term "multiplier."

Multipliers for secondary impacts were provided by *New Jersey Economics*, a New Jersey-based economic consulting firm. These multipliers are directly comparable to the multipliers used in the 1994 Statewide Economic Impact Analysis. The current multipliers used in this analysis were

developed specifically to measure economic impacts in the State of New Jersey. **Table 4** presents a breakdown of these multipliers.

Table 4
TOTAL WEIGHTED AVERAGE IMPACT MULTIPLIERS

Standard Industrial Classification	Total Employment Multiplier	Total Payroll Multiplier	Total Output Multiplier
Aviation Related Tenant Multipliers (1)	1.77	1.61	1.70
Government Tenant Multipliers (2)	1.63	1.47	1.77
Visitor Multipliers (3)	1.43	1.83	1.71

Source: New Jersey Economics, Inc.

1 Aviation Related multipliers are the weighted average of the Air Transportation and Aircraft Maintenance industries.

2 Government multipliers are the weighted average of the New Industrial & Commercial Construction, Maintenance and Repair, and Engineering and Architecture industries.

3 General Aviation Visitor multipliers are the weighted average of the Hotel, Food/Drink, Retail and Automobile Rental industries.

The multipliers presented in Table 4 were used to estimate secondary impacts in this analysis. For example, $100 in direct expenditures by an airport or airport tenant will create a secondary impact of $70. Likewise, hiring 100 new government employees will create a secondary impact of 63 new jobs in other sectors of the economy.

Although survey data from tenants were used for estimating direct output, it was not possible to obtain direct payroll and employment figures resulting from visitor activities. The economic model, however, provides multipliers that calculate these important employment impacts based on estimates of visitor output (spending).

III. STATEWIDE ECONOMIC IMPACT OF GENERAL AVIATION

In 2001/2002, there were 49 public-use airports in New Jersey available to accommodate general aviation air travel. These airports contribute jobs, payroll and output to the economy. Each airport was surveyed to determine their expenditure and employment levels as well as to determine their effect on the local economy. Most of the airports have on-airport tenants that are engaged in aviation-related activity whose impacts were included in this analysis. This analysis focused on the impacts stemming from visitors using general aviation aircraft and facilities.

New Jersey Department of Transportation records indicate there were more than 4,200 based aircraft (aircraft permanently stored) at New Jersey system airports and over 1.9 million general aviation aircraft operations (takeoffs or landings). While many air traveler visitors to New Jersey use commercial service airports, a significant number arrive via private and business general aviation aircraft.

Over 806,900 visitors, generating over 1.47 million visitor days, are estimated to have arrived in

New Jersey via general aviation aircraft. Approximately 761,900 visitors (representing 1,386,100 visitor days) arrived through one of the State's general aviation airports, the remainder came through general aviation operations at commercial service airports. These visitors create direct jobs and payroll in all sectors of the State's economy through their expenditures.

A. Employment Impacts

This study's findings indicate that airports in New Jersey are an important source of jobs. Employment, as defined in this analysis, is based on "Full-Time Equivalent" (FTE) estimates where two part-time jobs are generally assumed to equal one full-time job. Employment impacts are calculated for both on-airport tenants and visitors.

1. Tenant Employment

The tenant employment impacts of airport tenants at each study airport are summarized in **Table 5.** Employees who provide aviation services on the airport make up direct employment. Fixed base operators (FBOs) have the largest share of on-airport jobs, followed by aircraft maintenance businesses. Corporate aviation departments are another major source of airport tenant jobs. A number of large corporations, such as AT&T, Dow Jones & Company, Johnson & Johnson, Pfizer, and Merck & Co. operate corporate flight departments at New Jersey airports. In addition, smaller corporations also operate at New Jersey airports. Big or small, these corporate flight departments employ pilots, aircraft mechanics, and flight scheduler/dispatchers whose duties include supporting the efficient transportation of corporate executives and employees. The full and part-time military personnel and the military-related civilian employees of on-airport military units are also included in this analysis.

Table 5
ON-AIRPORT TENANT EMPLOYMENT

Airport Name	Associated City	Direct Employment	Secondary Employment	Total Employment
Aeroflex-Andover Field	Andover	10.5	7.8	18.3
Alexandria Field	Pittstown	18.0	13.8	31.8
Atlantic City International 1/	Atlantic City	80.0	61.4	141.4
Bader Field	Atlantic City	3.5	2.6	6.1
Blairstown	Blairstown	5.5	4.1	9.6
Camden County	Berlin	11.0	8.4	19.4
Cape May County	Wildwood	25.5	18.9	44.4
Central Jersey Regional	Manville	21.5	16.4	37.9
Cross Keys	Cross Keys	15.0	11.4	26.4
Essex County	Caldwell	163.0	123.5	286.5
Flying W	Lumberton	36.5	28.0	64.5
Greenwood Lake	West Milford	10.5	7.8	18.3
Hammonton Municipal	Hammonton	6.0	4.6	10.6
Lakewood	Lakewood	9.0	6.9	15.9
Lincoln Park	Lincoln	57.0	42.9	99.9
Linden	Linden	120.5	92.3	212.8
Marlboro	Matawan	16.0	12.3	28.3
Millville Municipal	Millville	850.0	652.0	1,502.0
Monmouth Executive	Belmar/Farmingdale	85.0	64.7	149.7
Morristown Municipal	Morristown	413.5	261.2	674.7
Newark Liberty International 1/	Newark	50.0	38.4	88.4
Ocean City Municipal	Ocean City	18.0	13.4	31.4
Old Bridge	Old Bridge	11.0	8.4	19.4
Princeton	Princeton/Rocky Hill	33.0	25.3	58.3
Robert J. Miller Airpark	Toms River	30.5	23.1	53.6
Sky Manor	Pittstown	36.0	27.1	63.1
Solberg-Hunterdon	Readington	24.5	18.8	43.3
Somerset	Somerville	15.0	11.4	26.4
South Jersey Regional	Mount Holly	45.0	34.4	79.4
Spitfire Aerodrome	Pedricktown	4.0	3.1	7.1
Sussex	Sussex	24.5	18.3	42.8
Teterboro	Teterboro	1,138.5	869.2	2,007.7
Trenton-Mercer	West Trenton	639.3	444.0	1,083.2
Trenton-Robbinsville	Robbinsville	8.5	6.5	15.0
Vineland Downstown	Vineland	11.5	8.8	20.3
Woodbine Municipal	Woodbine	12.5	9.5	22.0
Other Airports		17.5	12.9	30.4
New Jersey Total		**4,077**	**3,013**	**7,090**

1/ = GA related employment estimated

General aviation was responsible for approximately 4,077 jobs at New Jersey airports in 2001. This does not include jobs at non-aviation businesses which may be located on an airport. For instance, employees at an on-airport industrial park are not included.

The multiplier effect creates secondary employment impacts that stem from the direct employment impacts associated with New Jersey's airport tenants. For example, an employee at nearby catering company may owe a portion of his job to a local airport because the caterer frequently provides catering services to an airport FBO, in order for the FBO to support corporate general aviation users at the airport. Therefore, as a result of on-airport tenant activity, additional secondary employment is created. The results of the economic modeling process utilized in this study indicate that secondary impacts associated with the day-to-day operation of New Jersey's airports add over 3,013 full-time positions to the economy. When direct and secondary employment is considered, New Jersey's airport tenants contributed nearly 7,090 jobs to New Jersey's employment base in 2001.

2. General Aviation Visitor Employment

Visitors arriving at a New Jersey airport via a general aviation aircraft typically spend money during their visit, supporting jobs in the airport's market area. By estimating the number of general aviation visitors arriving to airports and their spending patterns, the number of jobs supported by visitors can be estimated. The number of New Jersey jobs supported by general aviation visitors is shown in **Table 6**.

Direct general aviation visitor employment impacts are distributed across a variety of businesses; however, the majority are in the hotel/motel, restaurant, recreational and entertainment, and retail sectors. General aviation activity and the spending created by general aviation visitors, supported approximately 7,700 full-time jobs in New Jersey. These are in addition to airport tenant jobs classified as first-round impacts.

Economic modeling conducted in this study estimates secondary impacts stemming from general aviation visitors resulted in more than 3,270 additional full-time jobs. When direct and secondary visitor-related employment impacts are combined, approximately 10,960 jobs can be attributed to visitors using general aviation in New Jersey.

3. Total Employment

Over 18,000 jobs in New Jersey are linked to general aviation. Employment impacts by airport are presented in **Table 7**. On-airport tenants and visitors using general aviation aircraft at New Jersey's public-use airports are estimated to create a direct employment impact of approximately 11,770 jobs. The multiplier effect is responsible for approximately 6,280 additional jobs. In total, 18,050 jobs are attributable to New Jersey's general aviation airports.

Table 6
VISITOR EMPLOYMENT

Airport Name	Associated City	Direct Employment	Secondary Employment	Total Employment
Aeroflex-Andover Field	Andover	7.5	3.2	10.7
Alexandria Field	Pittstown	18.9	8.0	26.9
Atlantic City International 1/	Atlantic City	295.0	125.4	420.4
Bader Field	Atlantic City	5.7	2.4	8.1
Blairstown	Blairstown	14.7	6.3	21.0
Camden County	Berlin	4.3	1.8	6.1
Cape May County	Wildwood	120.3	51.2	171.5
Central Jersey Regional	Manville	37.1	15.8	52.9
Cross Keys	Cross Keys	32.6	13.9	46.5
Essex County	Caldwell	1,044.0	443.9	1,487.9
Flying W	Lumberton	21.8	9.3	31.1
Greenwood Lake	West Milford	18.7	8.0	26.7
Hammonton Municipal	Hammonton	11.9	5.1	17.0
Lakewood	Lakewood	8.7	3.7	12.4
Lincoln Park	Lincoln	58.0	24.7	82.7
Linden	Linden	40.7	17.3	58.0
Marlboro	Matawan	7.3	3.1	10.4
Millville Municipal	Millville	151.4	64.4	215.8
Monmouth Executive	Belmar/Farmingdale	169.3	72.0	241.3
Morristown Municipal	Morristown	1,757.7	747.4	2,505.1
Newark Liberty International 1/	Newark	195.1	83.0	278.1
Ocean City Municipal	Ocean City	9.2	3.9	13.1
Old Bridge	Old Bridge	13.7	5.8	19.5
Princeton	Princeton/Rocky Hill	32.0	13.6	45.6
Robert J. Miller Airpark	Toms River	42.8	18.2	61.0
Sky Manor	Pittstown	16.7	7.1	23.8
Solberg-Hunterdon	Readington	37.0	15.7	52.7
Somerset	Somerville	25.8	11.0	36.8
South Jersey Regional	Mount Holly	54.8	23.3	78.1
Spitfire Aerodrome	Pedricktown	1.3	0.6	1.9
Sussex	Sussex	21.6	9.2	30.8
Teterboro	Teterboro	2,712.5	1,153.4	3,865.9
Trenton-Mercer	West Trenton	659.9	280.6	940.5
Trenton-Robbinsville	Robbinsville	10.9	4.6	15.5
Vineland Downstown	Vineland	0.6	0.3	0.9
Woodbine Municipal	Woodbine	10.7	4.5	15.2
Other Airports		18.3	7.9	26.2
New Jersey Total		**7,689**	**3,270**	**10,958**

1/ = GA related employment estimated

Table 7
TOTAL EMPLOYMENT (TENANT AND VISITOR)

Airport Name	Associated City	Direct Employment	Secondary Employment	Total Employment
Aeroflex-Andover Field	Andover	18.0	11.0	29.0
Alexandria Field	Pittstown	36.9	21.8	58.7
Atlantic City International 1/	Atlantic City	375.0	186.8	561.8
Bader Field	Atlantic City	9.2	5.0	14.2
Blairstown	Blairstown	20.2	10.4	30.6
Camden County	Berlin	15.3	10.2	25.5
Cape May County	Wildwood	145.8	70.1	215.9
Central Jersey Regional	Manville	58.6	32.2	90.8
Cross Keys	Cross Keys	47.6	25.3	72.9
Essex County	Caldwell	1,207.0	567.4	1,774.4
Flying W	Lumberton	58.3	37.3	95.6
Greenwood Lake	West Milford	29.2	15.8	45.0
Hammonton Municipal	Hammonton	17.9	9.7	27.6
Lakewood	Lakewood	17.7	10.6	28.3
Lincoln Park	Lincoln	115.0	67.6	182.6
Linden	Linden	161.2	109.6	270.8
Marlboro	Matawan	23.3	15.4	38.7
Millville Municipal	Millville	1,001.4	716.4	1,717.8
Monmouth Executive	Belmar/Farmingdale	254.3	136.7	391.0
Morristown Municipal	Morristown	2,171.2	1,008.6	3,179.8
Newark Liberty International 1/	Newark	245.1	121.4	366.5
Ocean City Municipal	Ocean City	27.2	17.3	44.5
Old Bridge	Old Bridge	24.7	14.2	38.9
Princeton	Princeton/Rocky Hill	65.0	38.9	103.9
Robert J. Miller Airpark	Toms River	73.3	41.3	114.6
Sky Manor	Pittstown	52.7	34.2	86.9
Solberg-Hunterdon	Readington	61.5	34.5	96.0
Somerset	Somerville	40.8	22.4	63.2
South Jersey Regional	Mount Holly	99.8	57.7	157.5
Spitfire Aerodrome	Pedricktown	5.3	3.7	9.0
Sussex	Sussex	46.1	27.5	73.6
Teterboro	Teterboro	3,851.0	2,022.6	5,873.6
Trenton-Mercer	West Trenton	1,299.2	724.6	2,023.7
Trenton-Robbinsville	Robbinsville	19.4	11.1	30.5
Vineland Downstown	Vineland	12.1	9.1	21.2
Woodbine Municipal	Woodbine	23.2	14.0	37.2
Other Airports		35.8	20.8	56.6
New Jersey Total		**11,765**	**6,283**	**18,048**

1/ = GA related employment estimated

B. Payroll Impacts

Jobs, both direct and secondary, supported by airport tenants and visitors to New Jersey's airports, introduce wages and benefits into to the statewide economy. Payroll impacts were calculated for on-airport tenants and general aviation visitors using the system of general aviation airports in New Jersey.

1. Tenant Payroll

Table 8 shows wages and benefits paid by tenants at New Jersey's airports. Statewide, direct payroll impacts total almost $265 million. Secondary wages and salaries, created as direct payroll impacts ripple throughout the New Jersey economy, are measured through the use of an economic model model. This secondary payroll impact related to tenants at New Jersey's system of airports was estimated at more than $150 million. Direct and secondary payroll impacts result in nearly $417 million in total tenant payroll impacts.

2. General Aviation Visitor Payroll

Wages and salaries in New Jersey that are attributable to visitors by general aviation aircraft are shown in **Table 9.** Direct payroll impacts include salary and benefits paid to employees working at visitor-related businesses and other service industries that are utilized by general aviation visitors. Approximately $170 million in statewide direct payroll impacts were attributable to general aviation visitors. Secondary wage and salary impacts from general aviation visitors were estimated at $141 million. When direct and secondary payroll impacts stemming from general aviation visitors were combined, a total payroll impact of almost $311 million is produced.

3. Total Payroll

Table 10 identifies the combined total payroll impact of on-airport tenants and general aviation visitors. General aviation in New Jersey was responsible for generating approximately $368 million in wage and salary payments. Secondary impacts provided $257 million in additional benefits. Combined, direct and secondary payroll associated with New Jersey airport tenants and general aviation visitors created almost $625 million in annual payroll impacts.

Table 8
ON-AIRPORT TENANT PAYROLL

Airport Name	Associated City	Direct Payroll	Secondary Payroll	Total Payroll
Aeroflex-Andover Field	Andover	$ 395,200	$ 223,700	$ 618,800
Alexandria Field	Pittstown	$ 412,600	$ 250,900	$ 663,500
Atlantic City International 1/	Atlantic City	$ 5,292,000	$ 6,444,100	$ 13,541,300
Bader Field	Atlantic City	$ 108,400	$ 61,800	$ 170,100
Blairstown	Blairstown	$ 155,600	$ 86,300	$ 241,900
Camden County	Berlin	$ 260,000	$ 158,100	$ 418,100
Cape May County	Wildwood	$ 784,800	$ 439,900	$ 1,224,600
Central Jersey Regional	Manville	$ 690,200	$ 415,500	$ 1,105,700
Cross Keys	Cross Keys	$ 434,800	$ 260,300	$ 695,100
Essex County	Caldwell	$ 4,774,800	$ 2,848,500	$ 7,623,300
Flying W	Lumberton	$ 1,489,200	$ 905,400	$ 2,394,600
Greenwood Lake	West Milford	$ 347,200	$ 194,500	$ 541,600
Hammonton Municipal	Hammonton	$ 140,900	$ 85,700	$ 226,500
Lakewood	Lakewood	$ 239,000	$ 145,300	$ 384,300
Lincoln Park	Lincoln	$ 2,151,200	$ 1,258,200	$ 3,409,400
Linden	Linden	$ 3,641,300	$ 2,205,600	$ 5,846,800
Marlboro	Matawan	$ 455,200	$ 276,800	$ 731,900
Millville Municipal	Millville	$ 32,902,900	$ 20,004,900	$ 52,907,800
Monmouth Executive	Belmar/Farmingdale	$ 2,357,500	$ 1,400,300	$ 3,757,800
Morristown Municipal	Morristown	$ 26,128,000	$ 15,575,400	$ 41,703,400
Newark Liberty International 1/	Newark	$ 70,000,000	$ 33,005,000	$ 103,005,000
Ocean City Municipal	Ocean City	$ 757,300	$ 435,300	$ 1,192,600
Old Bridge	Old Bridge	$ 256,000	$ 155,600	$ 411,600
Princeton	Princeton/Rocky Hill	$ 939,800	$ 571,400	$ 1,511,200
Robert J. Miller Airpark	Toms River	$ 1,478,400	$ 885,500	$ 2,363,900
Sky Manor	Pittstown	$ 1,383,800	$ 827,800	$ 2,211,600
Solberg-Hunterdon	Readington	$ 1,008,300	$ 613,100	$ 1,621,300
Somerset	Somerville	$ 724,800	$ 436,600	$ 1,161,400
South Jersey Regional	Mount Holly	$ 1,945,800	$ 1,178,900	$ 3,124,700
Spitfire Aerodrome	Pedricktown	$ 104,000	$ 63,200	$ 167,200
Sussex	Sussex	$ 669,100	$ 379,500	$ 1,048,500
Teterboro	Teterboro	$ 56,716,700	$ 34,001,900	$ 90,718,600
Trenton-Mercer	West Trenton	$ 44,219,600	$ 23,559,800	$ 67,779,400
Trenton-Robbinsville	Robbinsville	$ 238,400	$ 144,900	$ 383,300
Vineland Downstown	Vineland	$ 270,000	$ 164,200	$ 434,200
Woodbine Municipal	Woodbine	$ 342,400	$ 199,900	$ 542,200
Other Airports		$ 472,300	$ 279,900	$ 752,100
New Jersey Total		**$ 264,687,500**	**$ 150,143,700**	**$ 416,635,300**

1/ = GA related payroll estimated

Table 9
VISITOR PAYROLL

Airport Name	Associated City	Direct Payroll	Secondary Payroll	Total Payroll
Aeroflex-Andover Field	Andover	$ 165,800	$ 137,500	$ 303,300
Alexandria Field	Pittstown	$ 417,700	$ 346,500	$ 764,200
Atlantic City International 1/	Atlantic City	$ 6,519,500	$ 5,407,700	$ 11,927,200
Bader Field	Atlantic City	$ 126,000	$ 104,500	$ 230,500
Blairstown	Blairstown	$ 324,900	$ 269,500	$ 594,400
Camden County	Berlin	$ 95,000	$ 78,800	$ 173,800
Cape May County	Wildwood	$ 2,658,600	$ 2,205,200	$ 4,863,800
Central Jersey Regional	Manville	$ 819,900	$ 680,100	$ 1,500,000
Cross Keys	Cross Keys	$ 720,500	$ 597,600	$ 1,318,100
Essex County	Caldwell	$ 23,072,400	$ 19,137,900	$ 42,210,300
Flying W	Lumberton	$ 481,800	$ 399,600	$ 881,400
Greenwood Lake	West Milford	$ 413,300	$ 342,800	$ 756,100
Hammonton Municipal	Hammonton	$ 263,000	$ 218,200	$ 481,200
Lakewood	Lakewood	$ 192,300	$ 159,500	$ 351,800
Lincoln Park	Lincoln	$ 1,281,800	$ 1,063,200	$ 2,345,000
Linden	Linden	$ 899,500	$ 746,100	$ 1,645,600
Marlboro	Matawan	$ 161,300	$ 133,800	$ 295,100
Millville Municipal	Millville	$ 3,345,900	$ 2,775,300	$ 6,121,200
Monmouth Executive	Belmar/Farmingdale	$ 3,741,500	$ 3,103,500	$ 6,845,000
Morristown Municipal	Morristown	$ 38,845,200	$ 32,221,000	$ 71,066,200
Newark Liberty International 1/	Newark	$ 4,311,700	$ 3,576,400	$ 7,888,100
Ocean City Municipal	Ocean City	$ 203,300	$ 168,600	$ 371,900
Old Bridge	Old Bridge	$ 302,800	$ 251,200	$ 554,000
Princeton	Princeton/Rocky Hill	$ 707,200	$ 586,600	$ 1,293,800
Robert J. Miller Airpark	Toms River	$ 945,900	$ 784,600	$ 1,730,500
Sky Manor	Pittstown	$ 369,100	$ 306,200	$ 675,300
Solberg-Hunterdon	Readington	$ 817,700	$ 678,300	$ 1,496,000
Somerset	Somerville	$ 570,200	$ 473,000	$ 1,043,200
South Jersey Regional	Mount Holly	$ 1,211,100	$ 1,004,600	$ 2,215,700
Spitfire Aerodrome	Pedricktown	$ 28,700	$ 23,800	$ 52,500
Sussex	Sussex	$ 477,400	$ 396,000	$ 873,400
Teterboro	Teterboro	$ 59,946,300	$ 49,723,700	$ 109,670,000
Trenton-Mercer	West Trenton	$ 14,583,800	$ 12,096,800	$ 26,680,600
Trenton-Robbinsville	Robbinsville	$ 240,900	$ 199,800	$ 440,700
Vineland Downstown	Vineland	$ 13,300	$ 11,000	$ 24,300
Woodbine Municipal	Woodbine	$ 236,500	$ 196,200	$ 432,700
Other Airports		$ 404,400	$ 335,600	$ 740,000
New Jersey Total		**$ 169,916,200**	**$ 140,940,700**	**$ 310,856,900**

1/ = GA related payroll estimated

Table 10
TOTAL PAYROLL (TENANT AND VISITOR)

Airport Name	Associated City	Direct Payroll	Secondary Payroll	Total Payroll
Aeroflex-Andover Field	Andover	$ 561,000	$ 361,200	$ 922,100
Alexandria Field	Pittstown	$ 830,300	$ 597,400	$ 1,427,700
Atlantic City International 1/	Atlantic City	$ 11,811,500	$ 8,625,200	$ 20,436,700
Bader Field	Atlantic City	$ 234,400	$ 166,300	$ 400,600
Blairstown	Blairstown	$ 480,500	$ 355,800	$ 836,300
Camden County	Berlin	$ 355,000	$ 236,900	$ 591,900
Cape May County	Wildwood	$ 3,443,400	$ 2,645,100	$ 6,088,400
Central Jersey Regional	Manville	$ 1,510,100	$ 1,095,600	$ 2,605,700
Cross Keys	Cross Keys	$ 1,155,300	$ 857,900	$ 2,013,200
Essex County	Caldwell	$ 27,847,200	$ 21,986,400	$ 49,833,600
Flying W	Lumberton	$ 1,971,000	$ 1,305,000	$ 3,276,000
Greenwood Lake	West Milford	$ 760,500	$ 537,300	$ 1,297,700
Hammonton Municipal	Hammonton	$ 403,900	$ 303,900	$ 707,700
Lakewood	Lakewood	$ 431,300	$ 304,800	$ 736,100
Lincoln Park	Lincoln	$ 3,433,000	$ 2,321,400	$ 5,754,400
Linden	Linden	$ 4,540,800	$ 2,951,700	$ 7,492,400
Marlboro	Matawan	$ 616,500	$ 410,600	$ 1,027,000
Millville Municipal	Millville	$ 36,248,800	$ 22,780,200	$ 59,029,000
Monmouth Executive	Belmar/Farmingdale	$ 6,099,000	$ 4,503,800	$ 10,602,800
Morristown Municipal	Morristown	$ 64,973,200	$ 47,796,400	$ 112,769,600
Newark Liberty International 1/	Newark	$ 7,619,200	$ 5,587,400	$ 13,206,600
Ocean City Municipal	Ocean City	$ 960,600	$ 603,900	$ 1,564,500
Old Bridge	Old Bridge	$ 558,800	$ 406,800	$ 965,600
Princeton	Princeton/Rocky Hill	$ 1,647,000	$ 1,158,000	$ 2,805,000
Robert J. Miller Airpark	Toms River	$ 2,424,300	$ 1,670,100	$ 4,094,400
Sky Manor	Pittstown	$ 1,752,900	$ 1,134,000	$ 2,886,900
Solberg-Hunterdon	Readington	$ 1,826,000	$ 1,291,400	$ 3,117,300
Somerset	Somerville	$ 1,295,000	$ 909,600	$ 2,204,600
South Jersey Regional	Mount Holly	$ 3,156,900	$ 2,183,500	$ 5,340,400
Spitfire Aerodrome	Pedricktown	$ 132,700	$ 87,000	$ 219,700
Sussex	Sussex	$ 1,146,500	$ 775,500	$ 1,921,900
Teterboro	Teterboro	$ 116,663,000	$ 83,725,600	$ 200,388,600
Trenton-Mercer	West Trenton	$ 58,803,400	$ 35,656,600	$ 94,460,000
Trenton-Robbinsville	Robbinsville	$ 479,300	$ 344,700	$ 824,000
Vineland Downstown	Vineland	$ 283,300	$ 175,200	$ 458,500
Woodbine Municipal	Woodbine	$ 578,900	$ 396,100	$ 974,900
Other Airports		$ 876,700	$ 615,500	$ 1,492,100
New Jersey Total		**$ 367,911,200**	**$ 256,863,800**	**$ 624,773,900**

1/ = GA related payroll estimated

C. Output Impacts

Output is defined as gross sales and average annual capital expenditures for airport tenants, with one exception: Government and airline tenants located on the airports. Government and airline output is defined as the sum of annual capital expenditures, payroll, and operating expenses since gross sales data is not available. Output related to general aviation visitors is defined as expenditures made during their visits, typically at hotels/motels, restaurants, or on transportation and retail. Output impacts for airport tenants and visitors are discussed below.

1. Tenant Output

Table 11 shows direct, secondary and total airport tenant output for each New Jersey airport. When aviation-related businesses and government tenants at airports spend monies, their expenditures ripple throughout New Jersey's economy. For example if an airport FBO were to construct a hangar on an airport, a significant amount of money would be spent in the area's economy on construction materials, labor, and other services.

Total direct annual output by on-airport tenants is $720 million. Secondary tenant related output is over $511 million. When direct and secondary impacts are combined, the total output for on-airport tenants at New Jersey's airports is estimated at over $1.2 billion. These figures represent data for all general aviation activity at system airports. It should be noted that impacts for Atlantic City International and Newark Liberty International, as shown in Table 11, are only related to general aviation activities.

2. General Aviation Visitor Output

Estimated output attributable to general aviation visitors to New Jersey airports is presented in **Table 12**. Direct output is generally comprised visitor expenditures for restaurants, hotels/motels, retail, entertainment, and other services. Total direct output from general aviation visitors was estimated at over $289 million. Once these direct impacts are introduced into the statewide economy, monies continue to circulate resulting in secondary impacts. Secondary impacts related to general aviation visitor output or spending were estimated at over $206 million. Visitors arriving to New Jersey's airports by general aviation aircraft were responsible for approximately $495 million in annual visitor output impacts.

3. Total Output

Table 13 shows total impact of tenant and general aviation visitor output. Statewide direct total output was over $1.0 billion. Secondary impacts were estimated at approximately $718 million. New Jersey's general aviation airports produced a total statewide output of over $1.7 billion when direct and secondary output impacts from tenants and general aviation visitors are combined.

Table 11
ON-AIRPORT TENANT OUTPUT

Airport Name	Associated City	Direct Output	Secondary Output	Total Output
Aeroflex-Andover Field	Andover	$ 1,403,400	$ 1,020,200	$ 2,423,600
Alexandria Field	Pittstown	$ 1,633,700	$ 1,158,000	$ 2,791,700
Atlantic City International 1/	Atlantic City	$ 18,176,000	$ 12,741,400	$ 30,917,400
Bader Field	Atlantic City	$ 194,700	$ 143,700	$ 338,300
Blairstown	Blairstown	$ 615,800	$ 446,600	$ 1,062,400
Camden County	Berlin	$ 1,398,800	$ 985,100	$ 2,383,800
Cape May County	Wildwood	$ 3,607,300	$ 2,632,200	$ 6,239,400
Central Jersey Regional	Manville	$ 2,206,200	$ 1,555,700	$ 3,761,900
Cross Keys	Cross Keys	$ 1,652,000	$ 1,167,200	$ 2,819,200
Essex County	Caldwell	$ 15,124,000	$ 10,694,400	$ 25,818,400
Flying W	Lumberton	$ 5,678,100	$ 3,991,200	$ 9,669,300
Greenwood Lake	West Milford	$ 1,157,700	$ 843,700	$ 2,001,300
Hammonton Municipal	Hammonton	$ 831,800	$ 583,100	$ 1,414,900
Lakewood	Lakewood	$ 1,067,000	$ 758,400	$ 1,825,400
Lincoln Park	Lincoln	$ 6,443,200	$ 4,630,600	$ 11,073,800
Linden	Linden	$ 13,364,500	$ 9,403,500	$ 22,768,000
Marlboro	Matawan	$ 1,738,900	$ 1,219,000	$ 2,957,900
Millville Municipal	Millville	$ 161,025,800	$ 112,879,100	$ 273,904,900
Monmouth Executive	Belmar/Farmingdale	$ 9,522,100	$ 6,748,000	$ 16,270,100
Morristown Municipal	Morristown	$ 92,522,900	$ 65,293,500	$ 157,816,400
Newark Liberty International 1/	Newark	$ 11,360,000	$ 7,963,400	$ 19,323,400
Ocean City Municipal	Ocean City	$ 2,045,600	$ 1,475,200	$ 3,520,800
Old Bridge	Old Bridge	$ 1,088,100	$ 762,800	$ 1,850,900
Princeton	Princeton/Rocky Hill	$ 4,168,300	$ 2,929,100	$ 7,097,300
Robert J. Miller Airpark	Toms River	$ 3,941,300	$ 2,787,400	$ 6,728,700
Sky Manor	Pittstown	$ 2,839,800	$ 2,031,700	$ 4,871,500
Solberg-Hunterdon	Readington	$ 3,082,500	$ 2,167,700	$ 5,250,200
Somerset	Somerville	$ 3,389,600	$ 2,405,100	$ 5,794,600
South Jersey Regional	Mount Holly	$ 3,690,100	$ 2,622,800	$ 6,312,900
Spitfire Aerodrome	Pedricktown	$ 833,000	$ 583,900	$ 1,416,900
Sussex	Sussex	$ 2,340,400	$ 1,684,900	$ 4,025,200
Teterboro	Teterboro	$ 200,701,800	$ 142,127,500	$ 342,829,300
Trenton-Mercer	West Trenton	$ 135,730,900	$ 99,334,300	$ 235,065,200
Trenton-Robbinsville	Robbinsville	$ 943,400	$ 661,300	$ 1,604,700
Vineland Downstown	Vineland	$ 774,800	$ 543,100	$ 1,317,800
Woodbine Municipal	Woodbine	$ 1,636,000	$ 1,193,700	$ 2,829,700
Other Airports		$ 1,699,700	$ 1,207,000	$ 2,906,600
New Jersey Total		**$ 719,629,200**	**$ 511,375,500**	**$ 1,231,003,800**

1/ = GA related output estimated

Table 12
VISITOR OUTPUT

Airport Name	Associated City	Direct Output	Secondary Output	Total Output
Aeroflex-Andover Field	Andover	$ 283,000	$ 202,100	$ 485,100
Alexandria Field	Pittstown	$ 710,900	$ 507,700	$ 1,218,600
Atlantic City International 1/	Atlantic City	$ 11,090,700	$ 7,921,000	$ 19,011,700
Bader Field	Atlantic City	$ 212,500	$ 151,800	$ 364,300
Blairstown	Blairstown	$ 552,000	$ 394,200	$ 946,200
Camden County	Berlin	$ 160,500	$ 114,600	$ 275,100
Cape May County	Wildwood	$ 4,521,900	$ 3,229,500	$ 7,751,400
Central Jersey Regional	Manville	$ 1,394,600	$ 996,000	$ 2,390,600
Cross Keys	Cross Keys	$ 1,225,200	$ 875,000	$ 2,100,200
Essex County	Caldwell	$ 39,249,000	$ 28,031,600	$ 67,280,600
Flying W	Lumberton	$ 818,500	$ 584,600	$ 1,403,100
Greenwood Lake	West Milford	$ 704,600	$ 503,200	$ 1,207,800
Hammonton Municipal	Hammonton	$ 447,400	$ 319,500	$ 766,900
Lakewood	Lakewood	$ 328,300	$ 234,500	$ 562,800
Lincoln Park	Lincoln	$ 2,179,600	$ 1,556,700	$ 3,736,300
Linden	Linden	$ 1,530,500	$ 1,093,100	$ 2,623,600
Marlboro	Matawan	$ 274,500	$ 196,000	$ 470,500
Millville Municipal	Millville	$ 5,692,800	$ 4,065,800	$ 9,758,600
Monmouth Executive	Belmar/Farmingdale	$ 6,366,400	$ 4,546,900	$ 10,913,300
Morristown Municipal	Morristown	$ 66,079,300	$ 47,193,800	$ 113,273,100
Newark Liberty International 1/	Newark	$ 7,332,800	$ 5,237,100	$ 12,569,900
Ocean City Municipal	Ocean City	$ 345,000	$ 246,400	$ 591,400
Old Bridge	Old Bridge	$ 516,400	$ 368,800	$ 885,200
Princeton	Princeton/Rocky Hill	$ 1,204,300	$ 860,100	$ 2,064,400
Robert J. Miller Airpark	Toms River	$ 1,608,900	$ 1,149,100	$ 2,758,000
Sky Manor	Pittstown	$ 627,200	$ 447,900	$ 1,075,100
Solberg-Hunterdon	Readington	$ 1,389,300	$ 992,200	$ 2,381,500
Somerset	Somerville	$ 971,200	$ 693,600	$ 1,664,800
South Jersey Regional	Mount Holly	$ 2,060,500	$ 1,471,600	$ 3,532,100
Spitfire Aerodrome	Pedricktown	$ 50,200	$ 35,900	$ 86,100
Sussex	Sussex	$ 812,300	$ 580,100	$ 1,392,400
Teterboro	Teterboro	$ 101,975,000	$ 72,830,500	$ 174,805,500
Trenton-Mercer	West Trenton	$ 24,809,300	$ 17,718,800	$ 42,528,100
Trenton-Robbinsville	Robbinsville	$ 410,800	$ 293,400	$ 704,200
Vineland Downstown	Vineland	$ 24,000	$ 17,100	$ 41,100
Woodbine Municipal	Woodbine	$ 400,400	$ 286,000	$ 686,400
Other Airports		$ 692,500	$ 494,600	$ 1,187,100
New Jersey Total		**$ 289,052,300**	**$ 206,440,800**	**$ 495,493,100**

1/ = GA related output estimated

Table 13
TOTAL OUTPUT (TENANT AND VISITOR)

Airport Name	Associated City	Direct Output	Secondary Output	Total Output
Aeroflex-Andover Field	Andover	$ 1,686,400	$ 1,222,300	$ 2,908,700
Alexandria Field	Pittstown	$ 2,344,600	$ 1,665,700	$ 4,010,300
Atlantic City International 1/	Atlantic City	$ 29,266,700	$ 20,662,400	$ 49,929,100
Bader Field	Atlantic City	$ 407,200	$ 295,500	$ 702,600
Blairstown	Blairstown	$ 1,167,800	$ 840,800	$ 2,008,600
Camden County	Berlin	$ 1,559,300	$ 1,099,700	$ 2,658,900
Cape May County	Wildwood	$ 8,129,200	$ 5,861,700	$ 13,990,800
Central Jersey Regional	Manville	$ 3,600,800	$ 2,551,700	$ 6,152,500
Cross Keys	Cross Keys	$ 2,877,200	$ 2,042,200	$ 4,919,400
Essex County	Caldwell	$ 54,373,000	$ 38,726,000	$ 93,099,000
Flying W	Lumberton	$ 6,496,600	$ 4,575,800	$ 11,072,400
Greenwood Lake	West Milford	$ 1,862,300	$ 1,346,900	$ 3,209,100
Hammonton Municipal	Hammonton	$ 1,279,200	$ 902,600	$ 2,181,800
Lakewood	Lakewood	$ 1,395,300	$ 992,900	$ 2,388,200
Lincoln Park	Lincoln	$ 8,622,800	$ 6,187,300	$ 14,810,100
Linden	Linden	$ 14,895,000	$ 10,496,600	$ 25,391,600
Marlboro	Matawan	$ 2,013,400	$ 1,415,000	$ 3,428,400
Millville Municipal	Millville	$ 166,718,600	$ 116,944,900	$ 283,663,500
Monmouth Executive	Belmar/Farmingdale	$ 15,888,500	$ 11,294,900	$ 27,183,400
Morristown Municipal	Morristown	$ 158,602,200	$ 112,487,300	$ 271,089,500
Newark Liberty International 1/	Newark	$ 18,692,800	$ 13,200,500	$ 31,893,300
Ocean City Municipal	Ocean City	$ 2,390,600	$ 1,721,600	$ 4,112,200
Old Bridge	Old Bridge	$ 1,604,500	$ 1,131,600	$ 2,736,100
Princeton	Princeton/Rocky Hill	$ 5,372,600	$ 3,789,200	$ 9,161,700
Robert J. Miller Airpark	Toms River	$ 5,550,200	$ 3,936,500	$ 9,486,700
Sky Manor	Pittstown	$ 3,467,000	$ 2,479,600	$ 5,946,600
Solberg-Hunterdon	Readington	$ 4,471,800	$ 3,159,900	$ 7,631,700
Somerset	Somerville	$ 4,360,800	$ 3,098,700	$ 7,459,400
South Jersey Regional	Mount Holly	$ 5,750,600	$ 4,094,400	$ 9,845,000
Spitfire Aerodrome	Pedricktown	$ 883,200	$ 619,800	$ 1,503,000
Sussex	Sussex	$ 3,152,700	$ 2,265,000	$ 5,417,600
Teterboro	Teterboro	$ 302,676,800	$ 214,958,000	$ 517,634,800
Trenton-Mercer	West Trenton	$ 160,540,200	$ 117,053,100	$ 277,593,300
Trenton-Robbinsville	Robbinsville	$ 1,354,200	$ 954,700	$ 2,308,900
Vineland Downstown	Vineland	$ 798,800	$ 560,200	$ 1,358,900
Woodbine Municipal	Woodbine	$ 2,036,400	$ 1,479,700	$ 3,516,100
Other Airports		$ 2,392,200	$ 1,701,600	$ 4,093,700
New Jersey Total		**$ 1,008,681,500**	**$ 717,816,300**	**$ 1,726,496,900**

1/ = GA related output estimated

IV. QUALITATIVE AIRPORT BENEFITS

In addition to the quantitative benefits resulting from general aviation in New Jersey, presented in dollar terms in previous sections, there are also a number of qualitative benefits that must be discussed when the total benefit of an airport or an airport system is analyzed. Qualitative benefits are those factors for which dollar values cannot be readily assigned; however, they can occur at on airport on a daily basis. Qualitative benefits often add to the quality of life, health, welfare, and/or safety of residents in their market area.

As part of the inventory phase of the SASP, on-site airport visits were conducted to gather data. An important component of the on-site visits was to identify specific examples of qualitative benefits provided by each New Jersey airport. Common examples of qualitative benefits frequently occurring at New Jersey airports include as medical flights, police patrol, forest fire fighting, pest control, traffic reporting, educational opportunities, high profile visitors and government official transport, and recreational benefits. While the demographic characteristics of individual market areas and available facilities greatly influence each airport's ability to provide such benefits, each airport provides some type of qualitative benefits. **Exhibit 3** presents the specific benefits identified for each airport. While this matrix is not all encompassing, it does provide an important overview of the diversity of benefits that airports provide to New Jersey, beyond the creation of jobs, payroll, and output.

As noted in Exhibit 3, nearly all of the system airports provide recreational benefits. In this regard, the airports can be thought of as additional parkland or open space around the State. This particular benefit is especially important in the more densely developed and urbanized areas of the State where the airport's low-density development helps to contribute to the preservation of open areas and green space.

Information supplied by the airports themselves has highlighted some of the more notable examples of the qualitative benefits derived from New Jersey's airport system. Numerous life-saving emergency medical evacuations and Lifeflight operations occur at airports throughout the State. While all system airports may not support life-saving aircraft operations or major community events, all airports contribute in some way to the quality of life of New Jersey residents. Specific qualitative benefits are documented in the SASP summary for each airport.

Exhibit 3
QUALITATIVE AIRPORT BENEFITS

	Recreational Flying	Agricultural Spraying	Corporate/ business activity	Aerial inspections	Just-in-time	Resort visitors	Community events	Police/law enforcement	Prisoner transport	Military exercises/ training	Career training/ education
Aeroflex-Andover Field	H	L						L			
Alexandria Field	M	L	L	L	L	L	M	L	L	L	M
Monmouth Executive	H	M	H	M	L	H	L	H	L	M	H
Atlantic City International	M		H		M	H					M
Bader Field	H	L	H	L	L	H	M	M	L	L	M
Blairstown	H		L	L				L			M
Bucks	L	M						L		L	
Camden County	H	L	H	L	L	H	L	H	M	L	H
Cape May County	H		H				H	H	L	H	M
Central Jersey Regional	H	L	H	M	L	L	L	M	L	L	M
Cross Keys	H	L	L	L				L			H
Eagles Nest	L										
Essex County	M		M					M			L
Flying W	H	M	L				M	M		L	M
Greenwood Lake	H	L	L	L	L	L	M	L	L	L	H
Hackettstown	H						L				
Hammonton Municipal	H	H	M	H	L	M	L	L	L	M	M
Kroelinger											
Lakewood	H	L	M	L	L	M	L	L	L	L	H
Li Calzi Airpark	L										
Lincoln Park	H		M	L	L			M	L	M	H
Linden	H	L	H	L	L	M	L	M	L	L	M
Little Ferry Seaplane Base	M		L					L			
Marlboro	H	L	L	L	L	L	L	L	L	L	M
Millville Municipal	H	L	H						M	M	
Morristown Municipal	H	L	H	L		L		M			H
Newark Liberty International			H		H						
Newton	M										
Ocean City Municipal	H					H	L				
Old Bridge	H	L	L			M	M	L	L		H
Princeton	H		H				M				M
Red Lion	M						M	L	L	L	L
Red Wing	M	L				L					M
Robert J. Miller Airpark	H		M	L	L	M	M	H	M	M	H
Rudy's	L										
Sky Manor	H	L	M	L		M	L	L			M
Solberg-Hunterdon	H		M			H	M	M	L	L	H
Somerset	M	L	M	L	L	L	M	M	L	L	H
South Jersey Regional	H	L	H	L	L	L	L	L	L	L	H
Southern Cross	M	H		L			L	L			
Spitfire Aerodrome	M	L	M	L	L	L	L	M	L	L	M
Sussex	H	L	M	L		L	L	L	L		H
Teterboro	H	L	H	L	L	L	M	L	L	L	H
Trenton-Mercer	H	L	H	L	L	M	M	H	L	M	H
Trenton-Robbinsville	M	L	M	M	L	L	M	M	L	L	L
Trinca	M	L	L	L			L	L		L	
Twin Pine	H		L								
Vineland Downstown	M	H		M				L			
Woodbine Municipal	H	L	M	L		M	L	L	L	L	L

Key

H = High Frequency
M = Medium Frequency
L = Low Frequency

Exhibit 3
QUALITATIVE AIRPORT BENEFITS (Cont.)

	Search & Rescue, CAP	Environmental patrol	Emergency medical evacuation	Medical shipments/ patient transfer	Forest firefighting	Aerial photography/ surveying	Real estate tours	Aerial advertising/ banner towing	Traffic/news	Air shows	Community facilities	Other
Aeroflex-Andover Field	L	L	L		M	M					H	
Alexandria Field	M	L	L	L	M	M	L	L	L	L	L	Flight Instruction
Monmouth Executive	L	M	M	M	M	M	M	H	H	L	M	
Atlantic City International												
Bader Field	L	L	M	L	L	M	M	L	L	L	M	
Blairstown	L		L			M				L		
Bucks					L	L		L				
Camden County	L	L	M	M	L	M	M	L	M	L	M	
Cape May County	M		L	H						L	H	Museum
Central Jersey Regional	H	L	L	M	L	H	L	H	L		L	
Cross Keys	L		L		L	L		L				
Eagles Nest												
Essex County	L		M	M		L		L	H			Tours
Flying W	H		L	M		M			M		M	
Greenwood Lake	L	L	L	L	M	L	L	L	L		L	
Hackettstown	L		L		L	L						
Hammonton Municipal	L	L	L	L	M	L	L	L	M	L		
Kroelinger												
Lakewood	H	L	L	L	L	M	L	H	L	L	L	
Li Calzi Airpark												
Lincoln Park	M		M	M	L	M			L	M	L	
Linden	L	M	M	M	L	M	M	M	H			
Little Ferry Seaplane Base						L						
Marlboro	L	L	L	L	L	M	L	L	L	L	M	
Millville Municipal	M				M	L						
Morristown Municipal	M		M	M		L			M	L	L	
Newark Liberty International												
Newton												Skydiving
Ocean City Municipal	L	L	L	L		L			L	L	H	
Old Bridge	L			L		M			L			
Princeton			L	L		M	L					
Red Lion	L	L	L	L	M	M	L	L	L	L	L	
Red Wing					L		L					Charter
Robert J. Miller Airpark	L		M	H	H	H	H		L	L	H	
Rudy's												
Sky Manor	L			L		M	M					Hot Air Balloon
Solberg-Hunterdon	L	L	L	L	L	L	L	L	L	L	L	
Somerset	M	L	M	M	L	M	M	L	M	L	L	
South Jersey Regional	H	L	L	L	L	L	L	M		L		
Southern Cross			L		M	L	L	L				
Spitfire Aerodrome	L	L	L	L	L	M	L	L	L	L		
Sussex	L		L		L	L	L	L	L	M		
Teterboro	L	L	L	L	L	L	L	L	L	L	M	
Trenton-Mercer	M	M	M	M	L	M	L	L	L	L	M	Blimp staging, charity events
Trenton-Robbinsville	M	L	M	L	M	M	L	L	H	L	M	
Trinca	L	L	L		L	L				L	L	
Twin Pine			L			M						
Vineland Downstown		L	L		M	M		L				
Woodbine Municipal	L	L	L	L	L	M	H	H	L	L	L	

Key

H = High Frequency
M = Medium Frequency
L = Low Frequency

V. ECONOMIC IMPACT OF COMMERCIAL SERVICE AIRPORTS

To this point the Economic Impact Study has focused on general aviation. In addition to supporting general aviation activity, New Jersey's commercial service airports accommodate millions of passengers arriving by scheduled air carriers, including major/national and regional airlines, and charter operators. **Table 14** summarizes passenger activity at New Jersey's commercial service airports in 2001.

Table 14
2001 COMMERCIAL SERVICE PASSENGERS

Airport Name	2001 Total Commercial Service Enplanements
Atlantic City International Airport	415,540
Newark Liberty International Airport	15,279,000
Trenton Mercer Airport	57,950

The economic impacts associated with commercial passenger activities at New Jersey's airports have also been estimated in this analysis and are comprised of the following:

- Commercial Service Tenant Impacts
- Commercial Service Visitor Impacts

Commercial service tenant impacts result from the jobs, payroll, and economic activity created by airlines and charter operators that enplane and deplane passengers at New Jersey's commercial service airports. Commercial service airlines and charter operators employ a significant number of employees including pilots, mechanics, flight attendants, customer service representatives, and baggage handlers to facilitate their operations at New Jersey airports. Furthermore, many off-airport businesses provide services and/or supplies to the air carriers. As a result, the jobs, payroll, and economic activity associated with on-airport commercial service tenants extend beyond airport boundaries and create impacts throughout the State.

Commercial service visitor impacts are the result of visiting passengers arriving to New Jersey via airline or charter service accommodated at one of the State's commercial service airports. After these visitors arrive, whether traveling for business or pleasure, they create economic activity in the State as a result of their spending on products and services such as hotels, transportation, food and beverage, entertainment, and retail purchases. Many service-related and tourism jobs in the State are directly tied to commercial service visitors, and visitor spending circulates through the State's economy creating successive waves of benefits at nearly every level.

The estimated total economic impact of commercial service activities at New Jersey air carrier airports is presented in **Table 15**.

Table 15
COMMERCIAL SERVICE TOTAL ECONOMIC IMPACTS

Employment	**Direct**	**Secondary**	**Total**
Atlantic City International	5,474.0	3,212.6	8,686.6
Newark Liberty International	130,996.0	76,430.5	207,426.5
Trenton Mercer	195.0	104.0	299.0
New Jersey Total	**136,665.0**	**79,747.1**	**216,412.1**
Payroll	**Direct**	**Secondary**	**Total**
Atlantic City International	$ 211,209,100	$ 164,836,600	$ 376,045,700
Newark Liberty International	$ 3,525,713,600	$ 2,596,901,400	$ 6,122,615,000
Trenton Mercer	$ 4,309,500	$ 3,481,800	$ 7,791,300
New Jersey Total	**3,741,232,200**	**2,765,219,800**	**6,506,452,000**
Output	**Direct**	**Secondary**	**Total**
Atlantic City International	$ 485,718,300	$ 343,199,900	$ 828,918,100
Newark Liberty International	$ 6,635,460,000	$ 4,740,075,700	$ 11,375,535,700
Trenton Mercer	$ 5,794,600	$ 4,230,100	$ 10,024,700
New Jersey Total	**7,126,972,900**	**5,087,505,700**	**12,214,478,500**

Source: Wilbur Smith Associates

As shown in Table 15, commercial service activities at New Jersey airports generate employment impacts to the Statewide economy totaling over 216,000 full-time positions, payroll impacts of over $6.5 billion, and over $12.2 billion in annual economic output. It is important to note that the impacts identified for Atlantic City International Airport include the impacts associated with the FAA's William J. Hughes Technical Center and other government entities with operations based on the airport.

VI. BUSINESS USE OF NEW JERSEY AIRPORTS

Many businesses throughout the U.S., even those whose primary product is in no way related to aviation, depend on commercial service airlines, as well as on general aviation aircraft to add to their productivity and efficiency. This economic impact analysis has quantified the economic benefits associated with the activities of aviation-related on-airport tenants and of the visitors who arrive in the State via general aviation aircraft and commercial airlines. In addition, the many qualitative health, welfare, and safety benefits of New Jersey's system of airports have also been highlighted. 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 employers are the benefactors of valued-added benefits that result from the increased efficiency of air travel. This section discusses the additional benefits that non-aviation businesses throughout New Jersey gain as a result of the operation of the State's system of airports.

New Jersey's airports and the aviation activity that they support are essential to the economic vitality of the citizens and businesses of New Jersey. Without these airports, the State would be severely hampered in its ability to participate in an increasingly global community and marketplace. Commercial air service makes possible the quick movement of millions of people and millions of

dollars worth of goods to markets around the world. General aviation is also critical to local, domestic, and worldwide transport of personnel and materials. New Jersey needs to be able to compete in global markets, and there is often no practical alternative to air transportation. Similarly, the growth of a competitive domestic economy depends more and more on the ability to move by aircraft.

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 2002* indicates that approximately 356 *Fortune 500* companies operate business aircraft. In addition, 89 of the *Fortune 100* companies operate general aviation aircraft. According to the NBAA analysis, specific financial advantages were identified for companies operating business aircraft over non-operating firms. As detailed below, businesses that operate aircraft consistently outperform non-operators in key economic performance measures, such as annual sales volume, number of employees, value of assets, stockholder's equity, and annual income. The study performed by Aviation Data Services (AVDataInc) of Wichita, Kansas concluded the following:

- *There were more than twice as many aircraft-operating companies as non-operators' among the Fortune 500.*
- *Sales of all Fortune 500 aircraft operators were $6.1 trillion, while sales of non-operators totaled approximately $1.0 trillion.*
- *The net income of all operators was more than $394 billion in 2000; non-operators' total income in that year was $60 billion.*
- *Operators collectively had over $15 trillion in assets; non-operators' assets totaled $2.7 trillion.*
- *Net income per employee for operating companies was more than $19,000, whereas net income per employee only was $16,000 for non-operating companies.*
- *Stockholders' equity in operating companies was over $2.5 trillion; equity in non-operators was approximately $360 billion.*

Business use of general aviation aircraft can range from the rental of small single-engine aircraft to multiple aircraft corporate fleets that are supported by dedicated flight crews and mechanics. The use of general aviation aircraft allows employers to efficiently transport priority personnel and air cargo. Businesses use general aviation aircraft to link multiple office locations and to reach existing and potential customers. The use of business aircraft by smaller companies has escalated as fractional ownership, various chartering, leasing, time-sharing, interchange agreements, partnerships, and management contracts have emerged. NBAA statistics support this claim by indicating that the number of flight departments among all the nation's businesses increased from 6,584 in 1991 to 8,778 in 2000, an increase of approximately 33 percent. Fractional ownership arrangements have also experienced a recent rapid growth. In 1998, NBAA estimated that 1,125 companies used fractional ownership arrangements; by 2000 that number had grown to 1,693

companies, a growth of over 50 percent in a single year.

According to NBAA research, a company's flexibility to utilize general aviation airports located closer to one's final destination, verses using highly congested commercial service airports, is a vital part of the utility of general aviation aircraft. In fact, most operators of business aircraft prefer to use reliever airports in major metropolitan areas instead of airline hubs whenever possible. For example, much of the general aviation traffic associated with travel to and from the New York City area is supported by general aviation airports in the area instead of major air carrier airports. At air carrier airports in and around New York City, including Newark-Liberty, LaGuardia, and Kennedy, general aviation activity comprises approximately five percent of total aircraft operations because most business aircraft operators utilize alternative airports, such as Teterboro or Morristown Municipal in New Jersey or Westchester and Islip in New York.

Similarly, many of the most popular U.S. airports, in terms of general aviation itinerant operations, have little or no airline service. This is in part based on the volume of based aircraft in the populous states of California, Florida, Texas and New Jersey. The list of top 20 airports by general aviation operations is dominated by airports located in the aforementioned states; three are in New Jersey, Morristown Municipal, Teterboro, and Essex County. Considering the geographic size of New Jersey, compared to the other three high use states, the significance of general aviation to the State's economy is apparent.

Businesses typically choose to use general aviation because it provides safe, efficient, flexible, and reliable transportation. Of all the benefits provided to business by general aviation, flexibility is the highest ranked factor by all businesses using general aviation aircraft. While there are many reasons that businesses use general aviation in their day-to-day operation, the top 10 factors, according to the businesses contacted by the NBAA, are as follows:

- *Flexibility*
- *Time Savings*
- *Reliability*
- *Safety*
- *Improved Marketing Efficiency*
- *Facility/Branch Office Control*
- *Personnel Development Training*
- *Privacy and Comfort*
- *Efficiency*
- *Security*

One other benefit that is becoming increasingly important to both employees and employers using general aviation aircraft for business travel is that it minimizes non-business hours away from home. Using business aircraft increases the flexibility of scheduling and provides rapid, safe, and efficient access to meeting locations. These factors allow employees using general aviation aircraft to travel to and from their destination in less time than would be required by a traditional commercial service airline schedule. The positive effect that minimizing non-business time away from home has on employee morale and productivity is impossible to measure, yet growing in importance.

Many businesses in New Jersey, including those whose primary product is in no way related to aviation, benefit because of their use of scheduled air carrier service and/or their utilization of general aviation aircraft. The access to rapid, safe, and efficient transportation that New Jersey's airport system provides, allows businesses to generate more sales, increase production, and maximize productivity. Without the availability of the airport system, the productivity and employment levels of many employers in New Jersey could be adversely impacted. This section identifies the additional value-added benefit that New Jersey employers derive from the day-to-day operation of New Jersey's airport system.

A. Survey of New Jersey Businesses

Approximately 3,000 businesses throughout New Jersey were surveyed to assess their dependence on aviation. The 3,000 businesses included in the survey were randomly 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 general aviation.

The survey was generally oriented towards gaining information on business use of aviation. Survey results indicate that many businesses depend on the system of airports on a daily basis. Without access to general aviation, businesses indicated that their companies would be forced to cut employment or possibly relocate to an area with adequate access. Approximately 8 percent of all survey respondents indicated that their company owns, leases, or charters general aviation aircraft. In addition, approximately 18 percent of the respondents indicated that they have customers or suppliers who travel by general aviation to visit the surveyed company. Those respondents indicating that their business is supported by general aviation activity listed airports such as Teterboro, Trenton-Mercer, Morristown Municipal, and Linden as the ones they most frequently use. Atlantic City International is also a popular general aviation destination for non-aviation businesses. These statistics provide some insight as to the importance of aviation to New Jersey's business community.

Another insight into the value of general aviation comes from the "comments" section of the general aviation pilot and passenger survey that was conducted as part of this analysis. While pilot comments are not quantifiable in terms of dollars and jobs, they certainly provide testimonial as to how general aviation benefits a variety of business users. **Table 16** presents a sample of the comments pilots left on the survey regarding the value of the New Jersey aviation system.

Table 16
HOW GENERAL AVIATION SUPPORTS AREA BUSINESS

Aircraft Type	Comment
Jet	I could not operate without the NJ system. Teterboro, Morristown Municipal, and Trenton-Mercer provide fast access to major east coast business centers.
Multi-engine	GA in New Jersey provides a network of small airports that I use for business and recreation.
Single-engine	We flew in to attend the AVAYA Rowing Championships
Jet	Corporate aviation offers our business increased security and convenience of schedule
Multi-engine	As a VP of Marketing, I use aviation to visit customers and the home office.
Single-engine	I prefer to use private aircraft to the airlines to avoid long lines and delays.
Multi-engine	I use a business aircraft to support trips of 500 miles or greater.
Single-engine	New Jersey is an important refueling stop on our way to Boston
Single-engine	As a professional photographer, I use my aircraft to get to locations in the northeast for work and pleasure.
Single-engine	My aircraft is very valuable to my business

While the above table is not intended to be comprehensive, it does demonstrate the variety of ways that general aviation supports various businesses.

To estimate the statewide dependence on New Jersey's system of airports, businesses were surveyed and asked to provide information regarding their reliance on both general aviation and commercial air service for employment and sales. Considering the number and variety of businesses in the State, it is impossible to make exact estimates of the value-added benefit that New Jersey businesses derive from their use of the airport system.

Each respondent to the non-aviation business survey was asked to estimate the percentage of its New Jersey business activity that is dependent on the availability of general aviation and commercial air service. This survey focused on those types of businesses that have a high propensity to use aviation services, and a sample of the following SIC codes and types of businesses was surveyed:

- *SIC Codes 20 through 39* *Manufacturing*
- *SIC Codes 40 through 49* *Transportation, Communications, and Utilities*
- *SIC Code 60 through 67* *Finance, Insurance and Real Estate*

Statewide, surveyed employers estimated that nearly four percent of their business is dependent on general aviation services.

The final section of the New Jersey business survey asked respondents to rank the importance of various factors that they would consider if they are contemplating relocating or expanding. Overall, the availability of a commercial service airport ranked sixth for its importance, and proximity to general aviation facilities ranked 13. Highway access, available labor supply, and availability of a trained workforce ranked first, second, and third, respectively. The rankings of the key locational factors included in the survey are as follows:

- *Convenient highway access*
- *Available labor supply*
- *Availability of a trained workforce*
- *Tax incentives*
- *Proximity of suppliers*
- ***Proximity of a commercial service airport***
- *Urban business district*
- *Academic or cultural centers*
- *Raw materials*
- *Rail transportation facilities*
- *Water transportation facilities*
- *Historic location*
- ***General aviation airport***
- *Natural resources*

The overall results of the business survey may be summarized as follows:

- *Approximately 8 percent of the survey respondents indicated they use general aviation aircraft to support their business activities by owning, leasing, or chartering.*

- *Approximately 18 percent of the responding businesses indicated that they have customers or suppliers who rely on general aviation aircraft when conducting business with their company.*

- *Approximately 55 percent of the responding businesses indicated that they have customers or suppliers who rely on commercial airline service when conducting business with their company.*

- *Approximately 49 percent of the respondents indicated they use commercial airline service related to their routine business functions.*

VII. CONCLUSIONS

New Jersey's system of public-use airports, ranging in size and complexity from Newark Liberty International, an international airline hub, to small privately-owned turf strips, represents a major industry in the State. To most residents, airports go unnoticed until travel plans require a trip to a commercial service airport. Even more overlooked by the general public are New Jersey's general aviation airports. However, when the economic activities generated by these airports are examined,

it becomes evident that airports are major economic catalyst in the State. While often unnoticed or underappreciated, this analysis indicates that the benefits accrued to the State as a result of airports and aviation activity directly impact the jobs and livelihoods of many State residents.

The analysis undertaken in this economic impact study examines employment, payroll, and economic activity generated as a result of general aviation activity occurring at New Jersey's public-use airports. A series of survey efforts were conducted to gather data on the economic activities of airport operators, tenants, users, and visitors. Data was then analyzed in an input-output model that reliably estimates the ways in which on-site and visitor-related airport economic activity extends beyond the airport and ripples through the State's economy.

When direct and secondary economic impacts stemming from general aviation activity at New Jersey airports are summed, it can be determined that the economic output of airports and general aviation in New Jersey is significantly larger than the outputs of other more well-known industries such as farming and automobile manufacturing. The result of this analysis indicate that general aviation in New Jersey supports over 18,000 full-time positions and creates payroll impacts totaling almost $625 million. All told, it is estimated the general aviation activity in New Jersey creates over $1.7 billion in total economic activity, or output. Total employment, payroll, and output impacts of general aviation at New Jersey system airports are summarized in **Table 17**. Table 18 presents the total employment, payroll, and output impacts associated with general aviation of each system airport.

Table 17
2001 SUMMARY OF GENERAL AVIATION IMPACTS

Employment	**Direct**	**Secondary**	**Total**
Airport Tenants	4,077	3,013	7,090
GA Visitors	7,689	3,270	10,958
New Jersey Total	**11,765**	**6,283**	**18,048**

Payroll	**Direct**	**Secondary**	**Total**
Airport Tenants	$ 264,687,500	$ 150,143,700	$ 416,635,300
GA Visitors	$ 169,916,200	$ 140,940,700	$ 310,856,900
New Jersey Total	**$ 367,911,200**	**$ 256,863,800**	**$ 624,773,900**

Output	**Direct**	**Secondary**	**Total**
Airport Tenants	$ 719,629,200	$ 511,375,500	$ 1,231,003,800
GA Visitors	$ 289,052,300	$ 206,440,800	$ 495,493,100
New Jersey Total	**$ 1,008,681,500**	**$ 717,816,300**	**$ 1,726,496,900**

Table 18
2001 SUMMARY OF AIRPORT GENERAL AVIATION IMPACTS

Airport Name	Total Employment	Total Payroll	Total Output
Aeroflex-Andover Field	29.0	$922,100	$2,908,700
Alexandria Field	58.7	$1,427,700	$4,010,300
Atlantic City International	561.8	$20,436,700	$49,929,100
Bader Field	14.2	$400,600	$702,600
Blairstown	30.6	$836,300	$2,008,600
Camden County	25.5	$591,900	$2,658,900
Cape May County	215.9	$6,088,400	$13,990,800
Central Jersey Regional	90.8	$2,605,700	$6,152,500
Cross Keys	72.9	$2,013,200	$4,919,400
Essex County	1,774.4	$49,833,600	$93,099,000
Flying W	95.6	$3,276,000	$11,072,400
Greenwood Lake	45.0	$1,297,700	$3,209,100
Hammonton Municipal	27.6	$707,700	$2,181,800
Lakewood	28.3	$736,100	$2,388,200
Lincoln Park	182.6	$5,754,400	$14,810,100
Linden	270.8	$7,492,400	$25,391,600
Marlboro	38.7	$1,027,000	$3,428,400
Millville Municipal	1,717.8	$59,029,000	$283,663,500
Monmouth Executive	391.0	$10,602,800	$27,183,400
Morristown Municipal	3,179.8	$112,769,600	$271,089,500
Newark Liberty International	366.5	$13,206,600	$31,893,300
Ocean City Municipal	44.5	$1,564,500	$4,112,200
Old Bridge	38.9	$965,600	$2,736,100
Princeton	103.9	$2,805,000	$9,161,700
Robert J. Miller Airpark	114.6	$4,094,400	$9,486,700
Sky Manor	86.9	$2,886,900	$5,946,600
Solberg-Hunterdon	96.0	$3,117,300	$7,631,700
Somerset	63.2	$2,204,600	$7,459,400
South Jersey Regional	157.5	$5,340,400	$9,845,000
Spitfire Aerodrome	9.0	$219,700	$1,503,000
Sussex	73.6	$1,921,900	$5,417,600
Teterboro	5,873.6	$200,388,600	$517,634,800
Trenton-Mercer	2,023.7	$94,460,000	$277,593,300
Trenton-Robbinsville	30.5	$824,000	$2,308,900
Vineland Downstown	21.2	$458,500	$1,358,900
Woodbine Municipal	37.2	$974,900	$3,516,100
Other Airports	56.6	$1,492,100	$4,093,700
New Jersey Total	**18,048**	**$624,773,900**	**$1,726,496,900**

The last economic impact study for New Jersey's general aviation airports was completed in 1996 using 1994 data. The 1996 Study, which used a similar methodology, indicated that general aviation contributed the following impacts:

- Total Employment – 15,961
- Total Payroll - $450.9 million
- Total Output - $1.3 billion

When comparing the data from the 1996 study (using 1994 base data) to the current analysis, it is apparent that the total economic impact resulting from general aviation has continued to increase. The total output attributable to general aviation has increase by approximately 33 percent, payroll has increased by 39 percent, while employment has increased by approximately 13 percent. This growth is a strong statement related to the overall importance of general aviation to the State.

It is important to note that the impacts summarized in Table 17 include only those impacts associated with general aviation activity in the State. The activities of commercial airline carriers represents one the largest and most important components of aviation activity in New Jersey. When the estimated impacts of commercial service tenants and commercial service visitors are added to this analysis, the total economic impact of aviation, including general aviation and commercial service aviation, can be quantified. The estimated impacts of commercial airline activity occurring New Jersey's three scheduled service airports are summarized in **Table 19**.

Table 19
SUMMARY OF COMMERCIAL SERVICE IMPACTS

Employment	**Direct**	**Secondary**	**Total**
Atlantic City International	5,474.0	3,212.6	8,686.6
Newark Liberty International	130,996.0	76,430.5	207,426.5
Trenton Mercer	195.0	104.0	299.0
New Jersey Total	**136,665.0**	**79,747.1**	**216,412.1**
Payroll	**Direct**	**Secondary**	**Total**
Atlantic City International	$ 211,209,100	$ 164,836,600	$ 376,045,700
Newark Liberty International	$ 3,525,713,600	$ 2,596,901,400	$ 6,122,615,000
Trenton Mercer	$ 4,309,500	$ 3,481,800	$ 7,791,300
New Jersey Total	**3,741,232,200**	**2,765,219,800**	**6,506,452,000**
Output	**Direct**	**Secondary**	**Total**
Atlantic City International	$ 485,718,300	$ 343,199,900	$ 828,918,100
Newark Liberty International	$ 6,635,460,000	$ 4,740,075,700	$ 11,375,535,700
Trenton Mercer	$ 5,794,600	$ 4,230,100	$ 10,024,700
New Jersey Total	**7,126,972,900**	**5,087,505,700**	**12,214,478,500**

Source: Wilbur Smith Associates

Table 20 summarizes that combined general aviation and commercial service economic impacts of New Jersey's airport system.

Table 20

SUMMARY OF TOTAL IMPACTS [2]

	Direct	Secondary	Total
Employment	148,430	86,030	234,460
Payroll	$ 4,109,143,400	$ 3,022,083,600	$ 7,131,225,900
Ouput	$ 8,135,654,400	$ 5,805,322,000	$ 13,940,975,400

When the economic impacts of general aviation and commercial aviation activity in New Jersey are summed, total output impacts are estimated at approximately $13.9 billion. Nearly 234,500 persons directly or indirectly owe their employment to aviation. These employees receive a payroll and benefits in excess of $7.1 billion.

In addition to the tremendous economic impacts associated with aviation in New Jersey, there are significant social benefits that are provided. Airports serve as a base of operations for numerous public services including law enforcement, search and rescue, fire fighting, environmental services, and agricultural support. In addition, the State's airports provide an important recreation opportunity, add to the undeveloped green space of the State, and play host to a variety of community supporting events. Finally, many of the State's largest employers utilize general aviation to add efficiency to their day-today operations. Smaller businesses also use the system of airports to travel within the State as well as throughout the region.

2/ Includes commercial service and general aviation impacts