



Economic Impact Assessment

of Delaware Airports *2018 Technical Report*



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Chapter 1: Introduction

CHAPTER 1 INTRODUCTION

1. INTRODUCTION

THE PURPOSE OF THIS STUDY IS TO estimate the economic impact and contribution of airports in Delaware to the State's economy. End products of this analysis are described in terms of jobs, income, taxes generated, and total economic output in dollars. The economic impact analysis of Delaware airports will inform stakeholders that expenditures on local airports create and sustain jobs, as well as generate additional tax revenue to federal, State, and local governments.

Prior to presenting results of the analysis, it is helpful to define the technical terms that are used in this report:

- **Direct Spending:** Includes on-airport spending on employment, operations, and capital projects. It also includes off-airport spending by air travelers for rental cars, hotels, restaurants, etc. Thus, direct spending is associated with both the *providers* and the *users* of airport services.
- **Induced Benefits:** Impacts above the original direct spending created by the successive rounds of spending in the local economy until the original direct impact has been incrementally exported from the local area.
- **Jobs and Income:** Jobs and income generated by activity at airports in Delaware.
- **Total Output in Dollars:** The combined impacts of direct and induced spending.
- **Taxes:** Tax revenue contribution of the Delaware airports to local and State units of government in Delaware.



Helicopter Maintenance at Summit Airport

Economic impact analysis is the process of quantifying the economic contributions of any specific activity under study. End products of these analyses are described in terms of jobs, income, and total economic output in dollars. The economic impact analysis of Delaware airports will quantify the economic significance of these facilities within the State. It will also provide stakeholders with evidence that their expenditures on local airports are having an impact in creating and sustaining jobs.

An example, used by economist, Dr. Geoff Hewings – a member of the consulting team, considered a new firm that came into an area and employed 50 people and also purchased some local goods and services. Economic studies have shown that the impacts in the area can be attributable to the company's direct outlays plus the respending of these outlays by firms supplying inputs to the new firm. There are two types of ripple



Seasonal Agricultural Stand

effects: (1) those associated with firm-to-firm transactions and (2) those derived from the wages and salaries allocated to employees in these firms. The wages and salaries paid to the 50 new employees are spent and respent several times within the community. Retail establishments that have nothing to do with the nature of the new firm's business are affected by its presence as the new employees spend their income on clothes, automobiles, restaurant meals and so forth. Thus, for every dollar of new wages and salaries, an additional twenty-five to seventy-five cents of income might be generated elsewhere in the area. As supplier firms providing inputs to the new firm expand their production and thus allocate more resources to wages and salaries, a further consumption-generated ripple effect can be observed.

When all the effects are summed up, a new job can often generate the equivalent of another job (summed up over many partial jobs in different parts of the area's economy) if the community is large and has a sophisticated consumer retail base. For example, the more Delaware products that are purchased with wages and salaries from airport jobs, such as Delaware-grown produce, as seen in the image above, the stronger the effect on indirect job creation. In smaller communities, the effect of a new job might be to generate between one third and two-thirds additional jobs. Ripple or multiplier effects work in both a *positive* (when a new airport enters or an existing airport expands) and in a *negative* manner (when an enterprise goes out of business or an airport closes).

2. AIRPORTS STUDIED

CURRENTLY, THERE ARE 10 PUBLIC-USE AIRPORT FACILITIES, along with the DelDOT Helistop, located in the State of Delaware. Of these, only four (Delaware Airpark, Delaware Coastal Airport, New Castle Airport and Summit Airport) are contained in the National Plan of Integrated Airport Systems (NPIAS). Each of NPIAS and non-NPIAS airports was visited and surveyed as a part of the inventory effort. These on-site visits were made to determine employment levels and

business activity. The 10 public-use airport facilities include the following plus the DelDOT Helistop:

NPIAS Airports

- Delaware Airpark
- Delaware Coastal Airport
- New Castle Airport
- Summit Airport

Non-NPIAS Public-Use Airports

- Chandelle Estates
- Civil Air Terminal/Dover AFB
- Chorman Airport
- Jenkins Airport
- Laurel Airport
- Smyrna Airport



Delaware Airpark with New Runway

3. INPUT FOR ECONOMIC IMPACT MODEL

INPUT WAS GATHERED FOR THE ECONOMIC IMPACT model using surveys, on-site visits to airports, and published data. Three primary input factors from airports were needed, including: the number of jobs on the airport, the average annual capital spending, and the annual visitor spending. From this research the following summary information was developed:

- **Jobs:** The statewide estimate of direct airport business and employer employment totaled 2,494 full-time equivalent jobs at general aviation airports and 6,076 jobs at Dover Air Force Base.
- **Average Annual Capital Expenditures:** On a statewide basis, more than \$14.4 million in capital development was spent at all Delaware airports in 2017.
- **Annual Visitor Spending:** Visitors using Delaware general aviation airports spent almost \$9 million in 2017.



Aircraft Maintenance Work

Other interesting data was gathered from surveys of owners of Delaware-based aircraft that are registered with the FAA. In this regard, respondents spent an average of \$7,422 annually per aircraft for fuel, \$7,132 for maintenance, \$2,751 for storage and \$693 for other. Average annual aircraft spending (fuel, maintenance, storage, and other) for both business and personal aircraft equaled \$17,745.

4. ECONOMIC IMPACT METHODOLOGY

THE METHOD USED TO ESTIMATE THE TOTAL economic impacts for airports in Delaware involved inputting the direct impacts (spending for operations, capital expenditures, and visitor expenditures) into the IMPLAN economic modeling system to calculate the induced effects of direct spending.

This study demonstrates the economic impacts of airport use within the State of Delaware. It traces the movement of expenditures through the various economic sectors until the money is exported incrementally from the State through purchases of outside goods and services. In addition, the study documents the number of jobs created and sustained by each airport in Delaware. It will also show the loss of economic activity that occurs when people must drive to other states to begin the air travel portion of their trips. Economic impact studies of aviation can be used to support the following:

- Estimating economic outputs at airports from a given set of inputs
- Quantifying the monetary value associated with airport activity
- Providing information for public education about the economic value of aviation
- Providing information in support of decision making and funding allocations
- Comparison of economic impacts between airports and other enterprises



NASCAR Team at the Civil Air Terminal

By definition, induced economic impacts are the *multiplied effects* of the direct impacts. Induced impacts are created by the successive rounds of spending in the local economy until the direct or indirect impact has been incrementally exported from the local area. Thus, the economic impacts of aviation can be felt in parts of Delaware's economy that are far removed from aviation. Regions that are more economically self-sufficient have higher responding "multipliers" than do regions

that are more dependent on regional imports since less of the money is siphoned out of the community for goods and services.



Jet Aircraft Operation at Dover AFB/Civil Air Terminal

Chapter 2: Inventory & Data Collection

CHAPTER 2 INVENTORY & DATA COLLECTION

1. REVIEW OF PREVIOUS STUDIES

A REVIEW OF PREVIOUS ECONOMIC IMPACT STUDIES relating to Delaware airports or aviation was made. Several other sources were examined including the Association of State Highway Traffic Officials (ASHTO) and the US Department of Transportation (USDOT). From this research, a number of previous studies were identified:

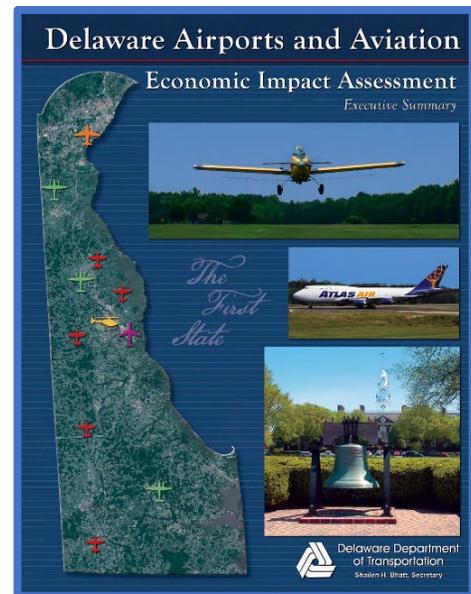
National Level

- *The Economic Impact of Civil Aviation on the U.S. Economy* – September 2017, Federal Aviation Administration
 - This study estimated the 2014 economic impact of civil aviation from the four NPIAS airports in Delaware to be \$632 million, while sustaining 3,758 jobs.
- *Economic Impact of General Aviation Airports* - Aircraft Owners & Pilots Association Website: www.aopa.org
- *ACRP Synthesis 7- Airport Economic Impact Methods and Models* - 2008 Airport Cooperative Research Program, Transportation Research Board

Delaware Studies

- *Delaware Aviation - Key to Economic Vitality* - 1991 for Delaware Transportation Authority
- *Economic Impact Assessment of Delaware Airports & Aviation* - 2001 for Delaware Department of Transportation
- *Delaware State Aviation System Plan* - 2013 for Delaware Department of Transportation
- *Delaware Airport Community Value* - 2016 for Delaware Department of Transportation
- *Economic Impact Assessment of Delaware Airports* - 2013 for Delaware Department of Transportation

The review of these reports considered their results, but more importantly, the components that each report examined, and the methodology used. The methodology used for these analyses and the specific types of input were important to this effort to ensure that all relevant factors be considered. Factors common to most or all these economic impact studies included the following:



2013 Economic Impact Summary

- Outputs of the studies:
 - **Direct Spending:** On-airport spending for employment, operations, and capital expenditures. This includes direct off-airport spending by air travelers for rental cars, hotels, restaurants, etc.
 - **Induced Benefits:** Multiplied effects of the circulation of money through spending and re-spending.
 - **Jobs and Income:** The aviation sectors from which the jobs and income were generated such as airline, general aviation, manufacturing, etc.
 - **Total Output in Dollars:** The combined impacts of direct, indirect, and induced spending.
- Descriptions and quantification of the importance of aviation to the economy

In addition to these items, many of the studies and reports documented transportation benefits and the tax impacts of aviation. Others were very detailed in breaking down the economic impacts by the type of industry or even by the type of air traveler. To provide a background context, many of the studies considered the local demographic trends and quantified the aviation activity that occurred at each airport. For the studies related to Delaware airports, a key factor in the development of a total economic impact number was the inclusion of military aviation at Dover Air Force Base and the New Castle Airport Delaware National Guard units.

With regard to methodology, all of the studies utilized some version of a regional input-output modeling system. All of the various economic impact models available (including IMPLAN, REMI, and RIMS II)¹ take their base data from the national input-output tables developed by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA). Each of these models share a similar structure, but there are slight distinctions between each model. For example, all of the methods are based on input-output or social accounting principles but differ in the manner in which the data inserted into the model were assembled and manipulated. All three of the models are county-based and thus can be suitable for both small and large-scale geographies. All methodologies use non-survey input-output tables. However, the IMPLAN model has additional detail concerning income-consumption linkages and tax impacts. These factors are important since they convey the information most relevant to tax-paying constituents.

The most recent previous economic study of Delaware airports used the IMPLAN economic modeling system and is directly comparable to the results of this updated study. **Table 2-1** presents a summary of the economic impact of each Delaware Airport as presented in the 2013 study.

¹ IMPLAN = IMpact analysis for PLANning, REMI = Regional Economic Models Inc., RIMS II = Regional Input-Output Modeling System II

Table 2-1 - Previous Economic Impact Values, by Airport¹

Airport	Total Employment ²	Total Impact ²
Chorman Airport	20	\$1,644,900
Civil Air Terminal	25	\$1,947,900
Dover Air Force Base	8,675	\$658,678,800
Delaware Airpark	44	\$3,711,600
Delaware Coastal Airport	872	\$139,452,200
Laurel Airport	17	\$1,377,800
New Castle Airport	2,346	\$240,485,500
Summit Airport	246	\$22,651,900
Private, Public-Use Airports*	6	\$559,000
STATE TOTAL	12,251	\$1,070,509,600

¹ Source: Delaware State Aviation System Plan - 2013 for Delaware Department of Transportation

² Direct and Induced

To get a picture of the dominance of the Dover AFB impact on the overall totals, **Figure 2-1** shows the relative proportion of impact. As shown, Dover AFB, New Castle Airport (which includes the military units), and Delaware Coastal Airport were the primary sources of aviation related job creation in Delaware in 2013.

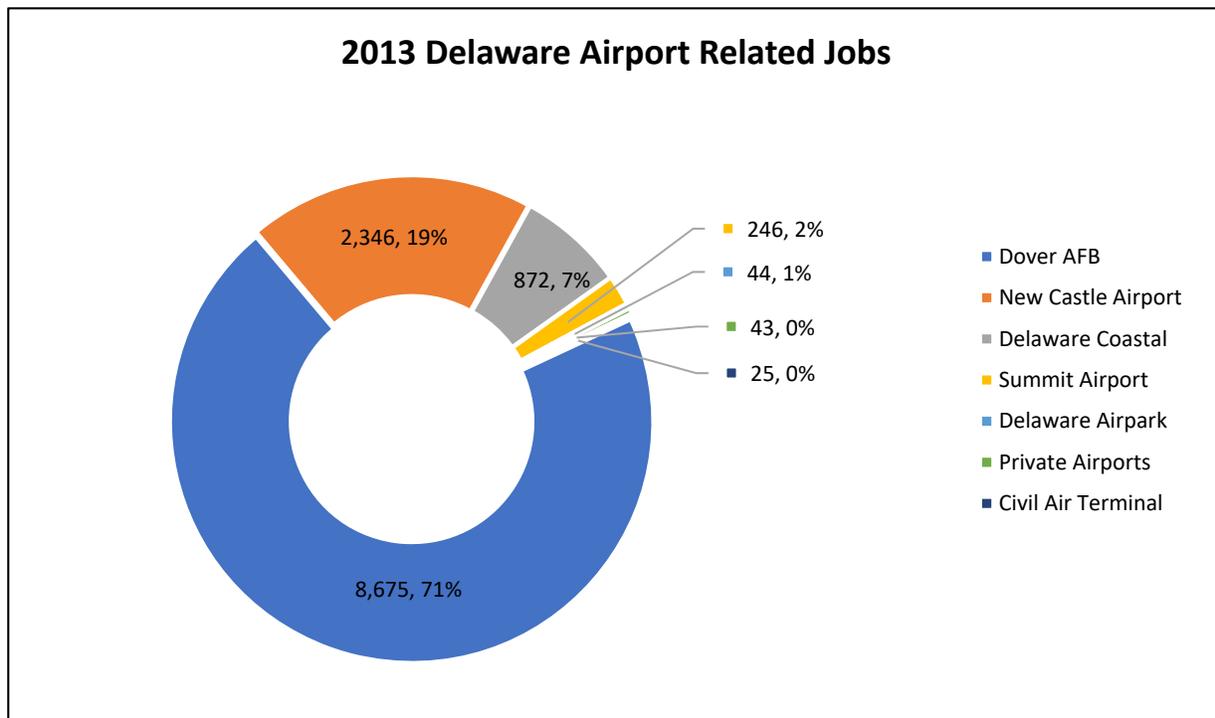


Figure 2-1 - Chart Showing Relative Job Creation Numbers and Percentages

2. DEFINITION OF ECONOMIC IMPACTS

FOR THIS STUDY, ECONOMIC IMPACTS WERE DEFINED to include direct, induced, and total output. Some economists divide the induced impacts category into “indirect” and “induced” subcategories. Indirect impacts are associated with the first round of respending, while the induced impacts include all other combined rounds of respending until the original amount is exported from the region of study. This report simplifies the definition by including the first and all subsequent rounds of spending into the *induced* category.

2.1 DIRECT IMPACTS

By definition, direct impacts are associated with providers of services at an airport. They are immediate consequences of airport economic activity. The value of direct impacts is the sum of all payroll, capital expenditures, operating and maintenance costs, taxes, and fees incurred by providers of services at the airport. In addition, direct impacts include users of airport services that are derived from off-site economic activities that are attributable to the airport. The value of these impacts is the sum of the fees and charges paid, time and cost savings, expenses related to food, lodging, ground transportation, and similar outlays.

The collection of data concerning direct impacts is essential for the accurate assessment of overall economic impacts of aviation. That is why time and effort were expended to survey different components of aviation in Delaware: on-airport businesses and employers, and owners of Delaware-based aircraft who have registered with the FAA. In addition, interviews with airport management were held to record



Aircraft Maintenance Work at Summit

their input on activities and trends at their airports. Response varied by airport, but overall, much valuable information was collected. In some cases, extrapolation of the survey information was needed to cover non-respondents. For example, registered aircraft owners were asked to specify their spending on their aircraft. From this statewide pool of information, averages for single-engine, multi-engine, jet aircraft, and helicopters could be compiled and extrapolated for non-respondents.

Direct impacts for this study included the following:

- On-airport Employment

- On-airport Capital Spending
- Off-airport Visitor Spending
- Registered Aircraft Owners Survey

On-Airport Employment

Where operational expenditures are not available, the employment component can be used in conjunction with the IMPLAN model to estimate the spending of the various businesses and organizations on an airport. The IMPLAN model estimates employment from expenditure input and expenditures from employment input. Thus, a knowledge of one or the other inputs can result in a completed output from the economic multiplier modeling.

Visits were made to each Delaware airport to interview airport managers to confirm estimates of on-airport employment. For the smaller airports, this was a relatively simple process. Airport managers were very familiar with the operators on their fields and could respond to the surveys. In some cases, they would have to contact some on-airport businesses to get updated numbers. The most complex survey of on-airport employment was for New Castle Airport. However, the Delaware River & Bay Authority responded quickly with accurate counts of jobs for each tenant at ILG.

On-Airport Capital Spending

In Delaware, airport managers knew the average annual amount of capital spending for their airports but not the number of workers associated with each capital improvement project. Thus, the IMPLAN modeling used the direct impact of average annual capital improvement expenditures to derive employment numbers. At ILG,



Delaware Airpark Construction

information from the DRBA was used to include large private enterprise capital spending in addition to the public capital spending.

Off-Airport Visitor Spending

An important part of the data collection, particularly for assessing the indirect economic impacts of aviation, is information pertaining to travel expenditures in Delaware. This would include such statistics as the number of visitors to each airport, their average daily expenditures, their average length of stay, and any modal differences in expenditure patterns. Components of this data were

available through the Delaware Tourism Office.² In this regard, visitor profiles have been developed to capture vital information concerning travel and spending patterns of visitors. By definition, visitors are people who travel more than 50 miles from home. Although the majority of these visitors come by automobile, modal differences were not noted in the profiles. Therefore, it was assumed that spending patterns for auto travelers was similar to spending patterns for air travelers. This assumption is likely to understate the actual spending by air visitors to Delaware who will have, in most cases, the added costs of renting cars at local airports.

The most recent visitor profile was compiled for the year 2016. In this regard, the value of tourism to the State of Delaware was estimated as follows:

- The total market value of goods and services produced (GDP) by the state's economy during Fiscal Year 2016 was \$3.3 billion.
- In 2016, there were 9 million visitors to the State of Delaware.
- The Delaware tourism industry is the 4th largest private employer in the state, employing 42,750 people.
- The tourism industry generated \$504 million in state and local government taxes/fees in Fiscal Year 2016.
- The average visitor spent \$384 per trip in 2016. In 2018 dollars, accounting for inflation, this spending averages \$407 per visitor, per trip.
- Without tourism in Delaware, each Delaware household would pay \$1,434 more in taxes to maintain current levels of state and local taxes.

The method for determining visitor spending impacts was based on a stepwise process. This method first estimates the number of visitors to an airport. Then, an estimated expenditure per visitor is applied to the total number of visitors, quantifying the total spending. To estimate the number of general aviation visitors in Delaware, it was assumed that only the transient pilots and passengers would be counted as visitors. To do the math, the average occupancy of itinerant general aviation aircraft must be known or estimated.

For many years, the Aircraft Owners and Pilots Association (AOPA) published a number of 2.5 pilots and passengers as the average occupancy of itinerant general aviation aircraft. The FAA accepted this number, primarily because there is no definitive survey showing different statistics. Recent checks of both the AOPA and FAA websites have shown these estimates are no longer published.

For this study it is assumed that a much smaller percentage of itinerant aircraft landings contain actual visitors. For some privately-owned airports, zero visitors were estimated, while at other airports a range of activity was assumed. For the other Delaware airports, visitor traffic was assumed to be carried by itinerant aircraft arrivals.

² Source: <http://www.visitdelaware.com/about-us/tourism-statistics/>

For publicly-owned, general aviation airports, between 10 and 15 percent of itinerant aircraft operations were considered to be true transients containing visitors. To estimate the individual economic impact of air transportation visitors using Delaware airports, the number of annual visitors was multiplied by an average spending total per visitor. For this analysis, the most important fact involved the Delaware Tourism Office survey finding that the average visitor spending per trip, adjusted for inflation, was \$407 in 2018. That number was used in concert with estimates of the numbers of annual visitors to each airport within the State.

Registered Aircraft Owners Survey

Direct economic impacts of aircraft tenants were assessed through a survey of selected registered aircraft in Delaware. In addition to activity levels and business/personal use questions, the survey asked about the level of spending for fuel, maintenance, storage, and "other" expenses. In addition, the aircraft type was recorded so that statewide or airport level averages could be developed on the basis of the size of the aircraft. With a knowledge of an airport's fleet mix, these averages could then be applied to non-respondents at that airport.



Aircraft Takeoff at Laurel Airport

2.2 INDUCED ECONOMIC IMPACTS

Induced economic impacts are the *multiplied effects* of the direct impacts. Induced impacts are created by the successive rounds of spending in the local economy until the original direct or indirect impacts have been incrementally exported from the local area. Thus, the economic impacts of aviation can be felt in parts of Delaware's economy that are far removed from aviation. Regions that are more economically self-sufficient have higher responding "multipliers" than do regions that are more dependent on regional imports since less of the money is siphoned out of the community for goods and services.

The effects of induced economic impacts can be demonstrated through the following example. A new firm opens up in Delaware, generating 200 new jobs, most of them filled by local residents. At the end of the year, the Delaware Department of Labor notes that employment has risen by 350 - yet only 200 new jobs were created. Why did an additional 150 jobs appear in the State? The process by which these jobs were created is known as the multiplier or ripple effect and is a result of several factors: the new firm making purchases of inputs from other firms in the region (thereby generating additional output and potentially employment) as well as the impacts of the

expenditures of wages and salaries earned by the 200 new employees. It would be a tedious and difficult process to trace the impacts on a case-by-case study. Fortunately, an accounting system and associated model exists to make this more feasible. For this study, the IMPLAN model was used to estimate respending multipliers for Delaware.

IMPLAN Model

IMPLAN, developed originally by the U.S. Forest Service, is a comprehensive impact system that is built on the framework of input-output and social accounting methodology. The database is maintained at the county level, affording the analyst an opportunity to create regions for study that are aggregations of counties. The database includes the latest business censuses supplemented by County Business Patterns and other data derived from the Bureau of Economic Analysis.

The input-output and social accounting models are derived from national data with adjustments made to reflect regional specialization, size and industrial composition. The procedures used to accomplish this are well-known and accepted in the literature on nonsurvey techniques. Since IMPLAN provides a comprehensive system (i.e., the complete input-output table or social accounts), it is possible to trace impacts of change in one sector on other sectors in a detailed fashion. The IMPLAN software permits users to:

- Develop a complete set of social account matrices
- Develop user-specified multiplier tables
- Change any component of the system: production functions, trade flows, or database
- Create custom impact analyses by entering final demand changes
- Obtain any report in the system to examine the model's assumptions and calculations

In addition, the IMPLAN databases are composed of the following components:

- Employment;
- Industry Output;
- Value Added
 - Employee Compensation;
 - Proprietary Income;
 - Other Property Type Income;
 - Indirect Business Taxes;
- Institutional Demands
- Personal Consumption Expenditures (PCE) - three income levels;
- Federal Government Military and Non-Military Purchases;
- State and Local Government Education and Non-Education Purchases;
- Commodity Credit Corporation;
- Inventory Purchases;
- Capital Formation;

- Foreign Exports;
- Federal, State and Local Government Sales;
- Inventory Sales.
- National Structural Matrices
 - Use
 - Make
 - Inter-Institutional Transfers (SAM)

The ability to edit data makes IMPLAN a dynamic economic modeling tool. Software users have the ability to edit all underlying data, from value added, employment, and final demands to production functions, byproducts, and regional purchase coefficients - and many other components.

There are several additional multipliers that can be calculated. For example, when a sector expands production, it will increase payments to labor generating additional wages and salaries that will be spent in the region. Further, other industries whose production has to expand to meet these new demands will also spend more on wages and salaries. Thus, an income multiplier may be generated that reveals the relationship between direct income generation and total income (in similar fashion to output). The analysis could also be transformed into employment terms. Referring back to the opening section, it becomes clear why 350 jobs were created in total when only 200 direct jobs were created. The answer is the multiplier process!

Multipliers vary not only across sectors but also across regions. A small regional economy, with a modest representation of industry, may not be able to provide all the necessary inputs required by local industry. Thus, there will be considerable importation of inputs (sometimes referred to as leakages). In general, the larger the value of the imports, the lower the value of the multiplier. The value of multipliers could be expected to decrease as the economic region under consideration gets smaller. Thus, moving from the US as a whole to a census region, an individual state, a metropolitan region and finally to a county would result in smaller and smaller multiplier values. However, there are a few cases in which this finding is not confirmed - cases in which a region may have a significant representation of a particular sector.

Tax Estimates

IMPLAN includes the estimation of tax impacts associated with expenditures. These important transactions include those between the government and consumers (taxes, transfers such as unemployment compensation, welfare), between firms and government (such as business taxes) and between consumers and firms (dividends from stock ownership). These institutional transactions are captured in a social accounting matrix. With a social accounting system, the multipliers tend to be larger than those derived from the input-output system alone. The primary benefit of using an input-output model that includes a social accounting system is the quantification of taxes collected through the various transactions between sectors. In this regard, State and local taxes were estimated for each Delaware airport studied in this analysis.

3. AIRPORT DATA PROFILE

FOR EACH DELAWARE AIRPORT, A DATA PROFILE was developed to assist in the analysis and estimation of its economic impact. The data gathered for each public-use airport comprised the following categories:

- Airport Functions and Use
- Survey of Registered Aircraft Owners

These topics are described below.

3.1 AIRPORT FUNCTIONS AND USE

Currently, there are 10 public-use airport facilities, along with the DeIDOT Helistop, located in the State of Delaware. Of these, only four (Delaware Airpark, Delaware Coastal Airport, New Castle Airport and Summit Airport) are contained in the National Plan of Integrated Airport Systems (NPIAS). Each of NPIAS and non-NPIAS airports was visited and surveyed as a part of the inventory effort. These on-site visits were made to determine employment levels and business activity. The 10 public-use airport facilities include the following plus the DeIDOT Helistop:

- Chandelle Estates
- Civil Air Terminal/Dover AFB
- Chorman Airport
- Delaware Airpark
- Delaware Coastal Airport
- Jenkins Airport
- Laurel Airport
- New Castle Airport
- Smyrna Airport
- Summit Airport

In order to understand the relative size and activity of each public-use airport in Delaware, a description is presented that details the service area, the type of aircraft that uses each facility, and the overall activity, along with a brief description of the airfield and landside areas making up the airport. **Table 2-2** presents a summary of this information. To better understand the table, it is appropriate to define the terms used in the description categories.



New Castle Airport, DE

Ownership

In Delaware, as in other parts of the nation, general aviation airports are either publicly owned or privately owned. Listed in the table are both publicly and privately owned, public-use airports. Some privately owned airports in the State are deemed restricted or private-use facilities and as such, are not listed in the table. The Civil Air Terminal is a State-owned, joint use civil-military aviation facility operated by the Delaware River and Bay Authority.

Airport Reference Code (ARC) Class

The Airport Reference Code has two components: the aircraft approach category, and the airplane design group. The first component is depicted by a letter (A, B, C, D, or E) and is related to the aircraft approach speed. The second component is depicted by a Roman numeral and is related to the airplane wingspan.

- Aircraft Approach Category is based upon 1.3 times an aircraft's stall speed in their landing configuration at their maximum certificated landing weight:
 - A: Speed less than 91 knots.
 - B: Speed 91 knots or more but less than 121 knots.
 - C: Speed 121 knots or more but less than 141 knots.
 - D: Speed 141 knots or more but less than 166 knots.
 - E: Speed 166 knots or more.

- Airplane Design Group is based upon wingspan:
 - I: Up to but not including 49 feet.
 - II: 49 feet up to but not including 79 feet.
 - III: 79 feet up to but not including 118 feet.
 - IV: 118 feet up to but not including 171 feet.
 - V: 171 feet up to but not including 214 feet.
 - VI: 214 feet up to but not including 262 feet.

Under this system, short runway airports and turf airports are classified as A-I and Less than A-I, respectively. Airports expected to accommodate single-engine airplanes are classified as B-I. Airports in the General Utility classification, serving larger general aviation and commuter-type aircraft are categorized as B-II airports. Finally, small to medium sized airports serving business jets and larger aircraft are classified as C-III airports.

Runways

The number, size, and surface type of runways at an airport indicate the type of aircraft serviced at that airport. Airports with multiple runways are able to operate when wind conditions are not favorable to a single runway. Also, the larger the runways, the larger and faster the aircraft that it can accommodate.

The surface type of runway indicates which airports are seasonal and which facilities can be used during all weather conditions. Turf runways cannot be plowed for snow removal and often tend to get muddy during rainy seasons. Use of these airports is highly dependent upon favorable weather conditions. Because of this, most turf runway airports support more personal flying than business flying. Asphalt or concrete runways, on the other hand, can be open year-round and can serve business needs during wet and snowy seasons. Airports with these types of runways tend to have a higher level of business activity than turf runway airports.



Business Jets at New Castle Airport

Based Aircraft and Operations

The number of based aircraft and operations at an airport shows the activity level of the facility. The higher the activity level, the more economic impact the airport is likely to generate. Based aircraft refers to the number of permanently stationed aircraft at an airport. Operations refer to the number of takeoffs and landings that occur at an airport. A takeoff and a landing are two operations.

Service Area

The service areas described for each airport were reduced to two general categories: local and regional. The local service area implies a 30-mile driving radius (or 45 minutes driving time) from the airport. This service area is generally limited to those living relatively near the airport and using the airport to base their aircraft. Local service area airports are low activity facilities that primarily accommodate pilot training and personal flying.

For this study, an airport with a regional service area implies a driving radius larger than 30 miles for users and the attraction of corporate general aviation aircraft. Regional service airports are generally higher activity airports (with the exception of the Civil Air Terminal) with larger runway facilities. They are generally able to accommodate many of the business class aircraft including multi-engine turboprops and business jets and tend to attract business use due to their facilities and ground services.

Activity Types

Airports accommodate numerous types of aviation activity which support both commerce and personal use. Activity types listed by airport operators included:

- **Air Cargo** - This type of cargo delivery to general aviation airports is usually on a special order basis. At New Castle Airport, for example, air cargo flights have brought spare parts to assembly plants when shortages threatened the production line with stoppage.



- **Crop Spraying** - **Aircraft Business Activity at Summit Airport**
Application of pesticides and fertilizers are made from specially fitted aircraft. In Delaware, there is a significant amount of seasonal aerial crop spraying. Mosquito control is another use for spray planes in a state that has significant acres of wetlands and marsh areas.
- **Powerline Surveillance** - Powerlines often traverse land that is not easily accessible from highways. For this reason, aircraft have been used by power companies to survey their lines and detect potential problems with vegetation growth or other facility problems.
- **Pilot Training** - Pilot training occurs at general aviation airports through flight schools or private instructors. If a public-use airport doesn't have a flight school, it is still likely that private instruction is provided at the airport.
- **Corporate Aviation** - Most corporate aviation is conducted using larger turboprop or turbo jet aircraft. However, many single engine aircraft are also used for business purposes. Typically, corporate aviation implies the use of professional pilots, while business aviation can mean private pilots using their aircraft for business purposes.
- **Military Aviation** - Military aviation activity is the regular or occasional use of an airport by military aircraft. For example, the Air National Guard units located at New Castle Airport are regular users, while other general aviation airports in the State receive occasional training flights. Dover Air Force Base is obviously classified as military aviation.
- **Aeromedical Evacuation (Medevac)** - Medevac is the life-saving activity of helicopter and fixed wing aircraft in transporting sick or injured persons to hospital facilities via air. For critical trauma victims, the first hour is called the golden hour because every minute of delay decreases the likelihood of complete recovery. Most medevac activity involves transfers of patients from one hospital to another more specialized in the field of patient needs.

Table 2-2 - Delaware Public Use Airport And Heliport Facilities

AIRPORT	Ownership	ARC Class**	# of Runways	Runway Dimensions	Runway Surface	Based Aircraft	Civil Aircraft Operations	Service Area	Business Aviation Activity
Chandelle Estates	Private	Less Than A-I	1	2,533' x 28'	Asphalt	24	1,700	Local	Crop Spraying, Powerline Surveillance, Pilot Training
Chorman	Private	B-I	1	3,588' x 50'	Asphalt	44	11,700	Local	Crop Spraying
Civil Air Terminal at Dover AFB*	Civil-Mil. Joint Use	E-VI	2	9,602' x 200' 12,903' x 150'	Asphalt	0	660	Regional	Corporate Aviation, NASCAR Race Air Travel Support, Military Aviation
Delaware Airpark	Public	B-II	1	4,200' x 75'	Asphalt	28	22,900	Regional	Crop Spraying, Pilot Training, Corporate Aviation, Sight Seeing, Tourism
Delaware Coastal	Public	B-III	2	5,500' x 150' 3,109' x 75'	Asphalt Asphalt	59	32,000	Regional	Pilot Training, Aircraft Manufacturing, Corporate Aviation, Tourism, Banner Towing, Military Aviation, Air Cargo, Medevac
Jenkins Airport	Private	Less Than A-1	2	2,842' x 70' 2,035' x 70'	Turf	19	800	Local	Aircraft Salvage
Laurel Airport	Private	Less Than A-I	2	3,175' x 270'	Turf	14	8,300	Local	Parachute Training, Crop Spraying, Pilot Training, Sight Seeing
New Castle Airport	Public	C-IV	3	7,275' x 150' 7,012' x 150' 4,602' x 150'	Asphalt Asphalt Asphalt	160	41,300	Regional	Air Cargo, Pilot Training, Corporate Aviation, Military Aviation, Medevac, Tourism
Smyrna Airport	Private	Less Than A-I	1	2,600' x 125'	Turf	8	1,600	Local	Pilot Training
Summit Airport	Private	B-II	2	4,488' x 65' 3,601' x 200'	Asphalt Turf	29	31,500	Regional	Corporate Aviation, Military Aviation, Aircraft Maintenance, Medevac
DELDOT Heliport	Public	N/A	1	60' x 60'	Asphalt	0	50	Local	Helicopter Operations

* Joint-use facility with State-owned civil facilities.

** ARC = Airport Reference Code

- **Tourism/Sightseeing** - Tourism and sightseeing are important aviation activities since they draw discretionary spending from tourists to a particular area. Coupled with local attractions such as beaches, Dover Downs, or conventions, tourism and sightseeing aviation activity can provide supplemental economic impact.
- **Glider/Balloon Activity** - Often, these types of aviation activity are associated with festivals or specialized airports. While not large economic impact endeavors, many corporations sponsor balloons with high visibility company logos printed on the balloon itself.
- **Banner Towing** - Banner towing activities in support of aerial advertising occur in highly populated areas such as beaches or at sporting events. These operations are localized and seasonal.
- **Parachute Training** - Parachute training is conducted in Delaware for both military and civilian students. This is a seasonal activity that attracts economic activity to southern Delaware each year.



Parachute Training at Laurel Airport

3.2 SURVEY OF REGISTERED AIRCRAFT OWNERS

FOR AIRPORT-SPECIFIC STUDIES SUCH AS THIS, surveys are often the only way to access local data. In this regard, A survey was developed and mailed to 350 registered aircraft owners with Delaware addresses (**Figure 2-2** and **Figure 2-3**). The survey and the aggregate results are presented in the following sections.

Aircraft Economic Information

Three questions included in this section involved:

- Aircraft type
- Home Airport for aircraft
- Total annual spending associated with the aircraft at its home Airport

Information gained from answers to these questions was used to quantify overall spending by aircraft owners at each Delaware airport. In addition to statewide averages, sample sizes at most of the airports permitted direct assessment of aircraft user expenditures at specific airports. For

those airports with insufficient numbers of responses, average expenditures by aircraft type (single engine, multi-engine, jet, etc.) could be estimated from the statewide averages and applied to fleet mix numbers for the airports in question.

Aircraft Activity Information

Four questions in this section included:

- Estimate the number of take offs or landings per year at the home Airport
- Estimate the annual percentage of training flights
- Estimate the average trip length
- Estimate the percentage business/personal use of your aircraft

By including questions about aircraft activity, expenditures on aircraft could be related to activity levels. In addition, the number of short training flights including touch-and-go operations could be factored into the overall aircraft owner profile. Because many small planes are used on a part-time basis for business purposes, the survey asked respondents to quantify the types of usage.

If You Have a Business on the Airport

To capture on-airport employers, five questions were included in this section:

- Type of business product or service
- Whether or not the business is aviation-related
- Total number of employees at that location in 2017
- What percentage of employment and sales is related to the local airport
- Explain the importance of the business use of aircraft to your company or business.

The image shows a survey form titled "Economic Impact Assessment of Delaware Airports & Aviation AIRPORT USER/EMPLOYER SURVEY". The form is divided into several sections:

- Personal Information:** Fields for Name, Phone, Address, Email, City, State, and ZIP.
- Aircraft Economic Information:** Questions 1-3 asking for aircraft type, home airport, and annual spending on fuel, maintenance, storage, and other costs.
- Aircraft Activity Information:** Questions 4-7 asking for takeoffs/landings, training flight percentage, average trip length, and usage percentage (business, personal, other).
- If You Have a Business on the Airport:** Questions 8-11 asking for business type, aviation-related status, employee count, and local airport impact.

Figure 2-2 - Airport User/Employer Survey, Page 1

These questions attempted to quantify the relationships between aviation and businesses in the local community. The first question identified the type of business product or service. The second question asked if the company was aviation or non-aviation related. The third question asked the total number of employees at that location for the most recent year. The aircraft owner was also asked about the value of the airport to the sales or employment of the business. The last question was open-ended and permitted respondents to explain the importance of aviation to their business or company. Responses to this question provided anecdotal testimonials to the importance of the local airport in supporting local jobs and businesses.

Summary Results

Key to the examination of economic impact of aviation on the Delaware economy is the interaction of local businesses at Delaware airports. In this regard, surveys of airport users indicated that half of all single engine aircraft flights were for business use. When asked to describe the importance of business use of aircraft to their companies and businesses, survey respondents indicated one or more of the following general categories:

- Significant time savings for employees
- Flight instruction business
- Aerial photography business
- Crop dusting operation
- Increases geographical range of business
- Life Line flight service
- Commute to work via aircraft

Each of these responses indicated a vital connection between business and aviation. In some cases, such as crop dusting, flight instruction, or aerial photography, the business would not exist

12. If applicable, please explain the importance of the business use of your aircraft to you or your business:

To Return the Survey, You May Either Mail this Survey to the Address Below or Complete it Online at:
www.delawaresurveys.com

Thank You For Your Response!

R.A. Wiedemann & Associates, Inc.
Delaware Survey Response
P.O. Box 621
Georgetown, Kentucky 40324

Please Type or Staple Here

Figure 2-3 - Airport User/Employer Survey, Page 2

without aviation. In other cases, aviation made a significant difference in the bottom line of company earnings through employee time savings or increased geographic coverage of market areas. In each case, the use of business aviation strengthens the local economy by supporting local jobs and industry.

Airport and Tenant Expenditures

From the survey of aircraft tenants and on-airport businesses (described in the previous section), much was learned about expenditures that occur on airports. In this regard, aviation-related expenditures could be grouped into several categories:

- Airport capital expenditures
- Aircraft user expenditures
- Number of jobs of airport businesses and employers

These primary categories can account for most of the spending that occurs on an airport.

Airport Capital Expenditures

Airport capital expenditures provide direct economic impacts for construction and materials supply sectors of the Delaware economy. Each year, capital improvement programs are identified and updated for Delaware airports that are eligible for federal and State funding assistance. Information from these programs were used in this analysis to provide a realistic estimate for capital spending on an annual basis. For those privately-owned airports that are not eligible for federal or State assistance, estimates of annual capital spending were made based on conversations with the owners and historical records of improvement spending. On a statewide basis, more than \$14.4 million in capital development was spent at all Delaware airports in 2017.

Airport User Expenditures

The Registered Aircraft Survey polled aircraft owners, requesting information on the level of spending associated with their aircraft on an annual basis. From the results of this survey, the following general averages of expenditure patterns could be identified for single and twin-engine propeller aircraft:

Forty-One respondents, accounting for 51 based aircraft at All Public Airports spent an average of \$7,422 annually per aircraft for fuel, \$7,132 for maintenance, \$2,751 for storage and \$693 for other. Average annual aircraft spending (fuel, maintenance, storage, and other) per aircraft (51) equaled \$17,745.

Average Overall Spending

Average fuel costs	\$7,422 per year
Average maintenance costs	\$7,132 per year

Average storage costs	\$2,751 per year
Other costs	<u>\$ 693 per year</u>
TOTAL AVERAGE COSTS	\$17,745 per year

Averages without Businesses

Average fuel costs	\$2,826 per year
Average maintenance costs	\$2,992 per year
Average storage costs	\$3,015 per year
Other costs	<u>\$ 827 per year</u>
TOTAL AVERAGE COSTS	\$9,269 per year

Averages without Flight Schools

Average fuel costs	\$ 3,673 per year
Average maintenance costs	\$ 4,958 per year
Average storage costs	\$ 3,150 per year
Other costs	<u>\$ 714 per year</u>
TOTAL AVERAGE COSTS	\$12,188 per year

This information was helpful since less than 100 percent response was received from based aircraft owners and operators. Using the statewide averages above, extrapolation of aircraft user expenditure amounts could be made, given a knowledge of the based aircraft fleet mix type. The statewide estimate of aircraft user expenditures (excluding business jets) totaled \$5.16 million for 2017. This number does not include the costs for 69 based business jet aircraft in the State. It is estimated that the corporate flight departments that manage these business jets expend more than \$89.7 million annually.

Jobs of Airport Businesses and Other Employers

A difficult segment of information to collect involved the number of direct jobs at each airport. In this regard, airport managers were asked for employment information. All complied and listed information for airport management as well as for on-airport businesses and organizations. For companies for which they did not have information, follow up calls were made to confirm employment totals.

Another consideration was whether or not the enterprise was aviation-related. In this regard, Delaware Coastal Airport has an industrial park on airport property with businesses that are not aviation-related. Those businesses were not included in the employment and expenditure estimates for this study. Only aviation-related businesses were included since that more accurately portrays the real value of aviation to the Delaware economy. Using the methods described above, the statewide estimate of direct airport business and employer employment totaled 2,494 full-time equivalent jobs (not including Dover AFB). A subsequent chapter details the airport-by-airport breakdown of employment.

4. MILITARY AVIATION IN DELAWARE

THE ECONOMIC INFLUENCE OF MILITARY AVIATION IN Delaware is significant. In this regard, there are two airports that serve the bulk of military aviation in the State: Dover Air Force Base (AFB), and New Castle Airport. Due to its size and activity, Dover AFB has the largest economic impact of any aviation facility in the State.

4.1 DOVER AFB

Dover AFB is home to the 436th Airlift Wing, known as the "Eagle Wing" and the 512th Airlift Wing, an Air Force Reserve associate - referred to as the "Liberty Wing." Together, these two wings make up "Team Dover." The 436th Airlift Wing is the active duty military host unit at Dover Air Force Base, which provides command and staff supervision, along with support functions, for assigned airlift providing worldwide movement of outsized cargo and personnel on scheduled, special assignment, exercise and contingency airlift missions.



Military Aircraft at Dover AFB; Photo courtesy of Dover AFB

Home to the C-5 Galaxy and C-17 Globemaster III aircraft, the Eagle Wing flies hundreds of missions throughout the world and provides 25 percent of the Nation's strategic airlift capability, projecting global reach to over 100 countries around the globe. Dover AFB operates the largest and busiest air freight terminal in the Department of Defense and is also home to the Air Mobility Command Museum, which welcomes thousands of visitors each year. The Charles C. Carson Center for Mortuary Affairs is the DOD's largest joint-service mortuary facility and the only one located in the continental United States.

Direct Employment

Direct employment can be defined as the employment located at Dover AFB that is directly related to the operation and mission of the facility. Dover AFB creates significant economic impacts in the local community, primarily through the employment of thousands of military and civilian personnel. In addition, local purchases of goods and services support direct employment in the Dover area. The numbers of personnel employed at Dover AFB can be identified as follows:

• Active Duty Personnel	3,319
• Reserve Personnel	1,658
• Civilians Workers	<u>1,099</u>
TOTAL	6,076

This total is considered the direct employment at Dover AFB. It should be noted that there are an estimated 11,500 military retirees in the Delaware area, which are also considered a part of the Dover AFB economic impact, since they receive their retirement benefits through the base, including medical services, BX, and commissary privileges.



Military Activity at Dover AFB; Photo courtesy of Dover AFB

Direct Expenditures

Similar to direct employment, direct expenditures represent money spent on operations and maintenance activities, construction, and what is called "Transportation Working Capital Fund." For 2016, the expenditures in these categories were as follows:

• Operations & Maintenance Budget:	\$ 57.9 Million
• Military Personnel:	\$175.9 Million
• Other Miscellaneous:	<u>\$ 5.3 Million</u>
• TOTAL 2016	\$239.1 Million

Total Economic Impact

The total economic impact for Dover AFB was supplied by the Base website, which indicates the overall installation's impact was \$564 million in 2016. The Base was honored by the Central Delaware Chamber of Commerce as Delaware's large employer of the year at the annual CDCC Awards for Excellence Dinner in June, 2017.³

4.2 NEW CASTLE AIRPORT MILITARY UNITS

There are two military units located at New Castle Airport: components of the Delaware Air National Guard and the Delaware Army National Guard, collectively known as the Delaware

³ Source: <https://www.dover.af.mil/News/Article/1230951/dover-afb-wins-cdcc-large-employer-of-the-year/> accessed September 6, 2018.

National Guard. The overall mission of the Delaware National Guard is to have qualified individuals available for active duty in time of war, national emergency, or when required by National Security. They must be trained, organized, and equipped to mobilize on short notice and take their place with active military units.



Source: <https://www.166aw.af.mil/News/Photos/>

The Air National Guard at New Castle Airport is composed primarily of the 166th Airlift Wing. Its federal mission is to provide organized, trained and equipped combat ready units to meet federal mobilization requirements in support of U.S. national security objectives. Operating eight permanently assigned, Lockheed C-130 H2 Hercules transport aircraft, the wing provides the U.S. Air Force with tactical airlift and air and land drop of troops, cargo and passengers and aeromedical evacuation of patients anywhere in the world. Additionally, the wing has a civil engineer function and a network warfare unit (the 166th Network Warfare Squadron).

The New Castle Air National Guard Base at New Castle Airport occupies 80 acres. The Base is home to 47 buildings, including a new \$23 million maintenance hangar and \$3.2 million Network Warfare Squadron. The 166th Air Wing Fire Department's fleet of nine vehicles provides 24/7 crash/fire/rescue support to military/civilian aviation and mutual aid support to the community.

Under command of the Governor of Delaware, the wing is prepared to support the State of Delaware with trained personnel and equipment for various humanitarian missions to protect life and property and to preserve peace, order and public safety. In a larger sense, the mission of the 166th Operations Group is to train and supply mission ready tactical airlift and aeromedical aircrews. Combat trained aircrews are prepared to respond to state, national and world-wide contingencies and disasters. The group has three units; the 166th Operations Support Flight, the 142nd Airlift Squadron and the 142nd Aeromedical Evacuation Squadron. Given this mission statement, the analysis presented herein will assist in quantifying the value added by the Delaware Air National Guard to the State's economy.

The Delaware Army National Guard unit at New Castle Airport is called the Army Aviation Support Facility (AAFS). This unit is responsible for Army helicopter operations and maintenance at their New Castle Airport base. In addition, they provide support service for several smaller Guard units in the area. Similar to the Air National Guard, their mission is to provide trained and equipped personnel, at the call of the Governor, to meet emergency needs and to protect life and property of the citizens of Delaware. The recently completed, Delaware Joint Armed Forces Reserve Center,

is a 109,000 square foot Reserve Center, which serves as an administration building and training facility for the Delaware Army National Guard, Navy Reserve, and Delaware Air National Guard. This facility is the main command and control center for the State of Delaware, with all of the systems and facilities necessary for handling a regional emergency.

The numbers of personnel employed at both the Army National Guard and the Air National Guard at New Castle Airport can be identified as follows:

	Full Time	Part Time
• Air National Guard Full Time:	405	695
• Army National Guard Full Time:	<u>158</u>	<u>155</u>
TOTAL	563	850

5. ECONOMIC ACTIVITY NEAR DELAWARE AIRPORTS

AIRPORTS ARE A PART OF A REGION'S transportation infrastructure. Like highways and railroads, airports serve to supplement commerce and personal transportation. They feed and enable the economic activity that occurs in their vicinity. For this reason, it is important to examine the economic activity occurring in each county in Delaware. Intuitively, as the economic activity increases in an area, so will the need for transportation services and infrastructure in order to serve these new levels.

To adequately address this topic, the following areas of discussion are included:

- Current and Forecast Socioeconomic Indicators
- Top Industries by Employment, by County
- On-Airport Economic Generators
- Travel and Tourism Data

5.1 CURRENT AND FORECAST SOCIOECONOMIC INDICATORS

Socioeconomic statistics are generally used to describe the economic and demographic trends expected to occur in a particular area. Socioeconomic factors are a key measure of economic health in a region. Socioeconomic factors have been shown in numerous studies sponsored by the FAA to be related to an area's demand for aviation facilities and services. Among the most significant are population, income, and employment. This section identifies each of these factors and presents historical statistics and trends for the years 2007-2017 for all three Delaware counties.

Population

Analysis and projection of population are useful for making planning decisions and assessing major economic development proposals, including those at airports. In many instances, the growth or decline of population determines the level of demand for future facilities and serves as an index of most county and urban characteristics. Because all economic impact and development is related to population, it is important to identify Delaware population trends for this study.

Table 2-3 presents the historical population growth for Delaware counties. As shown, Sussex County has shown the highest percentage growth (20.3%), and highest population growth (a net gain of 33,331 over the period). For the State, there has been a 10.3 percent growth over the 2007-2017 period, growing from 871,749 to 961,939.

Table 2-3 - Delaware Historical Population Trends

Year	Kent	New Castle	Sussex	State Total
2007	153,969	530,555	187,225	871,749
2008	157,925	533,958	191,991	883,874
2009	160,081	536,898	194,751	891,730
2010	162,990	538,934	197,892	899,816
2011	165,258	542,308	200,358	907,924
2012	167,605	546,041	203,347	916,993
2013	169,457	549,521	206,417	925,395
2014	171,949	552,271	210,728	934,948
2015	173,533	555,167	215,376	944,076
2016	174,827	556,987	220,251	952,065
2017	176,824	559,793	225,322	961,939
Net Change	18,899	25,835	33,331	78,065
% Change	14.8%	5.5%	20.3%	10.3%
CAGR: 2007-2017	1.39%	0.54%	1.87%	0.99%

Source: U.S. Census Bureau, August 2018. www.census.gov

By 2030, Woods & Poole Economics⁴ estimates the following population totals for each Delaware County:

- Kent County – 213,735 (a growth of 20.9%, or 1.47% per year)
- New Castle County – 624,776 (a growth of 11.6%, or 0.85% per year)
- Sussex County – 275,416 (a growth of 22.2%, or 1.56% per year)
- State Total – 1,113,927 (a growth of 15.8%, or 1.13% per year)

⁴ Source: Woods & Poole Economics, 2/2018.

While there are no revolutionary trends anticipated, a continued growth, somewhat faster than the last 10 years is anticipated (except in Sussex County). Although the future growth rate for Sussex County population is somewhat less than the historical period, it is still predicted to be the fastest growing county in Delaware.

Income

Similar to population, an area's income and economic activity have been shown to be positively related to the demand for aviation services and facilities in many parts of the country. Further, there is an assumed causal relationship between concentrated economic activity and demand for air transportation.

Income statistics commonly include Total Personal Income (TPI) and Per Capita Personal Income (PCPI). For tracking growth trends, PCPI is the preferred statistic since it removes the population growth factor from the income growth factor. Thus, PCPI statistics for Delaware counties were collected for the inventory. **Table 2-4** presents the historical growth in PCPI for the three counties and Delaware State totals.

Table 2-4 - Study Area Historical PCPI

Year	Kent	New Castle	Sussex	State Total
2007	\$33,478	\$45,848	\$37,330	\$41,834
2008	\$34,004	\$45,396	\$38,358	\$41,832
2009	\$34,194	\$45,008	\$36,997	\$41,317
2010	\$33,831	\$44,935	\$36,591	\$41,088
2011	\$35,195	\$48,247	\$38,464	\$43,712
2012	\$35,289	\$47,350	\$40,248	\$43,571
2013	\$35,800	\$46,913	\$42,243	\$43,836
2014	\$36,704	\$48,292	\$43,629	\$45,110
2015	\$37,506	\$50,371	\$46,271	\$47,071
2016	\$38,498	\$51,034	\$47,303	\$47,869
2017	\$39,005	\$51,876	\$47,983	\$48,598
Net Change	5,001	6,480	9,625	6,766
% Change	16.5%	13.1%	28.5%	16.2%
CAGR: 2007-17	1.54%	1.24%	2.54%	1.51%

Source: Bureau of Economic Analysis (BEA), U.S. Department of Commerce, August 2018. www.bea.gov

By 2030, Woods & Poole Economics⁵ estimates the following Per Capital Personal Income averages for each Delaware County:

⁵ Source: Woods & Poole Economics, 2/2018.

- Kent County – \$46,142 (a growth of 18.3%, or 1.30% per year)
- New Castle County – \$64,092 (a growth of 23.6%, or 1.64% per year)
- Sussex County – \$57,044 (a growth of 18.9%, or 1.34% per year)
- State Total – \$58,905 (a growth of 21.2%, or 1.49% per year)

Because of the strong growth in New Castle County, the State’s overall PCPI is anticipated to grow at a strong 1.49 percent per year. The PCPI numbers have been indexed to exclude the effects of inflation. Therefore, these projections represent estimates of real economic growth expected in each County.

Average Annual Wages by Major Industry Sector

In addition to Per Capita Personal Income, it is helpful to examine the average annual wages by major industrial sector. This examination permits comparisons of wages by industry type and permits decision makers to see the types of industries that are more desirable in terms of recruiting for economic development. **Table 2-5** presents a summary of average annual wages by major industrial sector for each county and for the State as a whole.

Table 2-5 - 2017 Average Wages by Major Industry Sector

Sector	Kent	New Castle	Sussex	Statewide
Utilities	\$100,456	\$117,690	\$100,769	\$112,859
Construction	\$53,602	\$62,716	\$47,685	\$59,075
Manufacturing	\$51,112	\$84,068	\$43,739	\$62,307
Wholesale trade	\$54,295	\$72,688	\$59,251	\$72,581
Retail trade	\$28,016	\$30,200	\$27,423	\$29,266
Transportation and warehousing	\$40,528	\$52,092	\$38,964	\$47,405
Information	\$48,766	\$65,199	\$56,810	\$64,497
Finance and insurance	\$77,458	\$100,234	\$63,752	\$97,728
Real estate and rental and leasing	\$38,299	\$54,418	\$41,568	\$49,846
Professional and technical services	\$64,840	\$110,405	\$65,618	\$101,929
Management of companies	\$98,223	\$156,800	\$150,228	\$154,957
Administrative and waste services	\$31,979	\$41,376	\$32,274	\$39,160
Educational services	\$43,137	\$46,971	\$28,424	\$45,594
Health care and social assistance	\$43,441	\$55,919	\$52,514	\$53,608
Arts, entertainment, and recreation	\$28,130	\$23,508	\$21,634	\$24,506
Accommodation and food services	\$15,692	\$18,808	\$20,233	\$18,852

Table 2-5 - 2017 Average Wages by Major Industry Sector

Sector	Kent	New Castle	Sussex	Statewide
Other services, except public administration	\$29,965	\$35,559	\$29,255	\$33,611
Government	\$51,409	\$60,948	\$46,254	\$56,104
Total - All Industries	\$42,541	\$62,891	\$39,498	\$55,856

Source: Delaware Department of Labor, Office of Occupational & Labor Market Information

Employment

Employment statistics are another measure of economic activity and thus are related to the demand for air transportation facilities and services. Growing employment trends point toward greater economic activity. This activity, in turn, leads to more use of aviation and air transportation services. Historical employment statistics for Delaware counties are presented in **Table 2-6**. As shown, overall employment for Delaware grew by 7.2 percent over the period. Sussex County showed the fastest growth with 12.5 percent, while New Castle County had the slowest growth with 5.8 percent. Between 2007 and 2017 overall employment grew by 39,206 jobs with 40,656 jobs being created in the last five years of the period (2009 and 2010 had negative growth).

Table 2-6 - Delaware Historical Employment

Year	Kent	New Castle	Sussex	State Total
2007	85,271	359,367	101,625	546,263
2008	84,999	360,403	101,157	546,559
2009	82,092	346,970	98,731	527,793
2010	81,946	342,133	99,034	523,113
2011	84,152	348,991	98,129	531,272
2012	85,002	350,496	99,263	534,761
2013	86,637	357,115	101,357	545,109
2014	87,715	364,155	105,111	556,981
2015	88,521	372,337	108,388	569,246
2016	89,933	374,474	112,213	576,620
2017	91,312	380,131	114,322	585,765
Net Change	6,313	19,728	13,165	39,206
% Change	7.1%	5.8%	12.5%	7.2%
CAGR: 2002-16	0.77%	0.56%	1.18%	0.70%

Source: Bureau of Economic Analysis (BEA), U.S. Department of Commerce, August 2018. www.bea.gov

By 2030, Woods & Poole Economics⁶ estimates the following Employment totals for each Delaware County:

- Kent County – 111,481 (a growth of 22.1%, or 1.55% per year)
- New Castle County – 463,905 (a growth of 22.0%, or 1.54% per year)
- Sussex County – 141,954 (a growth of 24.2%, or 1.68% per year)
- State Total – 717,340 (a growth of 22.5%, or 1.57% per year)

Employment growth is anticipated to be strong, outpacing the population growth rate by 39 percent. This means that of the 152,000 population growth by 2030, all but 20,400 will be absorbed into the work force. These are strong economic forecasts for the State. If they hold, the aviation system will benefit through increased usage.

5.2 TOP INDUSTRIES BY EMPLOYMENT, BY COUNTY

The IMPLAN model provides a wealth of data concerning the economic make up of each Delaware county. For this section, an analysis of the makeup of top businesses and industries in each county provides an overview of the potential need for aviation transportation services.

Kent County

Table 2-7 presents a summary of the top 15 industries in Kent County, by employment rank. As shown, government employment dominates the top four spots, along with the #15 position. In all, the government sector employs 21,155. The State government in Dover, along with Delaware State University have the bulk of these jobs. On the federal level, Dover AFB accounts for the military employment. Much of the impact estimated for Dover AFB is felt in Kent County, with the remainder distributed to other Delaware counties. Both the State and military generate air transportation needs, some of which is accommodated by general aviation airports.

Table 2-7 – Top 15 Employer Industries in Kent County, DE

Sector	Jobs	Income	Output
State Government, Non-education	6,348	\$ 475,353,241	\$ 575,807,190
State Government, Education	5,058	\$ 278,208,252	\$ 335,187,775
Federal Government, Military	4,446	\$ 334,897,522	\$ 514,009,888
Local Government, Education	3,872	\$ 271,702,179	\$ 329,785,095
Real Estate	2,921	\$ 22,889,877	\$ 399,958,344
Retail - General Merchandise Stores	2,405	\$ 66,073,390	\$ 151,562,897
Hospitals	2,307	\$ 177,192,127	\$ 350,321,045
Limited-Service Restaurants	2,036	\$ 34,091,521	\$ 162,054,947
Gambling Industries	1,973	\$ 71,324,161	\$ 307,152,435

⁶ Source: Woods & Poole Economics, 2/2018.

Table 2-7 – Top 15 Employer Industries in Kent County, DE

Sector	Jobs	Income	Output
Religious Organizations	1,838	\$ 81,265,245	\$ 75,411,415
Full-Service Restaurants	1,756	\$ 35,025,774	\$ 82,799,774
Individual and Family Services	1,698	\$ 49,020,970	\$ 61,253,193
Retail - Food and Beverage Stores	1,627	\$ 40,627,187	\$ 93,720,177
Poultry Processing	1,537	\$ 71,069,374	\$ 462,617,004
Federal Government, non-military	1,432	\$ 134,148,300	\$ 210,330,948

Source: IMPLAN model, 2018

It is interesting that the poultry processing sector has a high output relative to its employment (third highest in the County). While most of their products are processed in rural areas of the County and shipped by surface transportation, executive transportation for these and other companies is often through general aviation.

New Castle County

Table 2-8 presents a summary of the top 15 industries in New Castle County, ranked by employment totals. As shown, banks, hospitals, and real estate firms dominate the economy. The banks (credit intermediation) account for almost 26,800 jobs and more than \$11.5 billion in economic output. While some banks have downsized their aviation fleets, many of their executives still use general aviation transportation through fractional ownership or aircraft management programs.

In addition to banks, the medical industry is a user of general aviation, with helicopter life-flight and angel flight programs. In addition to banking, the real estate industry has embraced segments of the general aviation system. In recent years, real estate professionals have increasingly engaged Unmanned Aircraft Systems (UAS) firms to video aerial tours and virtual images of their listings.

Table 2-8 – Top 15 Employer Industries in New Castle County, DE

Sector	Jobs	Income	Output
Nondepository Credit Intermediation	18,276	\$ 2,031,841,257	\$ 3,898,070,068
Hospitals	16,775	\$ 1,533,200,125	\$ 2,817,394,043
Real Estate	15,502	\$ 282,380,959	\$ 3,708,104,492
Full-Service Restaurants	10,981	\$ 261,836,496	\$ 559,874,084
Local Government, Education	10,201	\$ 844,933,044	\$ 1,025,557,983
Other Financial Investment Activities	10,110	\$ 533,081,795	\$ 2,034,762,573
State Government, Non-Education	10,060	\$ 807,545,898	\$ 978,200,378
Limited-Service Restaurants	9,419	\$ 195,974,514	\$ 828,076,172
Wholesale Trade	9,413	\$ 1,012,865,097	\$ 2,544,497,070
Management of Companies and Enterprises	9,248	\$ 1,284,280,982	\$ 2,622,166,016
Monetary Authorities and Depository Credit Intermediation	8,510	\$ 940,351,538	\$ 7,612,687,012

Table 2-8 – Top 15 Employer Industries in New Castle County, DE

Sector	Jobs	Income	Output
State Government, Education	7,579	\$ 458,916,412	\$ 552,906,555
Employment Services	7,554	\$ 353,104,045	\$ 652,192,078
Nursing and Community Care Facilities	5,604	\$ 257,366,306	\$ 412,476,288
Offices of Physicians	5,487	\$ 585,755,527	\$ 839,082,397

Source: IMPLAN Model, 2018

With a total gross regional product (GRP) of almost \$52.8 billion, New Castle County has more than three times the GRP of both Kent (\$7.4 billion) and Sussex Counties (\$9.1 billion) combined.

Sussex County

Table 2-9 presents a summary of the top 15 industries in Sussex County, ranked by employment totals. As shown, industries that cater to beach tourism, second homes, and rental properties are the top two sectors, followed by the poultry processing industry. Full-service restaurants top the list – a sign of a tourist destination area. In addition, three of the top 15 sectors are retail businesses, which may feed the tourism industry near the beach communities. Another three sectors include hospitals, nursing homes, and physician offices, suggesting a large retirement population.

Delaware Coastal Airport has reported numerous general aviation flights associated with beach tourism. In addition, there is helicopter traffic from the Washington D.C. area bringing weekend visitors and second-home owners to the beaches, as well.

Table 2-9 – Top 15 Employer Industries in Sussex County, DE

Sector	Jobs	Income	Output
Full-Service Restaurants	7,445	\$ 196,884,001	\$ 398,752,350
Real Estate	7,054	\$ 110,119,774	\$ 1,305,107,666
Poultry Processing	6,625	\$ 320,895,536	\$ 2,010,903,442
Local Government, Education	5,011	\$ 326,391,266	\$ 396,165,314
Hospitals	4,231	\$ 347,311,381	\$ 667,098,450
Limited-Service Restaurants	3,464	\$ 76,093,286	\$ 305,985,291
Wholesale Trade	3,048	\$ 152,802,766	\$ 568,045,898
Retail - Food and Beverage Stores	2,273	\$ 69,964,809	\$ 145,534,012
Nursing and Community Care Facilities	2,216	\$ 95,642,949	\$ 156,709,641
Employment Services	2,009	\$ 69,794,194	\$ 139,152,740
Retail - Clothing and Clothing Accessories Stores	1,995	\$ 42,625,572	\$ 146,150,238
Offices of Physicians	1,783	\$ 171,086,699	\$ 254,215,744
Landscape and Horticultural Services	1,767	\$ 57,292,635	\$ 104,054,138
Services to Buildings	1,686	\$ 42,062,768	\$ 72,394,806
Retail - General Merchandise Stores	1,650	\$ 45,502,182	\$ 104,177,498

Source: IMPLAN Model, 2018

5.3 ON-AIRPORT ECONOMIC GENERATORS

Not only do Delaware airports support and supplement the economic activity going on around them, there are certain airports that have significant economic generators. These generators employ local residents and provide value-added benefits to the local economy. Noteworthy examples include the following:

Civil Air Terminal

Twice each year, the Civil Air Terminal at Dover AFB is used by NASCAR race teams to access Dover, Delaware. The races at Dover Downs are a short commute from the Base, and in some cases, race teams use helicopters to fly from the Civil Air Terminal directly to the race track. It has been estimated that each NASCAR weekend produces more than \$60



NASCAR Race Team Arriving at the Civil Air Terminal

million in economic impacts in central Delaware. As such, organizers and local officials want to make access for NASCAR participants as easy as possible.

Chorman Airport

Chorman Airport is home to Chorman Aerial Spraying company. The company offers precise aerial applications on the eastern shore of Delaware and Maryland. They have a fleet of over 20 aircraft for agricultural spraying, seeding, fertilizing, and mosquito control. Chorman also offers aerial surveillance and surveying of all waterfowl species. There are 10 full time pilots and 4 full time mechanics providing support to the spray operation.



Chorman Aerial Spray Operation

Delaware Airpark

Delaware State University (DSU) has an Aviation Program featuring a Professional Pilot degree. The flight training program is based at Delaware Airpark. Professional Pilot graduates complete their FAA requirements for the Private Pilot License, Instrument rating, Commercial License, Multi-

Engine and Certified Flight Instructor ratings while earning a bachelor's degree. Graduates of the FAA Approved Part 141 Aviation program get hired into a Professional Pilot job leading to a career in aviation. The DSU flight training program opens the door to commercial and/or military aviation careers for those with the ability and tenacity to meet the rigorous academic and physical skills demanded of them. There are more than 100 students and instructors involved in the flight training program.



New T-Hangars at Delaware Airpark

Delaware Coastal Airport

Delaware Coastal Airport is home to ALOFT AeroArchitects, a company that provides auxiliary fuel systems for business jets, along with maintenance, modifications, and luxury aircraft interior completions. ALOFT AeroArchitects, formerly PATS Aircraft Systems, is a long-standing VIP aircraft supplier with roots in specialty aviation component manufacturing. ALOFT AeroArchitects maintains an expert employee base of skilled workers and experienced management to support



Aircraft Modification at Delaware Coastal Airport

both manufacturing and hangar operation. The company has more than 300 employees at the Airport. Their core staff is capable of supporting seven B737-size aircraft, simultaneously. Over the years this staff has supported numerous VIP interior completion programs, dozens of aircraft maintenance and modification events and hundreds of auxiliary fuel system kits and installations.

There are other economic generators on Delaware Coastal Airport, such as the State Police helicopter base, Delaware Technical Community College (which trains aircraft mechanics), and others. However, ALOFT is by far the largest economic impact producer.

New Castle Airport

There are a number of significant employers located on New Castle Airport including:

- Dassault Aviation: This company provides maintenance and modifications of Dassault Falcon Jets. With more than 400 related employees and contractor employees, Dassault is a major employer on the Airport.
- Flight Safety International: Provides flight training to pilots from around the world, using simulators and advanced technology. The company has more than 200 employees at the Airport.
- FlyAdvanced: Provides fixed base operator (FBO) and aircraft management services at the Airport. The company has more than 100 employees at the Airport.



Dassault 8X at New Castle Airport

In addition to these large employers, New Castle Airport has other FBO and aircraft management companies. Atlantic Aviation is a major FBO on the Airport. Dumont Group has a repair station and aircraft management operation at the Airport, while DuPont bases their corporate aircraft on the Airport.

Summit Airport

Summit Aviation has grown into an industry leader providing aircraft services including maintenance, repair, avionics upgrades, system integration and certification, paint, flight testing and training support, logistics support, and aircraft sales and leasing. In recent years, Summit has doubled its workforce to more than 250. Their contract with the military to rehabilitate the large CH-47 Chinook helicopters has been a major part of their sustained growth.



Summit Airport

* * * * *

The above economic generators are those most prominent at the airports examined. However, there are many smaller businesses and economic generators at these and other airports in the Delaware system. In Chapter 3, additional information for each airport will be presented.

Appendix 2-A: Survey Results

APPENDIX 2-A

SURVEY RESULTS

In May 2018, Delaware Airport users and businesses were surveyed to evaluate local area business use and economic impact of Aviation in the State of Delaware. The Airport User/Business Survey was developed and mailed to 350 registered aircraft owners in Delaware. In addition to these direct mailings, the Airport User/Business were launched using a special Delaware website address using the SurveyMonkey platform to allow for online completion.

The direct mailings and online surveys asked respondents to return completed surveys by June 8, 2018. During this period, a total of 61 Airport User/Business Surveys were completed via online and mail-in respondents and 17 were returned as undeliverable. This represents a response rate of 18.3 percent for the total mailing. This response rate falls in the normal response range of 18 percent to 28 percent.

(note: Categories may not add up to total as some aircraft owners owned multiple types of aircraft, so they could not be separated into each category)

DELAWARE PUBLIC USE AIRPORTS

A total of 43 User/Business Surveys were collected from respondents that base their aircraft at one of Delaware's Public Use Airports.

1. *Please list type of aircraft*

A total of 43 Airport users responded to this question. Aircraft types included 46 single-engine aircraft, 4 multi-engine aircraft, 2 jet aircraft, and 1 other aircraft for a total of 53 aircraft (some respondents owned multiple aircraft).

2. *Please estimate the total annual level of spending associated with your aircraft at your local Airport:*

Forty-Two respondents, accounting for 52 based aircraft at a Delaware Public Airport spent an average of \$10,740 annually per aircraft for fuel, \$14,688 for maintenance, \$11,352 for storage and \$1,641 for other. Average annual aircraft spending (fuel, maintenance, storage, and other) per aircraft (52) equaled \$38,173.

Average spending per aircraft:

- Single Engine (38): \$11,007
- Multi Engine (1): \$12,700
- Non-specific Single + Multi (12): \$39,502

- Jet (1): \$1,080,000

3. *Estimated Yearly Takeoffs:*

Forty-One users with 51 aircraft (45 single engine aircraft, 4 multi engine aircraft, 1 jet aircraft, and 1 other aircraft) reported an estimated 17,630 annual operations (8,815 takeoffs) for an average of 346 operations per aircraft or 430 operations per user.

Average spending on fuel per takeoff:

- Single Engine (37): Spent an average of \$35.76 in fuel per takeoff (4,250 takeoffs)
- Multi Engine (1): Spent an average of \$100.00 in fuel per takeoff (50 takeoffs)
- Jet (1): Spent an average of \$12,000.00 in fuel per takeoff (15 takeoffs)

4. *Please estimate the average trip length on flights other than training flights:*

Of the 17,630 annual operations reported by respondents at All Public Airports, 7,144 (40.5 percent) were for purposes other than training flights.

Breakdown of trip length by aircraft type:

- Single Engine (23): Averaged 207 miles per trip (2,342 trips)
- Multi Engine (1): Averaged 215 miles per trip (45 trips)
- Jet (1): Averaged 2,760 miles per trip (15 trips)
- Total (35): Averaged 198 miles per trip (2,802 trips)

Some Respondents gave trip time instead of miles:

- Single Engine (12): Averaged 1.23 hours per trip (600 trips)

5. *Please estimate the percentage use of your aircraft?*

A total of 41 Airport users responded to this question. They indicated that in terms of the percentage of flights flown, 75.3 percent of flights flown were for business reasons, 23.8 percent of flights flown were for personal reasons, and 0.9 percent of flights flown were for other reasons. In terms of the number of operations flown, respondents indicated that 13,202 operations were for business, 4,168 operations were for personal reasons and 161 operations were for other purposes.

Breakdown by aircraft type:

- Single Engine (37): Business (51.6%) Personal (46.5 %) Other (1.9%) - 8,400 total operations
- Multi Engine (1): Business (0.0%) Personal (100.0 %) Other (0.0%) - 100 total operations
- Jet (1): Business (100.0%) Personal (0.0 %) Other (0.0%) - 30 total operations
- Total (51): Business (75.3%) Personal (23.8 %) Other (0.9%) - 17,530 total operations

NEW CASTLE AIRPORT

A total of 16 User/Business Surveys were collected from respondents that identified New Castle Airport as their home airport.

1. Please list type of aircraft

A total of 16 Airport Users responded to this question. Aircraft types included 15 single-engine aircraft, and 2 jet aircraft for a total of 17 aircraft (one respondent owned two aircraft).

2. Please estimate the total annual level of spending associated with your aircraft at your local Airport:

Fifteen respondents, accounting for 16 based aircraft at New Castle Airport spent an average of \$16,234 annually per aircraft for fuel, \$26,875 for maintenance, \$30,670 for storage and \$3,125 for other. Average annual aircraft spending (fuel, maintenance, storage, and other) per aircraft (16) equaled \$76,904.

Average spending per aircraft at New Castle Airport:

- Single Engine (15): \$10,031
- Jet (1): \$1,080,000

3. Estimated Yearly Takeoffs:

Fourteen users with 15 aircraft (14 single engine aircraft, and 1 jet aircraft) reported an estimated 3,486 annual operations (1,743 takeoffs) for an average of 232 operations per aircraft or 249 operations per user.

Average spending on fuel per takeoff at New Castle Airport:

- Single Engine (14): Spent an average of \$45.86 in fuel per takeoff (1,728 takeoffs)
- Jet (1): Spent an average of \$12,000 in fuel per takeoff (15 takeoffs)

4. Please estimate the average trip length on flights other than training flights:

Of the 3,486 annual operations reported by respondents at New Castle Airport, 1,511 (43.4 percent) were for purposes other than training flights.

Breakdown of trip length by aircraft type:

- Single Engine (7): Averaged 107 miles per trip (319 trips)
- Jet (1): Averaged 2,760 miles per trip (15 trips)
- Total (8): Averaged 227 miles per trip (334 trips)

Some Respondents gave trip time instead of miles:

- Single Engine (7): Averaged 1.11 hours per trip (422 trips)

5. *Please estimate the percentage use of your aircraft?*

A total of 15 Airport users responded to this question. They indicated that in terms of the percentage of flights flown, 55.5 percent of flights flown were for business reasons, 43.3 percent of flights flown were for personal reasons, and 1.1 percent of flights flown were for other reasons. In terms of the number of operations flown, respondents indicated that 1,936 operations were for business, 1,510 operations were for personal reasons and 40 operations were for other purposes.

Breakdown by aircraft type:

- Single Engine (14): Business (55.2%) Personal (43.7 %) Other (1.2%) - 3,456 total operations
- Jet (1): Business (100.0%) Personal (0.0 %) Other (0.0%) - 30 total operations
- Total (15): Business (55.5%) Personal (43.3 %) Other (1.1%) - 3,486 total operations

DELAWARE COASTAL AIRPORT

A total of 8 User/Business Surveys were collected from respondents that identified Delaware Coastal Airport as their home airport.

1. *Please list type of aircraft*

A total of 8 Airport users responded to this question. Aircraft types included 12 single-engine aircraft, and 2 multi-engine aircraft for a total of 14 aircraft (some respondents owned multiple aircraft).

2. *Please estimate the total annual level of spending associated with your aircraft at your local Airport:*

Eight respondents, accounting for 14 based aircraft at Delaware Coastal Airport spent an average of \$5,293 annually per aircraft for fuel, \$9,550 for maintenance, \$3,487 for storage and \$646 for other. Average annual aircraft spending (fuel, maintenance, storage, and other) per aircraft (14) equaled \$18,976.

Average spending per aircraft at Delaware Coastal Airport:

- Single Engine (7): \$12,951

3. *Estimated Yearly Takeoffs:*

Eight users with 14 aircraft (12 single engine aircraft, and 2 multi engine aircraft) reported an estimated 1,290 annual operations (645 takeoffs) for an average of 92 operations per aircraft or 161 operations per user.

Average spending on fuel per takeoff at Delaware Coastal Airport:

- Single Engine (7): Spent an average of \$44.22 in fuel per takeoff (545 takeoffs)

4. *Please estimate the average trip length on flights other than training flights:*

Of the 1,290 annual operations reported by respondents at Delaware Coastal Airport, 1,108 (85.9 percent) were for purposes other than training flights.

Breakdown of trip length by aircraft type:

- Single Engine (6): Averaged 281 miles per trip (354 trips)
- Total (13): Averaged 257 miles per trip (434 trips)

(note: Categories may not add up to total as some aircraft owners owned multiple types of aircraft and could not be separated into each category):

5. *Please estimate the percentage use of your aircraft?*

A total of 8 Airport users responded to this question. They indicated that in terms of the percentage of flights flown, 16.9 percent of flights flown were for business reasons, 75.3 percent of flights flown were for personal reasons, and 7.8 percent of flights flown were for other reasons. In terms of the number of operations flown, respondents indicated that 218 operations were for business, 971 operations were for personal reasons and 101 operations were for other purposes.

Breakdown by aircraft type:

- Single Engine (7): Business (1.7%) Personal (89.1 %) Other (9.2%) - 1,090 total operations
- Total (14): Business (16.9%) Personal (75.3 %) Other (7.8%) - 1,290 total operations

DELAWARE AIRPARK

A total of 8 User/Business Surveys were collected from respondents that identified Delaware Airpark as their home airport.

1. *Please list type of aircraft*

A total of 8 Airport users responded to this question. Aircraft types included 7 single-engine aircraft, and 2 multi-engine aircraft for a total of 9 aircraft (some respondents owned multiple aircraft).

2. *Please estimate the total annual level of spending associated with your aircraft at your local Airport:*

Eight respondents, accounting for nine based aircraft at Delaware Airpark spent an average of \$20,567 annually per aircraft for fuel, \$16,833 for maintenance, \$2,751 for storage and \$2,111 for

other. Average annual aircraft spending (fuel, maintenance, storage, and other) per aircraft (9) equaled \$42,262.

Average spending per aircraft at Delaware Airpark:

- Single Engine (6): \$13,777
- Multi Engine (1): \$12,700

3. *Estimated Yearly Takeoffs:*

Eight users with 9 aircraft (7 single engine aircraft, and 2 multi engine aircraft) reported an estimated 9,080 annual operations (4,540 takeoffs) for an average of 1,009 operations per aircraft or 1,135 operations per user.

Average spending on fuel per takeoff at Delaware Airpark:

- Single Engine (6): Spent an average of \$30.82 in fuel per takeoff (490 takeoffs)
- Multi Engine (1): Spent an average of \$100.00 in fuel per takeoff (50 takeoffs)

4. *Please estimate the average trip length on flights other than training flights:*

Of the 9,080 annual operations reported by respondents at Delaware Airpark, 995 (11.0 percent) were for purposes other than training flights.

Breakdown of *trip* length by aircraft type:

- Single Engine (4): Averaged 286 miles per trip (385 trips)
- Multi Engine (1): Averaged 215 miles per trip (45 trips)
- Total (5): Averaged 278 miles per trip (430 trips)

Some Respondents gave trip time instead of miles:

- Single Engine (2): Averaged 1.28 hours per trip (68 trips)

5. *Please estimate the percentage use of your aircraft?*

A total of 7 Airport users responded to this question. They indicated that in terms of the percentage of flights flown, 92.8 percent of flights flown were for business reasons, 7.2 percent of flights flown were for personal reasons, and 0.0 percent of flights flown were for other reasons. In terms of the number of operations flown, respondents indicated that 8,335 operations were for business, 645 operations were for personal reasons and 0 operations were for other purposes.

Breakdown by aircraft type:

- Single Engine (6): Business (38.1%) Personal (61.9 %) Other (0.0%) - 880 total operations
- Multi Engine (1): Business (0.0%) Personal (100.0 %) Other (0.0%) - 100 total operations
- Total (9): Business (92.8%) Personal (7.2 %) Other (0.0%) - 8,980 total operations

SUMMIT AIRPORT

Five User/Business Surveys were collected from respondents that identified Summit Airport as their home airport.

1. *Please list type of aircraft*

A total of 5 Airport users responded to this question. Aircraft types included 5 single-engine aircraft.

2. *Please estimate the total annual level of spending associated with your aircraft at your local Airport:*

Five respondents, accounting for five based aircraft at Summit Airport spent an average of \$3,070 annually per aircraft for fuel, \$5,660 for maintenance, \$1,960 for storage and \$1,459 for other. Average annual aircraft spending (fuel, maintenance, storage, and other) per aircraft (5) equaled \$12,149.

Average spending per aircraft at Summit Airport:

- Single Engine (5): \$12,149

3. *Estimated Yearly Takeoffs:*

Five users with 5 aircraft (5 single engine aircraft) reported an estimated 2,234 annual operations (1,117 takeoffs) for an average of 447 operations per aircraft or 447 operations per user.

Average spending on fuel per takeoff at Summit Airport:

- Single Engine (5): Spent an average of \$13.74 in fuel per takeoff (1,117 takeoffs)

4. *Please estimate the average trip length on flights other than training flights:*

Of the 2,234 annual operations reported by respondents at Summit Airport, 2,192 (98.1 percent) were for purposes other than training flights.

Breakdown of trip length by aircraft type:

- Single Engine (3): Averaged 130 miles per trip (1,033 trips)

Some Respondents gave trip time instead of miles:

- Single Engine (2): Averaged 1.39 hours per trip (63 trips)

5. *Please estimate the percentage use of your aircraft?*

A total of 5 Airport users responded to this question. They indicated that in terms of the percentage of flights flown, 87.5 percent of flights flown were for business reasons, 12.5 percent of flights flown were for personal reasons, and 0.0 percent of flights flown were for other reasons. In terms of the number of operations flown, respondents indicated that 1,955 operations were for business, 279 operations were for personal reasons.

Breakdown by aircraft type:

- Single Engine (5): Business (87.5%) Personal (12.5 %) Other (0.0%) - 2,234 total operations

NON-NPIAS AIRPORTS

User/Business Surveys that were received from public use, non-NPIAS airports, were grouped together. Six User/Business Surveys were collected from respondents based at public use, non-NPIAS airports

1. *Please list type of aircraft*

A total of 6 Airport users responded to this question. Airport types included 7 single-engine aircraft, and 1 other aircraft for a total of 8 aircraft (some respondents owned multiple aircraft).

2. *Please estimate the total annual level of spending associated with your aircraft at your local Airport:*

Six respondents, accounting for eight based aircraft spent an average of \$3,025 annually per aircraft for fuel, \$2,531 for maintenance, \$2,025 for storage and \$0 for other. Average annual aircraft spending (fuel, maintenance, storage, and other) per aircraft (8) equaled \$5,969.

Average spending per aircraft type:

- Single Engine (5): \$6,750

3. *Estimated Yearly Takeoffs:*

Six users with 8 aircraft (7 single engine aircraft, and 1 other aircraft) reported an estimated 1,540 annual operations (770 takeoffs) for an average of 193 operations per aircraft or 257 operations per user.

Average spending on fuel per takeoff:

Single Engine (5): Spent an average of \$49.19 in fuel per takeoff (370 takeoffs)

4. *Please estimate the average trip length on flights other than training flights:*

Of the 1,540 annual operations reported by respondents, 1,338 (86.9 percent) were for purposes other than training flights.

Breakdown of trip length by aircraft type:

- Single Engine (3): Averaged 422 miles per trip (252 trips)
- Total (6): Averaged 197 miles per trip (572 trips)

One Respondent gave trip time instead of miles:

- Single Engine (1): Averaged 2.00 hours per trip (48 trips)

5. *Please estimate the percentage use of your aircraft?*

A total of 6 Airport users responded to this question. They indicated that in terms of the percentage of flights flown, 49.2 percent of flights flown were for business reasons, 49.5 percent of flights flown were for personal reasons, and 1.3 percent of flights flown were for other reasons. In terms of the number of operations flown, respondents indicated that 758 operations were for business, 762 operations were for personal reasons and 20 operations were for other purposes.

Breakdown by aircraft type:

- Single Engine (5): Business (15.9%) Personal (81.4 %) Other (2.7%) - 740 total operations
- Total (8): Business (49.2%) Personal (49.5 %) Other (1.3%) - 1,540 total operations

PRIVATE AIRPORTS

Seven respondents, accounting for 11 based aircraft at Private Airports spent an average of \$777 annually per aircraft for fuel, \$1,927 for maintenance, \$773 for storage and \$327 for other. Average annual aircraft spending (fuel, maintenance, storage, and other) per aircraft (11) equaled \$3,805.

OTHER STATES' AIRPORTS

Nine User/Business Surveys were received from Delaware residents who base their aircraft in adjacent states.

1. *Please list type of aircraft*

A total of 9 Airport users responded to this question. Aircraft types included 9 single-engine aircraft, 1 multi-engine aircraft, and 1 turboprop aircraft for a total of 11 aircraft (some respondents owned multiple aircraft).

2. *Please estimate the total annual level of spending associated with your aircraft at your local Airport:*

Nine respondents, accounting for 11 based aircraft at out of State spent an average of \$2,786 annually per aircraft for fuel, \$955 for maintenance, \$4,564 for storage and \$245 for other. Average annual aircraft spending (fuel, maintenance, storage, and other) per aircraft (11) equaled \$9,041. Total spending for the 9 based aircraft respondents to this question equaled \$99,446.

Average spending per aircraft type:

- Single Engine (9): \$5,750
- Multi Engine (2): \$23,850

(Multi Engine and Turbo Prop are grouped together)

3. *Estimated Yearly Takeoffs:*

Nine users with 11 aircraft (9 single engine aircraft, and 2 multi engine aircraft) reported an estimated 1,176 annual operations (588 takeoffs) for an average of 107 operations per aircraft or 131 operations per user.

Average spending on fuel per takeoff:

- Single Engine (9): Spent an average of \$31.89 in fuel per takeoff (428 takeoffs)
- Multi Engine (2): Spent an average of \$106.25 in fuel per takeoff (160 takeoffs)

4. *Please estimate the average trip length on flights other than training flights:*

Of the 1,176 annual operations reported by respondents at Out of State, 948 (80.6 percent) were for purposes other than training flights.

Breakdown of trip length by aircraft type:

- Single Engine (3): Averaged 192 miles per trip (229 trips)
- Multi Engine (2): Averaged 195 miles per trip (152 trips)
- Total (5): Averaged 193 miles per trip (381 trips)

Four Respondent gave trip time instead of miles:

- Single Engine (4): Averaged 1.11 hours per trip (93 trips)

5. *Please estimate the percentage use of your aircraft?*

A total of 8 Airport users responded to this question. They indicated that in terms of the percentage of flights flown, 55.8 percent of flights flown were for business reasons, 41.5 percent of flights flown were for personal reasons, and 2.6 percent of flights flown were for other reasons. In terms of the number of operations flown, respondents indicated that 634 operations were for business, 472 operations were for personal reasons and 30 operations were for other purposes.

Breakdown by aircraft type:

- Single Engine (9): Business (38.5%) Personal (57.8 %) Other (3.7%) - 816 total operations
- Multi Engine (2): Business (100.0%) Personal (0.0 %) Other (0.0%) - 320 total operations
- Total (11): Business (55.8%) Personal (41.5 %) Other (2.6%) - 1,136 total operations

Chapter 3: Economic Impact Evaluation

CHAPTER 3

ECONOMIC IMPACT EVALUATION

TO ADEQUATELY MEASURE ECONOMIC IMPACTS, AN ANALYSIS that follows an industry-wide accepted methodology was used in this study. That methodology first identifies the direct spending and employment at airports and includes the direct spending at off-airport sites such as hotels and restaurants. Armed with this information, regional multipliers are applied to the data to determine the multiplied impacts of direct spending. The IMPLAN model was loaded with inputs for each Delaware airport included in the analysis. The results of that process are described in the following sections:

- IMPLAN Results for Delaware airports
- Other Key Outputs
- Economic Impact Summary
- Appendix 3A IMPLAN Tables

1. IMPLAN RESULTS FOR DELAWARE AIRPORTS

THE FINAL STEP IN THE ANALYTICAL PROCESS of regional economic impact analysis is the estimation of the induced or multiplied effects of Delaware's direct and indirect aviation impacts. Using the IMPLAN software, multiplier tables were generated for each Delaware county for all the potential impacted industries. Results and data from the estimation of direct and indirect impacts were plugged into the appropriate multiplier process and the results were summed for each airport to obtain output and employment totals supported by aviation. Appendix A presents the tabular results of the IMPLAN process.

This section provides a summary of each airport's direct and induced economic impacts. In addition, there is a discussion of market potential and future economic development at each airport. This documentation is the culmination of work involving the survey data, the secondary source data, and the IMPLAN multipliers in determining the economic impact of Delaware airports.

1.1 CHORMAN AIRPORT

Chorman Airport (D74) is located 2 miles southwest of Farmington in a mostly agricultural area. The Airport is a privately owned, public-use facility. It has one 3,588-foot by 50-foot paved runway. The Airport has 44 based aircraft and 12,000 annual aircraft operations. Key economic and business activities that occur at the Airport include crop spraying and aircraft maintenance. As a privately-owned airport, the crop spraying business is operated by the airport owner, with

maintenance work provided by Russell Aircraft Service. The bulk of aircraft operations at the Airport are in support of the crop spraying operation.



Chorman Airport Aircraft Operation

Airport owners continue to invest in the Airport's infrastructure. In 2011 they constructed an eight-unit T-hangar. In 2016, the runway was repaved and widened from 37 feet wide to 50 feet. A 450-foot displaced threshold was also placed on the Runway 34 end to improve safety set back distances for the runway and terminal area buildings.

The economic impact of the airport includes direct and induced components of output, employment and income. **Table 3-1** presents a summary of each of these components of economic impact for Chorman Airport.

Table 3-1 - Chorman Airport Direct and Induced Economic Impacts

Item	Amount
Direct Impacts	
Airport-Related Payrolls*	\$787,000
Airport Expenditures	\$1,496,600
Airport-Related Employment	24
Estimated State and Local Taxes	\$75,100
Induced Impacts	
Induced Impacts	\$807,000
Total Induced Employment Impacts	6
Grand Total Dollar Impacts	\$2,303,700
Grand Total Income Impacts	\$1,059,000
Grand Total Employment Impacts	31

* This is a subset of the total impacts and is already included in the output number.

1.2 CIVIL AIR TERMINAL (CAT)

The Civil Air Terminal (CAT) is located within the city limits of Dover adjacent to Dover Air Force Base (AFB). The CAT occupies roughly 20 acres and has a 2,000 square foot terminal building with 40-space auto parking lot. The airside operations area includes a 6.5-acre aircraft parking ramp with a taxiway connected to Dover Air Force Base. The CAT is currently operated by the Delaware River and Bay Authority (DRBA) under agreement with DelDOT, its owner. The CAT has no based

aircraft, but it does serve as the main air access point to accommodate general aviation aircraft used by NASCAR race drivers and teams traveling to Dover Downs Raceway. NASCAR race weekend typically attracts 100 or more high-performance aircraft to the CAT. Many of these business jets and multi-engine turboprops use the expanded ramp for parking during that time.



Civil Air Terminal During NASCAR Race Weekend

Key economic and business activities that occur at the CAT include the accommodation of corporate aviation into central Delaware and the support of race weekends at Dover Downs. No other airport in Kent County has all-weather capability and runways as long as Dover AFB. As a result, corporate and business jet aircraft desire the use of the facility for safety and convenience.

DeIDOT is currently working with Dover AFB on a new joint-use agreement to remove restrictions such as the 72-hour prior permission only requirement for landing. There is also a landing fee charged by Dover AFB for civil aircraft using the CAT. Civilian aircraft training on the Base is prohibited.

The current economic impact of the CAT includes direct and induced components of output, employment and income. **Table 3-2** presents a summary of each of these components of economic impact for the CAT.

Table 3-2 - Civil Air Terminal Direct and Induced Economic Impacts

Item	Amount
Direct Impacts	
Airport-Related Payrolls*	\$677,700
Airport Expenditures	\$1,246,600
Airport-Related Employment	25
Estimated State and Local Taxes	\$127,100
Induced Impacts	
Induced Impacts	\$755,300
Total Induced Employment Impacts	6
Grand Total Dollar Impacts	\$2,001,900
Grand Total Income Impacts	\$916,600
Grand Total Employment Impacts	31

* This is a subset of the total impacts and is already included in the output number.

1.3 DELAWARE AIRPARK

Delaware Airpark (33N) is located 1 mile west of Cheswold in an agricultural and residential area. The Airport is owned by the State of Delaware and is operated by the Delaware River and Bay Authority (DRBA). The Airport recently constructed a new 4,200-foot by 75-foot runway parallel to the previous 3,582-foot by 60-foot runway. In addition to the new runway, a new set of T-hangars were also constructed at the Airport. The Airport has 28 based aircraft and had 22,900 annual aircraft operations in 2017.



Delaware Airpark Terminal Complex

Key economic and business activities that occur at the Airport include the flight training operation of Delaware State University, a maintenance shop, and a specialty FBO. Other business aviation activities at the Airport include tourism, and business/corporate use of aircraft. With the lengthening of the runway, business/corporate use of the airport is expected to increase in the future. The economic impact of the airport includes direct, indirect, and induced components of output, employment and income. **Table 3-3** presents a summary of each of these components of economic impact for Delaware Airpark.

Table 3-3 - Delaware Airpark Direct and Induced Economic Impacts

Item	Amount
Direct Impacts	
Airport-Related Payrolls*	\$2,018,300
Airport Expenditures	\$5,508,700
Airport-Related Employment	47
Estimated State and Local Taxes	\$262,300
Induced Impacts	
Induced Impacts	\$2,764,600
Total Induced Employment Impacts	23
Grand Total Dollar Impacts	\$8,273,300
Grand Total Income Impacts	\$2,953,900
Grand Total Employment Impacts	70

* This is a subset of the total impacts and is already included in the output number.

1.4 LAUREL AIRPORT

Laurel Airport (N06) is located 1 mile southwest of the city in an agricultural area. The Airport is not paved and is surrounded by open fields and some residential development. The Airport has one turf runway - a 3,175 foot by 270 foot runway. Any expansion would be difficult due to physical constraints of a highway at one end of the runway (State Highway 24) and property boundaries at the other runway end.



Skydiving Operation at Laurel Airport

The Airport has 14 based aircraft and recorded 8,200 annual aircraft operations. The Airport's primary economic activity is directed toward parachute jump training, with other business and personal use activities as well. The parachute training is significant, with the Airport conducting over 8,000 jumps in 2017. The training and jump season extends year-round, with peak activity occurring in summer months. Local hotels, restaurants, and other retail outlets benefit from the attraction of weekend sky divers.

Other business and economic activities at the Airport include aircraft maintenance, a crop spraying operation, and rental of hangar and tie-down spaces. The Airport is operated by a partnership of principals involved in the parachute training and aerial spraying businesses. For the future, there are no plans to change the mission or operational character of the Airport. The Airport serves a geographic area in Delaware devoid of other aviation facilities and thus increases the overall capacity and coverage of the State's airport system without cost to government.

The economic impact of the airport includes direct and induced components of output, employment and income. **Table 3-4** presents a summary of each of these components of economic impact for Laurel Airport.

Table 3-4 - Laurel Airport Direct and Induced Economic Impacts

Item	Amount
Direct Impacts	
Airport-Related Payrolls*	\$393,000
Airport Expenditures	\$716,600
Airport-Related Employment	18
Estimated State and Local Taxes	\$61,800
Induced Impacts	
Induced Impacts	\$486,600
Total Induced Employment Impacts	4

Table 3-4 - Laurel Airport Direct and Induced Economic Impacts

Item	Amount
Grand Total Dollar Impacts	\$1,203,300
Grand Total Income Impacts	\$529,400
Grand Total Employment Impacts	22

* This is a subset of the total impacts and is already included in the output number.

1.5 NEW CASTLE AIRPORT

New Castle Airport (ILG) is located 4 miles south of Wilmington in an industrial, commercial, and residential area. In 1995, the Airport came under operational control of the Delaware River & Bay Authority (DRBA). The 1,250 acre Airport has three runways, ten taxiways, and several aircraft parking ramps. The runways include:



New Castle Airport Tower and Midfield Complex

- 7,275 foot by 150-foot asphalt surface runway (9/27)
- 7,012 foot by 150-foot asphalt surface runway (1/19)
- 4,602 foot by 150-foot asphalt surface runway (14/32).

The availability and length of the longest runways are sufficient to accommodate the largest business jet aircraft in the nation's fleet. In all, 66 business jets are located on the Airport. The Airport has 180 based aircraft and accommodated 41,253 annual aircraft operations in 2017. New Castle Airport is home to four FBOs including: FlyAdvanced, Dassault Aircraft Services, Atlantic ILG and Dumont Aviation. The Airport's tenants range in size from major corporate clients to individual aircraft owners. Some of the on-airport businesses are not aviation related and thus were not included in our estimates of employment, income, and dollar output. Major employers on the Airport that were included in the analysis were the FBOs, corporate flight departments, Flight Safety International (a pilot and mechanic training facility), and the Army and Air National Guard units.

The economic impact of the Airport includes direct and induced components of output, employment and income. **Table 3-5** presents a summary of each of these components of economic impact for New Castle Airport.

Table 3-5 - New Castle Airport Direct and Induced Economic Impacts

Item	Amount
Direct Impacts	
Airport-Related Payrolls*	\$86,870,300
Airport Expenditures	\$186,271,000
Airport-Related Employment	1,674
Estimated State and Local Taxes	\$10,175,200
Induced Impacts	
Induced Impacts	\$139,448,100
Total Induced Employment Impacts	945
Grand Total Dollar Impacts	\$325,719,100
Grand Total Income Impacts	\$138,538,800
Grand Total Employment Impacts	2,619

* This is a subset of the total impacts and is already included in the output number.

1.6 SUMMIT AIRPORT

Summit Airport (EVY) is located 5 miles north of the city of Middletown in an agricultural and increasingly residential development area. The Airport has significant infrastructure, with one paved runway (4,487 feet by 65 feet) and one turf crosswind runway (3,600 feet by 200 feet). It is the largest privately owned airport in Delaware, occupying over 520 acres. The Airport has 29 based aircraft and has an estimated 31,500 annual aircraft operations. Summit is a National Plan of Integrated Airport Systems (NPIAS) airport, however, it has not applied for any grants from the FAA in more than 20 years.



Summit Airport Terminal Entrance

The Airport is owned by Greenwich Aerogroup. Thanks to Greenwich's vision and expansion, Summit Aviation's business model has more than doubled since the last economic impact assessment in 2013. Its primary economic activity is directed toward airframe, engine, and avionics maintenance and overhaul. Employment of 250 is directed toward these on-airport activities. Both civil and military aircraft are brought to Summit Airport each year for maintenance, avionics, and modification. Other business activities that take place on the Airport include aircraft interior refurbishment, corporate aviation, and fuel sales.

In addition to the activities of the Airport owner, the State Police helicopter base of operation of northern Delaware is located at the Airport, with a staff of 16. This base includes a hangar facility and State Police helicopters which are medevac equipped.

For the future, there are no plans to change the mission or operational character of the airport. The Airport has grown its market share of business and has established a name within the aircraft maintenance, avionics, and overhaul business market. Because the Airport is privately owned, the Airport Sponsor provides all aircraft services offered on the facility. This arrangement is not expected to change in the future.

The economic impact of the Airport includes direct and induced components of output, employment and income. **Table 3-6** presents a summary of each of these components of economic impact for Summit Airport.

Table 3-6 - Summit Airport Direct and Induced Economic Impacts

Item	Amount
Direct Impacts	
Airport-Related Payrolls*	\$11,649,500
Airport Expenditures	\$41,039,400
Airport-Related Employment	276
Estimated State and Local Taxes	\$2,321,400
Induced Impacts	
Induced Impacts	\$24,576,300
Total Induced Employment Impacts	147
Grand Total Dollar Impacts	\$65,615,700
Grand Total Income Impacts	\$20,710,200
Grand Total Employment Impacts	423

* This is a subset of the total impacts and is already included in the output number.

1.7 DELAWARE COASTAL AIRPORT

Delaware Coastal Airport (GED), formerly Sussex County Airport, is located 2 miles northeast of the city of Georgetown in an agricultural and industrial development area. The Airport is owned and operated by the County government and serves general aviation, corporate aviation, the military, and the State Police. The Airport has two runways: Runway 4-22 is 5,500 feet by 150 feet and crosswind Runway 10-28 is 3,109 feet by 75 feet. GED also has over 450,000 square feet of aprons and over 834,000 square feet of taxiways/taxilanes. The Airport has 59 based aircraft and an estimated 34,000 annual aircraft operations.

The Airport's primary economic activity is directed toward airframe modification, aircraft manufacturing, flight training, aircraft maintenance, and corporate aircraft storage. The largest aviation employer is ALOFT with 325 employees. This company specializes in modifying fuel tanks on Boeing Business Jets, along with interior completions and painting for other corporate business jet types. Other on-airport aviation employment is provided by the Delaware State Police in support of their southern Delaware helicopter medevac unit. In addition to aviation-related employment, the Sussex County Airport is home to an industrial park that features more than 170 acres of land and 18 businesses. Employment at the industrial park is estimated at more than 580.



Delaware Coastal Airport

The Airport extended its primary runway (4-22) by 500 feet in 2013. Ultimately, the runway will be lengthened by an additional 500 feet to increase safety, attract more corporate users, and accommodate the Boeing Business Jet traffic to ALOFT for modification.

The economic impact of the Airport includes direct and induced components of output, employment and income. **Table 3-7** presents a summary of each of these components of economic impact for Sussex County Airport.

Table 3-7 – Delaware Coastal Airport Direct and Induced Economic Impacts

Item	Amount
Direct Impacts	
Airport-Related Payrolls*	\$6,909,400
Airport Expenditures	\$80,600,500
Airport-Related Employment	427
Estimated State and Local Taxes	\$3,884,500
Induced Impacts	
Induced Impacts	\$67,272,300
Total Induced Employment Impacts	353
Grand Total Dollar Impacts	\$147,872,800
Grand Total Income Impacts	\$24,117,900
Grand Total Employment Impacts	780

* This is a subset of the total impacts and is already included in the output number.

1.8 DOVER AIR FORCE BASE (AFB)

Dover AFB is home to the 436th Airlift Wing, known as the "Eagle Wing" and the 512th Airlift Wing, an Air Force Reserve associate - referred to as the "Liberty Wing." Together, these two wings make up "Team Dover." The 436th Airlift Wing is the active duty military host unit at Dover Air Force Base, which provides command and staff supervision, along with support functions, for assigned airlift providing worldwide movement of outsized cargo and personnel on scheduled, special assignment, exercise and contingency airlift missions.¹



Dover AFB C-17 Aircraft; Photo courtesy of Dover AFB

Dover AFB creates significant economic impacts in the local community, primarily through the employment of thousands of military and civilian personnel. In addition, local purchases of goods and services support direct employment in the Dover area. The Air Force has indicated that Dover AFB employs 6,076 and creates an economic impact of \$564 million each year.

The overall economic impact of the AFB was provided by the military. The components of that overall impact include direct and induced output, employment, and income, which were estimated by the Consultant. **Table 3-8** presents a summary of each of these components of economic impact for Dover Air Force Base.

Table 3-8 – Dover AFB Direct and Induced Economic Impacts

Item	Amount
Direct Impacts	
Airport-Related Payrolls*	\$315,434,900
Airport Expenditures	\$399,016,900
Airport-Related Employment	6,076
Estimated State and Local Taxes	\$20,967,300
Induced Impacts	
Induced Impacts	\$164,983,100
Total Induced Employment Impacts	1,954
Grand Total Dollar Impacts	\$564,000,000

¹ Source: <http://www.dover.af.mil/units/index.asp>

Table 3-8 – Dover AFB Direct and Induced Economic Impacts

Item	Amount
Grand Total Income Impacts	\$366,825,700
Grand Total Employment Impacts	8,030

* This is a subset of the total impacts and is already included in the output number.

1.9 SMALL PRIVATELY OWNED, PUBLIC-USE AIRPORTS

Three small privately owned, public-use airports were grouped together for economic impact analysis. These facilities have one or fewer full time workers and as such, were aggregated to show their collective impact. The airports include Chandelle Estates, Jenkins Airport, and Smyrna Airport:

- Chandelle Estates Airport:** Chandelle Estates Airport (0N4) is located 3 miles northeast of Dover in an agricultural and light residential area. The Airport has a paved runway 2,533 feet in length by 28 feet in width. Any expansion of the runway would be difficult due to physical constraints of a road at one end and woodlands at the other. The Airport has 24 based aircraft and an estimated 1,680 annual aircraft operations. The Airport serves a local set of pilots who use the facility primarily as a recreational and training facility, with relatively minor business use. The primary economic activities on the airport involve flight training, aerial spray operations, the sale of aircraft fuel and oil, rental of hangar and tie-down space, and aircraft maintenance. For the future, it is likely that the facility will continue in its present role until ownership changes or the Airport is converted to a different use.
- Jenkins Airport:** Jenkins Airport (15N) is located 1 mile west of the city of Wyoming in a mostly agricultural area. The Airport has turf runways and is surrounded by open fields and some residential development. The Airport has two runways: runway 18/36 is 2,842 feet in length by 70 feet in width and runway 12/30 is 2,035 feet in length by 70 feet in width. Any expansion would be difficult due to physical constraints of a highway (Westerville Road) and property boundaries. The Airport has 20 based aircraft and an estimated 800 annual aircraft operations. The primary economic activities on the Airport are aircraft salvage and parts sales. Jenkins Aircraft Parts buys old or damaged aircraft and salvages parts from those aircraft for use in the repair of other aircraft in the region and across the nation. For the future, it is likely that the facility will continue in its present role until ownership changes or the Airport is converted to a different use.
- Smyrna Airport:** Smyrna Airport (38N) is located 1 mile east of the city of Smyrna in an agricultural area. The Airport has no paving and is surrounded by open fields and wetlands. The current runway is 2,600 feet in length by 125 feet in width. Any expansion would be difficult due to physical constraints. The Airport has 10 based aircraft and an estimated 1,600 annual aircraft operations. The primary economic activities on the Airport involve aerial spray operations, the sale of aircraft fuel and oil, rental of hangar and tie-down

space, and minor aircraft maintenance. For the future, it is likely that the facility will continue in its present role until ownership changes or the Airport is converted to a different use.

The combined economic impact of these three airports includes direct and induced components of output, employment and income. **Table 3-9** presents a summary of each of these components of economic impact for the small privately owned, public-use airports.

Table 3-9 - Small Private Public-Use Airports Direct and Induced Economic Impacts

Item	Amount
Direct Impacts	
Airport-Related Payrolls*	\$155,000
Airport Expenditures	\$331,300
Airport-Related Employment	3
Estimated State and Local Taxes	\$26,400
Induced Impacts	
Induced Impacts	\$260,000
Total Induced Employment Impacts	3
Grand Total Dollar Impacts	\$591,300
Grand Total Income Impacts	\$259,600
Grand Total Employment Impacts	6

* This is a subset of the total impacts and is already included in the output number.

2. OTHER KEY OUTPUTS

THE ECONOMIC IMPACT ANALYSIS PROVIDED OTHER KEY outputs that can be used to aid decision makers in fiscal issues. In this regard, the study provided a basis for the following:

- Comparisons to Alternate Uses of Resources
- Quantification of the Induced Value Associated with a Set of Economic Activities
- Economic Sustainability Measures

Each of these topics is discussed briefly in the following sections.

2.1 ALTERNATE USES OF RESOURCES

Public investment in airport infrastructure is often questioned by opponents in order to suggest a better or more productive use of the money. This study examined the expenditures of private enterprise and public agencies at airports and documented the effects. Those effects were felt in Delaware's economy through spending and re-spending of the original investment. To identify

the portion of public spending that could be used elsewhere, this study examined the impacts of capital expenditures.

With regard to capital expenditures, only three publicly owned airports were eligible for federal funding of those expenditures: Delaware Airpark, Delaware Coastal Airport, and New Castle Airport. **Table 3-10** shows the average annual federal capital expenditures for each of the airports, along with their local matching fund amounts. The federal grant money is leveraged against a 10 percent local match. The local match can also be matched by State funding on a 50-50 percent basis. Thus, for federally eligible projects, the local airport may only have to contribute 5 percent. Without considering the multiplier effects of capital spending at airports, there is an automatic leverage of local funds at a rate of either 9 to 1 or 19 to 1. This investment return cannot be matched in the private sector.

Table 3-10 - Capital Improvement Spending

Airport	Local Share	Federal Grant ¹	Total
Delaware Airpark	\$332,224	\$2,990,014	\$3,322,238
Delaware Coastal	\$113,751	\$1,023,763	\$1,137,515
New Castle	\$392,667	\$3,534,003	\$3,926,670

¹Five Year Average

When the ripple effect is considered, and dollars are converted into construction costs, and jobs and income, it can be shown that for every dollar spent at the various airports, an additional amount (between \$0.50 to \$0.83 dollars, depending upon the airport) is added to final output. Because the total construction dollars have already been leveraged at 9 to 1, this means that the local investment creates 9 times the amount of multiplier effects than other investments in capital projects that don't involve federal grants. The upshot of this is the fact that capital investment in the local airport creates an abnormally high return on the investment in terms of jobs and income to the local community.

2.2 THE VALUE OF INDUCED ECONOMIC ACTIVITIES

The existence of multiplier effects is the evidence of the greater value of induced economic activities. These additional values are directly linked to an initial round of spending. That first round, however, does not end the cycle. Successive rounds of spending continue until the original amount is exported from the region. The lingering effects of the respending of money within the region constitute the induced value described by the multiplier effect. For Delaware, multipliers with values between 1.50 and 1.83 are common. This indicates a partial recirculation of money within the economy prior to its exit from the region.

The multiplier effect also works in the opposite direction when businesses contract or leave a community. Again, the induced effects may not be as noticeable as when new money is introduced

to the community, but they are there nonetheless. These effects make the economy *seem* sluggish. The lack of new jobs is one of the invisible effects of a loss of economic activity.

2.3 ECONOMIC SUSTAINABILITY MEASURES

As a part of this study, economic sustainability measures were examined for Delaware airports that will permit airport management and policy makers to assess the value of additional aviation activity at their facilities. In this regard, the following incremental measures were documented:

- **Jet Aircraft:** The economic impact of one jet aircraft was estimated. This was necessarily a composite or average size jet and included the number of jobs, incomes, spending, and total overall economic output produced by one aircraft. Other operating parameters such as average annual fuel consumption, block hour costs, etc. was developed, as well.
- **Multi-engine Aircraft:** In addition to jet aircraft, similar metrics were produced for multi-engine propeller aircraft. These aircraft types are often used for business purposes and as such will be included in the economic sustainability analysis.

Jet Aircraft Impact

The impact of one jet aircraft to an airport either through itinerant operations or based in a hangar can be significant to the Airport's bottom line. Expenditures on jet aircraft will vary, but a simple rule is: the bigger the aircraft, the more it will cost to own and maintain. The following gives examples of the cost for each size of business jet:

- A new Gulfstream G650 might cost \$65 million. After the initial outlay, there are then expected variable costs of \$1.9 million a year, as well as annual fixed costs of about \$1.2 million. Variable block hour costs run approximately \$4,750.²
- Less expensive in terms of initial outlay might be the Bombardier Challenger 605. A new model will cost in the around \$27 million, with used ones selling for \$15 million or thereabouts. Nevertheless, expected annual variable costs are \$1.5 million and fixed costs are about \$725,000 per year. Variable block hour costs run roughly \$3,580.³
- An Embraer Phenom 300 will cost a little under \$9 million, with used models priced at about \$7m-8m. Annual variable costs are predicted to be in the region of \$800,000, with an additional \$350,000 in fixed costs. Block hour costs run approximately \$1,854.⁴

Bombardier, the jet manufacturer, forecasts a worldwide need for 8,300 business jets over the next decade, creating \$250 billion in sales. This averages about \$30 million per jet.⁵

² Source: Business Insider "Tour the Gulfstream G650, The Best Private Jet \$65 Million Can Buy" Alex Davies

³ Source: SherpReport, "How Much Does A Private Jet Cost?", Fiona Young-Brown, October 2016.

⁴ Source: Ibid.

⁵ Source: Bombardier Market Forecast, 2016-2025, p.25.

For this report, a composite business jet was estimated to cost \$1.3 million per year and require three full time equivalent personnel. Many pro formas for jet aircraft assume between 300 and 400 hours of use each year and block hour costs are based on these utilization estimates. Fuel costs are the highest variable expense, running roughly 60 percent of total variable costs. If one half of the fuel is bought at the home base airport, it can add up to more than \$350,000. This is important for airport FBOs and airport sponsors who receive a fuel flowage fee from fuel sales.

Multi-Engine Aircraft

The impact of a multi-engine aircraft can be significant on an airport, although not to the degree of jet aircraft. For this analysis, a Beechcraft King Air 350 was used as the pro-forma business multi-engine propeller aircraft. The King Air 350i is a twin turboprop aircraft, produced by Beechcraft, which is now part of Textron aviation (also the parent company of Cessna). The other aircraft in the family include the smaller King Air 250, the King Air C90GTx and an extended range King Air 350ER.

The price of a new King Air 350i is currently about \$8 million. A 6 or 7-year-old one, built in 2009 to 2011, will cost in the region of \$4 million to \$4.5 million and models that are 15 to 16 years old, 1999 to 2001 vintage, are typically in the range of \$2 million to \$2.5 million. Prices on second hand models vary depending on the level of use, maintenance, record keeping and upkeep. Variable costs are about \$350,000 per year, or about \$1,200 per hour, while fixed costs run about \$915,000 per year. Fuel costs are about 45 percent of variable costs, or about \$157,000 per year. If half of the fuel is bought at the local airport, it would total roughly \$79,000. There are no employment statistics concerning the King Air, but other studies have shown that it takes between 7 and 10 based aircraft to support one full time employee. For the average multi-engine aircraft, it can be assumed that expenditures would support one part-time employee.

3. ECONOMIC IMPACT SUMMARY

FINDINGS OF THE 2018 ECONOMIC IMPACT ASSESSMENT are presented in **Table 3-11**. As shown, the statewide impacts of airports are anticipated to sustain 12,011 jobs, \$555.9 million in income, and \$1.1 billion in annual output. In addition, these airports contribute roughly \$37.9 million in state and local taxes each year.

When compared to the 2013 study (**Table 3-12**), it can be shown that several general aviation airports grew in significant ways over the five-year period. **Figure 3-1** shows a graphical illustration of that comparison. At the same time, Dover AFB's economic impact declined by roughly \$93 million, dampening the overall economic impact growth. The fact that the overall growth between periods was positive indicates the strength of the general aviation sector growth. Explanations of the significant growth included the following:

- **Chorman Airport** experienced a 40 percent increase, primarily due to a more than doubling of their based aircraft totals. The Airport now has 44 based aircraft, whereas in 2013, there were only 19.
- **Delaware Airpark** experienced a 123 percent increase, primarily because of the millions of dollars that were spent in the construction phase of its expansion. Delaware State University will continue to provide economic stability and growth with their flight training program based at the Airport.
- **New Castle Airport** had a 35 percent increase due to several factors. These included:
 - The arrival of Dumont Aviation, with 35 employees on-site.
 - The increased capital spending by DRBA on the Airport, averaging more than \$7 million per year.
 - More precise classification of the types of maintenance and aircraft completion work performed by Dassault at ILG.
- **Summit Airport** had an increase of 190 percent because of aggressive market expansion. Not only did the Airport owners construct a large new hangar (36,000 square feet), they increased their workforce by more than 100. Summit Airport is a great example of how private enterprise can make a difference in aviation in Delaware.

Although overall employment decreased by 2 percent (primarily from reductions at Dover AFB), the overall economic output for aviation in Delaware increased by 4 percent. Some of this change can be explained by inflation, which drives wages and salaries upward for the same job. The other portion of the increase comes from greater production efficiencies and output at Maintenance-Repair-Overhaul (MRO) facilities at the larger airports.



Evening Jet Operation

Table 3-11 - Summary of Economic Impacts

Airport Name	Direct Employment	Direct Impacts	Direct Income	Induced Employment	Induced Impacts	State & Local Taxes	Grand Total Employment	Grand Total Income	Grand Total Impacts
Chorman Airport	24	\$1,496,600	\$787,000	6	\$807,000	\$75,100	31	\$1,059,000	\$2,303,700
Civil Air Terminal	25	\$1,246,600	\$677,700	6	\$755,300	\$127,100	31	\$916,600	\$2,001,900
Dover Air Force Base	6,076	\$399,016,900	\$315,434,900	1,954	\$164,983,100	\$20,967,300	8,030	\$366,825,700	\$564,000,000
Delaware Airpark	47	\$5,508,700	\$2,018,300	23	\$2,764,600	\$262,300	70	\$2,953,900	\$8,273,300
Delaware Coastal	427	\$80,600,500	\$6,909,400	353	\$67,272,300	\$3,884,500	780	\$24,117,900	\$147,872,800
Laurel Airport	18	\$716,600	\$393,000	4	\$486,600	\$61,800	22	\$529,400	\$1,203,300
New Castle Airport	1,674	\$186,271,000	\$86,870,300	945	\$139,448,100	\$10,175,200	2,619	\$138,538,800	\$325,719,100
Summit Airport	276	\$41,039,400	\$11,649,500	147	\$24,576,300	\$2,321,400	423	\$20,710,200	\$65,615,700
Private, Public-Use Airports*	3	\$331,300	\$155,000	3	\$260,000	\$26,400	6	\$259,600	\$591,300
Grand Totals	8,570	\$716,227,600	\$424,895,100	3,441	\$401,353,300	\$37,901,100	12,011	\$555,911,100	\$1,117,581,100

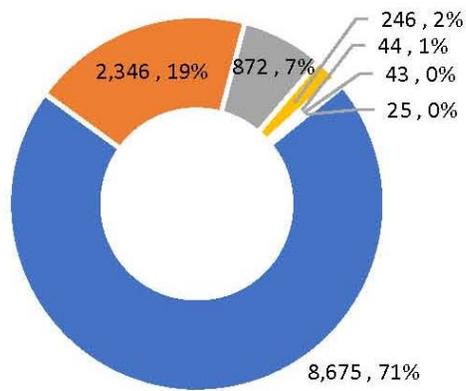
* Three private, public-use airports include Chandelle Estates, Jenkins, and Smyrna Airport.

Table 3-12 - Comparison of 2013 and 2017 Economic Impacts

Airport Name	2013 Employment	2017 Employment	% Change	2013 Total Impact	2017 Total Impact	% Change
Chorman Airport	20	31	54%	\$1,644,900	\$2,303,700	40%
Civil Air Terminal	25	31	23%	\$1,947,900	\$2,001,900	3%
Dover Air Force Base	8,675	8,030	-7%	\$658,678,800	\$564,000,000	-14%
Delaware Airpark	44	70	59%	\$3,711,600	\$8,273,300	123%
Delaware Coastal	872	780	-11%	\$139,452,200	\$147,872,800	6%
Laurel Airport	17	22	29%	\$1,377,800	\$1,203,300	-13%
New Castle Airport	2,346	2,619	12%	\$240,485,500	\$325,719,100	35%
Summit Airport	246	423	72%	\$22,651,900	\$65,615,700	190%
Private, Public-Use Airports*	6	6	0%	\$559,000	\$591,300	6%
Grand Totals	12,251	12,011	-2%	\$1,070,509,600	\$1,117,581,100	+4%

* Three private, public-use airports include Chandelle Estates, Jenkins, and Smyrna Airport.

2013 Airport Related Jobs



2017 Airport Related Jobs

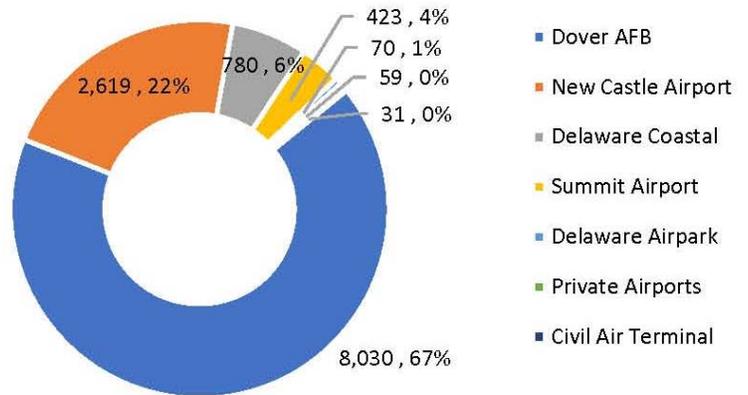


Figure 3-1 - Comparison of 2013-2018 Job Creation Numbers by Airport

Appendix 3-A: IMPLAN Table Results

Economic Impact of Chorman Airport, Kent County DE, 2017

Employment

Description	Direct	Indirect	Induced	Total
Total	24.4	2.1	4.3	30.8
11 Ag, Forestry, Fish & Hunting	20.0	0.0	0.0	20.0
21 Mining	0.0	0.0	0.0	0.0
22 Utilities	0.0	0.0	0.0	0.0
23 Construction	1.4	0.1	0.0	1.6
31-33 Manufacturing	0.0	0.0	0.0	0.0
42 Wholesale Trade	0.0	0.1	0.1	0.2
44-45 Retail trade	0.0	0.2	1.0	1.2
48-49 Transportation & Warehousing	3.0	1.0	0.1	4.1
51 Information	0.0	0.0	0.0	0.0
52 Finance & insurance	0.0	0.0	0.2	0.2
53 Real estate & rental	0.0	0.1	0.2	0.3
54 Professional- scientific & tech Services	0.0	0.1	0.1	0.3
55 Management of companies	0.0	0.0	0.0	0.0
56 Administrative & waste services	0.0	0.3	0.2	0.4
61 Educational Services	0.0	0.0	0.1	0.1
62 Health & social services	0.0	0.0	1.1	1.1
71 Arts- entertainment & recreation	0.0	0.0	0.2	0.2
72 Accommodation & food services	0.0	0.0	0.5	0.5
81 Other services	0.0	0.1	0.4	0.5
92 Government & non NAICs	0.0	0.0	0.0	0.0
<i>Multiplier</i>	1.26			

Income

Description	Direct	Indirect	Induced	Total
Total	\$786,981	\$107,000	\$164,993	\$1,058,974
11 Ag, Forestry, Fish & Hunting	\$506,900	\$344	\$119	\$507,363
21 Mining	\$0	-\$6	\$2	-\$4
22 Utilities	\$0	\$1,770	\$2,542	\$4,312
23 Construction	\$60,336	\$3,554	\$2,072	\$65,962
31-33 Manufacturing	\$0	\$337	\$157	\$494
42 Wholesale Trade	\$0	\$5,885	\$4,127	\$10,012
44-45 Retail trade	\$0	\$6,246	\$28,368	\$34,614
48-49 Transportation & Warehousing	\$219,745	\$60,115	\$5,913	\$285,773
51 Information	\$0	\$470	\$1,900	\$2,370
52 Finance & insurance	\$0	\$2,482	\$8,038	\$10,520
53 Real estate & rental	\$0	\$2,531	\$3,275	\$5,805
54 Professional- scientific & tech Services	\$0	\$8,512	\$6,896	\$15,408
55 Management of companies	\$0	\$773	\$634	\$1,407
56 Administrative & waste services	\$0	\$9,385	\$7,260	\$16,646
61 Educational Services	\$0	\$150	\$3,499	\$3,649
62 Health & social services	\$0	\$0	\$58,494	\$58,494
71 Arts- entertainment & recreation	\$0	\$101	\$3,989	\$4,091
72 Accommodation & food services	\$0	\$457	\$10,596	\$11,053
81 Other services	\$0	\$3,066	\$16,578	\$19,644
92 Government & non NAICs	\$0	\$827	\$535	\$1,361
<i>Multiplier</i>	1.35			

Output

Description	Direct	Indirect	Induced	Total
Total	\$1,496,648	\$270,229	\$536,802	\$2,303,679
11 Ag, Forestry, Fish & Hunting	\$765,381	\$554	\$341	\$766,276
21 Mining	\$0	\$130	\$22	\$152
22 Utilities	\$0	\$9,163	\$15,277	\$24,440
23 Construction	\$200,000	\$11,789	\$7,045	\$218,834
31-33 Manufacturing	\$0	\$2,370	\$975	\$3,345
42 Wholesale Trade	\$0	\$20,147	\$14,128	\$34,274
44-45 Retail trade	\$0	\$14,048	\$67,679	\$81,727
48-49 Transportation & Warehousing	\$531,267	\$126,947	\$13,511	\$671,726
51 Information	\$0	\$3,139	\$14,109	\$17,249
52 Finance & insurance	\$0	\$13,993	\$61,296	\$75,288
53 Real estate & rental	\$0	\$18,747	\$130,029	\$148,776
54 Professional- scientific & tech Services	\$0	\$17,440	\$15,021	\$32,461
55 Management of companies	\$0	\$2,856	\$2,342	\$5,198
56 Administrative & waste services	\$0	\$17,646	\$13,147	\$30,793
61 Educational Services	\$0	\$294	\$6,137	\$6,431
62 Health & social services	\$0	\$1	\$102,334	\$102,335
71 Arts- entertainment & recreation	\$0	\$341	\$13,343	\$13,683
72 Accommodation & food services	\$0	\$1,202	\$30,732	\$31,933
81 Other services	\$0	\$6,321	\$27,357	\$33,678
92 Government & non NAICs	\$0	\$3,103	\$1,977	\$5,080
<i>Multiplier</i>	1.54			

Taxes**State and Local**

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Dividends					\$176
Social Ins Tax- Employee Contribution	\$0	\$73			
Social Ins Tax- Employer Contribution		\$152			
TOPI: Sales Tax			\$9,425		
TOPI: Property Tax			\$9,281		
TOPI: Motor Vehicle Lic			\$353		
TOPI: Severance Tax			\$0		
TOPI: Other Taxes			\$26,533		
TOPI: S/L NonTaxes			\$627		
Corporate Profits Tax					\$2,964
Personal Tax: Income Tax				\$20,703	
Personal Tax: NonTaxes (Fines- Fees				\$3,662	
Personal Tax: Motor Vehicle License				\$712	
Personal Tax: Property Taxes				\$185	
Personal Tax: Other Tax (Fish/Hunt)				\$287	
Total State and Local Tax	\$0	\$225	\$46,219	\$25,548	\$3,140

Federal

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Social Ins Tax- Employee Contribution	\$10,868	\$51,167			
Social Ins Tax- Employer Contribution		\$49,198			
TOPI: Excise Taxes			\$3,691		
TOPI: Custom Duty			\$1,392		
TOPI: Fed NonTaxes			\$176		
Corporate Profits Tax					\$17,451
Personal Tax: Income Tax				\$69,225	
Total Federal Tax	\$10,868	\$100,365	\$5,259	\$69,225	\$17,451

Economic Impact of Civil Air Terminal, Kent County DE, 2017

Employment

Description	Direct	Indirect	Induced	Total
Total	24.5	2.3	3.7	30.6
11 Ag, Forestry, Fish & Hunting	0.0	0.0	0.0	0.0
21 Mining	0.0	0.0	0.0	0.0
22 Utilities	0.0	0.0	0.0	0.0
23 Construction	0.0	0.1	0.0	0.1
31-33 Manufacturing	0.0	0.0	0.0	0.0
42 Wholesale Trade	0.0	0.0	0.1	0.1
44-45 Retail trade	7.4	0.1	0.8	8.3
48-49 Transportation & Warehousing	2.4	0.5	0.1	3.0
51 Information	0.0	0.0	0.0	0.1
52 Finance & insurance	0.0	0.1	0.2	0.3
53 Real estate & rental	0.0	0.3	0.2	0.5
54 Professional- scientific & tech Services	0.3	0.2	0.1	0.7
55 Management of companies	0.0	0.1	0.0	0.1
56 Administrative & waste services	0.0	0.4	0.2	0.6
61 Educational Services	0.0	0.0	0.1	0.1
62 Health & social services	0.0	0.0	0.9	0.9
71 Arts- entertainment & recreation	4.4	0.2	0.1	4.7
72 Accommodation & food services	10.0	0.1	0.4	10.6
81 Other services	0.0	0.1	0.4	0.5
92 Government & non NAICs	0.0	0.0	0.0	0.0
<i>Multiplier</i>	1.25			

Income

Description	Direct	Indirect	Induced	Total
Total	\$677,718	\$96,218	\$142,645	\$916,582
11 Ag, Forestry, Fish & Hunting	\$0	\$38	\$102	\$140
21 Mining	\$0	-\$4	\$2	-\$3
22 Utilities	\$0	\$3,873	\$2,211	\$6,085
23 Construction	\$0	\$4,310	\$1,788	\$6,098
31-33 Manufacturing	\$0	\$307	\$136	\$443
42 Wholesale Trade	\$0	\$2,724	\$3,571	\$6,295
44-45 Retail trade	\$186,870	\$2,599	\$24,506	\$213,975
48-49 Transportation & Warehousing	\$99,701	\$28,375	\$5,102	\$133,178
51 Information	\$0	\$2,050	\$1,646	\$3,696
52 Finance & insurance	\$0	\$6,220	\$6,972	\$13,192
53 Real estate & rental	\$0	\$3,705	\$2,842	\$6,547
54 Professional- scientific & tech Services	\$25,303	\$11,905	\$5,941	\$43,149
55 Management of companies	\$0	\$2,679	\$549	\$3,227
56 Administrative & waste services	\$0	\$15,348	\$6,264	\$21,612
61 Educational Services	\$0	\$264	\$2,965	\$3,229
62 Health & social services	\$0	\$12	\$50,626	\$50,639
71 Arts- entertainment & recreation	\$87,529	\$2,989	\$3,437	\$93,955
72 Accommodation & food services	\$278,316	\$2,820	\$9,152	\$290,288
81 Other services	\$0	\$5,411	\$14,369	\$19,780
92 Government & non NAICs	\$0	\$592	\$465	\$1,057
<i>Multiplier</i>	1.35			

Output

Description	Direct	Indirect	Induced	Total
Total	\$1,246,627	\$291,315	\$463,991	\$2,001,933
11 Ag, Forestry, Fish & Hunting	\$0	\$482	\$294	\$775
21 Mining	\$0	\$52	\$19	\$71
22 Utilities	\$0	\$23,743	\$13,296	\$37,039
23 Construction	\$0	\$14,304	\$6,078	\$20,382
31-33 Manufacturing	\$0	\$1,726	\$844	\$2,570
42 Wholesale Trade	\$0	\$9,325	\$12,224	\$21,549
44-45 Retail trade	\$125,804	\$5,883	\$58,466	\$190,153
48-49 Transportation & Warehousing	\$249,727	\$57,648	\$11,651	\$319,026
51 Information	\$0	\$11,327	\$12,256	\$23,583
52 Finance & insurance	\$0	\$27,935	\$53,280	\$81,216
53 Real estate & rental	\$0	\$47,188	\$111,946	\$159,134
54 Professional- scientific & tech Services	\$50,000	\$24,714	\$12,929	\$87,643
55 Management of companies	\$0	\$9,895	\$2,027	\$11,922
56 Administrative & waste services	\$0	\$28,863	\$11,336	\$40,199
61 Educational Services	\$0	\$431	\$5,202	\$5,633
62 Health & social services	\$0	\$27	\$88,644	\$88,671
71 Arts- entertainment & recreation	\$213,852	\$8,590	\$11,530	\$233,972
72 Accommodation & food services	\$607,243	\$5,925	\$26,546	\$639,714
81 Other services	\$0	\$11,040	\$23,706	\$34,746
92 Government & non NAICs	\$0	\$2,219	\$1,718	\$3,937
<i>Multiplier</i>	1.61			

Taxes**State and Local**

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Dividends					\$162
Social Ins Tax- Employee Contribution	\$0	\$74			
Social Ins Tax- Employer Contribution		\$155			
TOPI: Sales Tax			\$20,833		
TOPI: Property Tax			\$20,513		
TOPI: Motor Vehicle Lic			\$780		
TOPI: Severance Tax			\$0		
TOPI: Other Taxes			\$58,645		
TOPI: S/L NonTaxes			\$1,385		
Corporate Profits Tax					\$2,736
Personal Tax: Income Tax				\$17,708	
Personal Tax: NonTaxes (Fines- Fees				\$3,132	
Personal Tax: Motor Vehicle License				\$609	
Personal Tax: Property Taxes				\$158	
Personal Tax: Other Tax (Fish/Hunt)				\$246	
Total State and Local Tax	\$0	\$228	\$102,156	\$21,852	\$2,898

Federal

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Social Ins Tax- Employee Contribution	\$3,875	\$52,017			
Social Ins Tax- Employer Contribution		\$50,015			
TOPI: Excise Taxes			\$8,157		
TOPI: Custom Duty			\$3,078		
TOPI: Fed NonTaxes			\$388		
Corporate Profits Tax					\$16,104
Personal Tax: Income Tax				\$59,211	
Total Federal Tax	\$3,875	\$102,032	\$11,623	\$59,211	\$16,104

Economic Impact of Delaware Airpark, Kent County DE, 2017

Employment

Description	Direct	Indirect	Induced	Total
Total	47.0	10.7	12.1	69.8
11 Ag, Forestry, Fish & Hunting	0.0	0.1	0.0	0.1
21 Mining	0.0	0.0	0.0	0.0
22 Utilities	0.0	0.1	0.0	0.1
23 Construction	23.6	0.3	0.1	24.1
31-33 Manufacturing	0.0	0.0	0.0	0.0
42 Wholesale Trade	0.0	0.4	0.2	0.6
44-45 Retail trade	1.5	3.2	2.7	7.5
48-49 Transportation & Warehousing	9.4	3.3	0.4	13.1
51 Information	0.0	0.1	0.1	0.2
52 Finance & insurance	0.0	0.2	0.6	0.7
53 Real estate & rental	0.0	0.6	0.6	1.2
54 Professional- scientific & tech Services	0.0	0.6	0.4	0.9
55 Management of companies	0.0	0.1	0.0	0.1
56 Administrative & waste services	0.0	1.1	0.5	1.6
61 Educational Services	9.5	0.1	0.3	9.9
62 Health & social services	0.0	0.0	3.0	3.0
71 Arts- entertainment & recreation	0.9	0.1	0.4	1.4
72 Accommodation & food services	2.1	0.2	1.4	3.6
81 Other services	0.0	0.4	1.3	1.6
92 Government & non NAICs	0.0	0.0	0.0	0.1
<i>Multiplier</i>	1.48			

Income

Description	Direct	Indirect	Induced	Total
Total	\$2,018,318	\$475,904	\$459,725	\$2,953,947
11 Ag, Forestry, Fish & Hunting	\$0	\$933	\$330	\$1,263
21 Mining	\$0	\$130	\$5	\$135
22 Utilities	\$0	\$8,018	\$7,126	\$15,144
23 Construction	\$1,002,256	\$12,127	\$5,762	\$1,020,145
31-33 Manufacturing	\$0	\$1,526	\$439	\$1,965
42 Wholesale Trade	\$0	\$24,419	\$11,508	\$35,927
44-45 Retail trade	\$38,645	\$96,116	\$78,980	\$213,741
48-49 Transportation & Warehousing	\$672,278	\$193,695	\$16,444	\$882,417
51 Information	\$0	\$4,557	\$5,304	\$9,861
52 Finance & insurance	\$0	\$12,084	\$22,467	\$34,551
53 Real estate & rental	\$0	\$18,595	\$9,160	\$27,754
54 Professional- scientific & tech Services	\$0	\$32,171	\$19,150	\$51,320
55 Management of companies	\$0	\$3,753	\$1,768	\$5,521
56 Administrative & waste services	\$0	\$41,039	\$20,189	\$61,228
61 Educational Services	\$229,483	\$2,280	\$9,558	\$241,322
62 Health & social services	\$0	\$4	\$163,159	\$163,163
71 Arts- entertainment & recreation	\$18,101	\$1,348	\$11,077	\$30,526
72 Accommodation & food services	\$57,556	\$3,633	\$29,497	\$90,686
81 Other services	\$0	\$16,619	\$46,306	\$62,925
92 Government & non NAICs	\$0	\$2,857	\$1,498	\$4,354
<i>Multiplier</i>	1.46			

Output

Description	Direct	Indirect	Induced	Total
Total	\$5,508,706	\$1,269,229	\$1,495,382	\$8,273,316
11 Ag, Forestry, Fish & Hunting	\$0	\$2,288	\$946	\$3,235
21 Mining	\$0	\$932	\$62	\$994
22 Utilities	\$0	\$44,163	\$42,847	\$87,010
23 Construction	\$3,322,238	\$40,238	\$19,588	\$3,382,064
31-33 Manufacturing	\$0	\$7,085	\$2,720	\$9,806
42 Wholesale Trade	\$0	\$83,591	\$39,394	\$122,985
44-45 Retail trade	\$26,016	\$216,618	\$188,430	\$431,064
48-49 Transportation & Warehousing	\$1,627,135	\$411,334	\$37,551	\$2,076,020
51 Information	\$0	\$28,397	\$39,497	\$67,893
52 Finance & insurance	\$0	\$66,109	\$171,697	\$237,806
53 Real estate & rental	\$0	\$147,914	\$360,812	\$508,726
54 Professional- scientific & tech Services	\$0	\$66,984	\$41,672	\$108,656
55 Management of companies	\$0	\$13,864	\$6,531	\$20,395
56 Administrative & waste services	\$0	\$77,728	\$36,536	\$114,264
61 Educational Services	\$363,514	\$3,644	\$16,771	\$383,930
62 Health & social services	\$0	\$9	\$285,677	\$285,687
71 Arts- entertainment & recreation	\$44,225	\$3,949	\$37,159	\$85,332
72 Accommodation & food services	\$125,578	\$9,545	\$85,556	\$220,679
81 Other services	\$0	\$34,178	\$76,398	\$110,576
92 Government & non NAICs	\$0	\$10,658	\$5,537	\$16,195
<i>Multiplier</i>	1.50			

Taxes**State and Local**

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Dividends					\$829
Social Ins Tax- Employee Contribution	\$0	\$237			
Social Ins Tax- Employer Contribution		\$497			
TOPI: Sales Tax			\$35,959		
TOPI: Property Tax			\$35,407		
TOPI: Motor Vehicle Lic			\$1,347		
TOPI: Severance Tax			\$0		
TOPI: Other Taxes			\$101,228		
TOPI: S/L NonTaxes			\$2,391		
Corporate Profits Tax					\$13,963
Personal Tax: Income Tax				\$57,081	
Personal Tax: NonTaxes (Fines- Fees				\$10,097	
Personal Tax: Motor Vehicle License				\$1,962	
Personal Tax: Property Taxes				\$510	
Personal Tax: Other Tax (Fish/Hunt)				\$792	
Total State and Local Tax	\$0	\$734	\$176,333	\$70,441	\$14,793

Federal

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Social Ins Tax- Employee Contribution	\$12,814	\$167,182			
Social Ins Tax- Employer Contribution		\$160,747			
TOPI: Excise Taxes			\$14,080		
TOPI: Custom Duty			\$5,312		
TOPI: Fed NonTaxes			\$670		
Corporate Profits Tax					\$82,200
Personal Tax: Income Tax				\$190,865	
Total Federal Tax	\$12,814	\$327,929	\$20,062	\$190,865	\$82,200

Economic Impact of Delaware Coastal, Sussex County DE, 2017

Employment

Description	Direct	Indirect	Induced	Total
Total	426.8	254.8	98.6	780.2
11 Ag, Forestry, Fish & Hunting	0.0	0.1	0.1	0.2
21 Mining	0.0	4.8	0.1	4.8
22 Utilities	0.0	0.6	0.4	1.0
23 Construction	15.4	4.7	1.2	21.3
31-33 Manufacturing	0.0	4.2	0.3	4.4
42 Wholesale Trade	0.0	10.6	2.2	12.8
44-45 Retail trade	2.5	3.4	20.4	26.3
48-49 Transportation & Warehousing	354.3	110.2	2.8	467.3
51 Information	0.0	2.4	0.8	3.2
52 Finance & insurance	0.0	4.6	4.1	8.8
53 Real estate & rental	0.0	17.0	7.0	24.0
54 Professional- scientific & tech Services	0.0	22.4	3.7	26.1
55 Management of companies	0.0	1.1	0.2	1.3
56 Administrative & waste services	0.0	32.6	6.3	38.9
61 Educational Services	0.0	0.3	1.3	1.6
62 Health & social services	12.5	0.0	21.8	34.3
71 Arts- entertainment & recreation	2.6	2.6	3.7	8.9
72 Accommodation & food services	23.5	30.2	14.0	67.7
81 Other services	0.0	3.0	8.2	11.2
92 Government & non NAICs	16.0	0.0	0.0	16.0
<i>Multiplier</i>	1.83			

Income

Description	Direct	Indirect	Induced	Total
Total	\$6,909,413	\$13,316,962	\$3,891,518	\$24,117,893
11 Ag, Forestry, Fish & Hunting	\$0	\$1,851	\$10,432	\$12,284
21 Mining	\$0	\$3,430	\$46	\$3,476
22 Utilities	\$0	\$77,324	\$50,527	\$127,851
23 Construction	\$951,458	\$289,319	\$70,656	\$1,311,433
31-33 Manufacturing	\$0	\$533,880	\$16,722	\$550,602
42 Wholesale Trade	\$0	\$532,574	\$113,045	\$645,619
44-45 Retail trade	\$72,732	\$109,542	\$654,318	\$836,592
48-49 Transportation & Warehousing	\$3,679,432	\$6,086,368	\$100,644	\$9,866,444
51 Information	\$0	\$110,516	\$35,998	\$146,515
52 Finance & insurance	\$0	\$212,941	\$118,943	\$331,884
53 Real estate & rental	\$0	\$1,908,758	\$144,311	\$2,053,069
54 Professional- scientific & tech Services	\$0	\$1,135,946	\$184,205	\$1,320,151
55 Management of companies	\$0	\$130,997	\$22,298	\$153,295
56 Administrative & waste services	\$0	\$1,069,682	\$203,433	\$1,273,115
61 Educational Services	\$0	\$4,203	\$22,181	\$26,384
62 Health & social services	\$597,147	\$844	\$1,433,863	\$2,031,854
71 Arts- entertainment & recreation	\$17,339	\$8,647	\$51,837	\$77,824
72 Accommodation & food services	\$633,586	\$946,576	\$361,668	\$1,941,830
81 Other services	\$0	\$153,564	\$296,391	\$449,955
92 Government & non NAICs	\$957,719	\$0	\$0	\$957,719
<i>Multiplier</i>	3.49			

Output

Description	Direct	Indirect	Induced	Total
Total	\$80,600,496	\$53,972,032	\$13,300,265	\$147,872,794
11 Ag, Forestry, Fish & Hunting	\$0	\$7,441	\$27,464	\$34,905
21 Mining	\$0	\$307,451	\$4,001	\$311,452
22 Utilities	\$0	\$655,726	\$442,353	\$1,098,079
23 Construction	\$2,413,000	\$735,241	\$187,276	\$3,335,517
31-33 Manufacturing	\$0	\$16,671,955	\$227,347	\$16,899,302
42 Wholesale Trade	\$0	\$1,975,541	\$419,331	\$2,394,873
44-45 Retail trade	\$45,944	\$255,324	\$1,592,801	\$1,894,069
48-49 Transportation & Warehousing	\$74,466,690	\$15,825,966	\$274,591	\$90,567,247
51 Information	\$0	\$704,952	\$322,018	\$1,026,971
52 Finance & insurance	\$0	\$1,614,204	\$1,176,405	\$2,790,609
53 Real estate & rental	\$0	\$7,977,772	\$3,472,962	\$11,450,734
54 Professional- scientific & tech Services	\$0	\$2,486,397	\$409,490	\$2,895,888
55 Management of companies	\$0	\$289,606	\$49,297	\$338,902
56 Administrative & waste services	\$0	\$2,587,557	\$406,037	\$2,993,594
61 Educational Services	\$0	\$8,867	\$44,657	\$53,524
62 Health & social services	\$1,143,693	\$1,432	\$2,502,132	\$3,647,258
71 Arts- entertainment & recreation	\$78,099	\$76,512	\$215,012	\$369,622
72 Accommodation & food services	\$1,292,962	\$1,468,351	\$936,160	\$3,697,473
81 Other services	\$0	\$321,737	\$590,932	\$912,668
92 Government & non NAICs	\$1,160,108	\$0	\$0	\$1,160,108
<i>Multiplier</i>	1.83			

Taxes**State and Local**

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Dividends					\$8,408
Social Ins Tax- Employee Contribution	\$0	\$1,641			
Social Ins Tax- Employer Contribution		\$3,437			
TOPI: Sales Tax			\$607,255		
TOPI: Property Tax			\$675,226		
TOPI: Motor Vehicle Lic			\$21,531		
TOPI: Severance Tax			\$0		
TOPI: Other Taxes			\$1,743,263		
TOPI: S/L NonTaxes			\$91,812		
Corporate Profits Tax					\$146,681
Personal Tax: Income Tax				\$482,905	
Personal Tax: NonTaxes (Fines- Fees				\$73,756	
Personal Tax: Motor Vehicle License				\$16,668	
Personal Tax: Property Taxes				\$5,156	
Personal Tax: Other Tax (Fish/Hunt)				\$6,738	
Total State and Local Tax	\$0	\$5,078	\$3,139,087	\$585,224	\$155,089

Federal

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Social Ins Tax- Employee Contribution	\$252,484	\$1,354,091			
Social Ins Tax- Employer Contribution		\$1,301,964			
TOPI: Excise Taxes			\$241,886		
TOPI: Custom Duty			\$91,262		
TOPI: Fed NonTaxes			\$11,510		
Corporate Profits Tax					\$863,504
Personal Tax: Income Tax				\$1,624,123	
Total Federal Tax	\$252,484	\$2,656,054	\$344,658	\$1,624,123	\$863,504

Economic Impact of Laurel Airport, Sussex County DE, 2017

Employment

Description	Direct	Indirect	Induced	Total
Total	18.3	1.5	2.2	22.0
11 Ag, Forestry, Fish & Hunting	2.5	0.0	0.0	2.5
21 Mining	0.0	0.0	0.0	0.0
22 Utilities	0.0	0.0	0.0	0.0
23 Construction	0.2	0.0	0.0	0.3
31-33 Manufacturing	0.0	0.0	0.0	0.0
42 Wholesale Trade	0.0	0.0	0.0	0.1
44-45 Retail trade	2.3	0.1	0.4	2.8
48-49 Transportation & Warehousing	0.7	0.1	0.1	0.9
51 Information	0.0	0.0	0.0	0.1
52 Finance & insurance	0.0	0.0	0.1	0.1
53 Real estate & rental	0.0	0.3	0.2	0.4
54 Professional- scientific & tech Services	0.0	0.2	0.1	0.3
55 Management of companies	0.0	0.0	0.0	0.0
56 Administrative & waste services	0.0	0.3	0.1	0.4
61 Educational Services	7.0	0.0	0.0	7.1
62 Health & social services	0.0	0.0	0.5	0.5
71 Arts- entertainment & recreation	2.4	0.2	0.1	2.7
72 Accommodation & food services	3.2	0.1	0.3	3.5
81 Other services	0.0	0.0	0.2	0.2
92 Government & non NAICs	0.0	0.0	0.0	0.0
<i>Multiplier</i>	1.20			

Income

Description	Direct	Indirect	Induced	Total
Total	\$393,035	\$50,920	\$85,438	\$529,392
11 Ag, Forestry, Fish & Hunting	\$93,754	\$91	\$229	\$94,074
21 Mining	\$0	\$2	\$1	\$3
22 Utilities	\$0	\$1,444	\$1,110	\$2,554
23 Construction	\$11,829	\$2,647	\$1,551	\$16,027
31-33 Manufacturing	\$0	\$724	\$367	\$1,091
42 Wholesale Trade	\$0	\$2,160	\$2,482	\$4,642
44-45 Retail trade	\$66,678	\$2,054	\$14,361	\$83,092
48-49 Transportation & Warehousing	\$19,183	\$6,299	\$2,208	\$27,691
51 Information	\$0	\$1,590	\$791	\$2,381
52 Finance & insurance	\$0	\$2,153	\$2,613	\$4,766
53 Real estate & rental	\$0	\$5,324	\$3,171	\$8,495
54 Professional- scientific & tech Services	\$0	\$9,539	\$4,041	\$13,580
55 Management of companies	\$0	\$1,735	\$490	\$2,224
56 Administrative & waste services	\$0	\$10,125	\$4,465	\$14,590
61 Educational Services	\$89,169	\$584	\$485	\$90,238
62 Health & social services	\$0	\$7	\$31,491	\$31,498
71 Arts- entertainment & recreation	\$15,896	\$554	\$1,137	\$17,587
72 Accommodation & food services	\$96,525	\$1,624	\$7,938	\$106,087
81 Other services	\$0	\$2,263	\$6,507	\$8,771
92 Government & non NAICs	\$0	\$0	\$0	\$0
<i>Multiplier</i>	1.35			

Output

Description	Direct	Indirect	Induced	Total
Total	\$716,632	\$194,636	\$291,983	\$1,203,252
11 Ag, Forestry, Fish & Hunting	\$127,730	\$347	\$603	\$128,679
21 Mining	\$0	\$146	\$88	\$234
22 Utilities	\$0	\$12,661	\$9,721	\$22,382
23 Construction	\$30,000	\$6,738	\$4,110	\$40,847
31-33 Manufacturing	\$0	\$8,843	\$4,994	\$13,837
42 Wholesale Trade	\$0	\$8,012	\$9,206	\$17,218
44-45 Retail trade	\$42,119	\$4,816	\$34,958	\$81,894
48-49 Transportation & Warehousing	\$53,964	\$14,106	\$6,024	\$74,094
51 Information	\$0	\$10,369	\$7,073	\$17,442
52 Finance & insurance	\$0	\$15,219	\$25,850	\$41,068
53 Real estate & rental	\$0	\$53,620	\$76,211	\$129,831
54 Professional- scientific & tech Services	\$0	\$20,398	\$8,983	\$29,381
55 Management of companies	\$0	\$3,835	\$1,082	\$4,917
56 Administrative & waste services	\$0	\$20,539	\$8,910	\$29,449
61 Educational Services	\$187,917	\$1,231	\$977	\$190,125
62 Health & social services	\$0	\$14	\$54,957	\$54,970
71 Arts- entertainment & recreation	\$71,598	\$5,661	\$4,716	\$81,975
72 Accommodation & food services	\$203,305	\$3,490	\$20,547	\$227,342
81 Other services	\$0	\$4,592	\$12,974	\$17,566
92 Government & non NAICs	\$0	\$0	\$0	\$0
<i>Multiplier</i>	1.68			

Taxes**State and Local**

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Dividends					\$97
Social Ins Tax- Employee Contribution	\$0	\$37			
Social Ins Tax- Employer Contribution		\$77			
TOPI: Sales Tax			\$9,114		
TOPI: Property Tax			\$10,134		
TOPI: Motor Vehicle Lic			\$323		
TOPI: Severance Tax			\$0		
TOPI: Other Taxes			\$26,164		
TOPI: S/L NonTaxes			\$1,378		
Corporate Profits Tax					\$1,686
Personal Tax: Income Tax				\$10,578	
Personal Tax: NonTaxes (Fines- Fees				\$1,616	
Personal Tax: Motor Vehicle License				\$365	
Personal Tax: Property Taxes				\$113	
Personal Tax: Other Tax (Fish/Hunt)				\$148	
Total State and Local Tax	\$0	\$114	\$47,113	\$12,819	\$1,783

Federal

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Social Ins Tax- Employee Contribution	\$5,108	\$30,434			
Social Ins Tax- Employer Contribution		\$29,262			
TOPI: Excise Taxes			\$3,630		
TOPI: Custom Duty			\$1,370		
TOPI: Fed NonTaxes			\$173		
Corporate Profits Tax					\$9,926
Personal Tax: Income Tax				\$35,576	
Total Federal Tax	\$5,108	\$59,696	\$5,173	\$35,576	\$9,926

Economic Impact of New Castle Airport, New Castle County DE, 2017

Employment

Description	Direct	Indirect	Induced	Total
Total	1,673.7	410.9	534.0	2,618.7
11 Ag, Forestry, Fish & Hunting	0.0	0.1	0.2	0.3
21 Mining	0.0	0.5	0.0	0.5
22 Utilities	0.0	1.2	1.9	3.1
23 Construction	43.7	14.8	5.5	64.0
31-33 Manufacturing	0.0	1.3	0.8	2.1
42 Wholesale Trade	0.0	7.7	12.4	20.0
44-45 Retail trade	9.3	11.1	98.4	118.9
48-49 Transportation & Warehousing	647.1	221.7	15.5	884.2
51 Information	0.0	3.6	6.4	9.9
52 Finance & insurance	0.0	6.8	24.2	31.1
53 Real estate & rental	5.0	17.9	25.9	48.8
54 Professional- scientific & tech Services	0.0	21.9	20.7	42.6
55 Management of companies	0.0	7.4	3.3	10.6
56 Administrative & waste services	0.0	67.4	31.5	98.9
61 Educational Services	212.5	3.1	23.2	238.8
62 Health & social services	0.0	0.0	121.2	121.2
71 Arts- entertainment & recreation	6.5	3.3	19.3	29.0
72 Accommodation & food services	101.5	6.5	71.3	179.2
81 Other services	0.0	12.6	50.8	63.4
92 Government & non NAICs	648.0	2.3	1.6	651.9
<i>Multiplier</i>	1.56			

Income

Description	Direct	Indirect	Induced	Total
Total	\$86,870,335	\$25,520,083	\$26,148,397	\$138,538,815
11 Ag, Forestry, Fish & Hunting	\$0	\$1,240	\$3,768	\$5,007
21 Mining	\$0	-\$22,508	-\$1,593	-\$24,101
22 Utilities	\$0	\$177,048	\$271,339	\$448,387
23 Construction	\$2,704,547	\$916,873	\$339,927	\$3,961,347
31-33 Manufacturing	\$0	\$163,096	\$78,162	\$241,258
42 Wholesale Trade	\$0	\$830,627	\$1,339,897	\$2,170,524
44-45 Retail trade	\$280,704	\$382,495	\$3,290,302	\$3,953,501
48-49 Transportation & Warehousing	\$54,461,859	\$14,484,671	\$1,021,958	\$69,968,488
51 Information	\$0	\$275,549	\$482,611	\$758,160
52 Finance & insurance	\$0	\$726,980	\$1,907,798	\$2,634,778
53 Real estate & rental	\$1,202,181	\$528,519	\$607,073	\$2,337,774
54 Professional- scientific & tech Services	\$0	\$1,974,889	\$1,894,025	\$3,868,914
55 Management of companies	\$0	\$1,030,364	\$456,764	\$1,487,128
56 Administrative & waste services	\$0	\$2,885,099	\$1,337,356	\$4,222,455
61 Educational Services	\$4,608,090	\$69,539	\$889,937	\$5,567,566
62 Health & social services	\$0	\$76	\$8,010,003	\$8,010,079
71 Arts- entertainment & recreation	\$105,271	\$27,360	\$380,063	\$512,693
72 Accommodation & food services	\$3,319,917	\$175,541	\$1,750,232	\$5,245,690
81 Other services	\$0	\$651,408	\$1,914,294	\$2,565,702
92 Government & non NAICs	\$20,187,766	\$241,218	\$174,480	\$20,603,464
<i>Multiplier</i>	1.59			

Output

Description	Direct	Indirect	Induced	Total
Total	\$186,271,007	\$61,370,863	\$78,077,238	\$325,719,108
11 Ag, Forestry, Fish & Hunting	\$0	\$2,216	\$6,245	\$8,460
21 Mining	\$0	\$8,252	\$410	\$8,661
22 Utilities	\$0	\$1,145,127	\$1,737,535	\$2,882,662
23 Construction	\$7,390,003	\$2,507,533	\$954,807	\$10,852,343
31-33 Manufacturing	\$0	\$2,225,428	\$1,106,739	\$3,332,167
42 Wholesale Trade	\$0	\$2,082,140	\$3,358,733	\$5,440,872
44-45 Retail trade	\$173,510	\$823,226	\$7,547,589	\$8,544,325
48-49 Transportation & Warehousing	\$121,149,803	\$29,364,823	\$2,086,152	\$152,600,777
51 Information	\$0	\$1,277,319	\$2,545,142	\$3,822,460
52 Finance & insurance	\$0	\$3,568,489	\$10,237,369	\$13,805,858
53 Real estate & rental	\$10,788,831	\$4,950,757	\$17,200,968	\$32,940,556
54 Professional- scientific & tech Services	\$0	\$3,118,203	\$3,324,386	\$6,442,588
55 Management of companies	\$0	\$2,105,151	\$933,221	\$3,038,373
56 Administrative & waste services	\$0	\$5,503,128	\$2,434,330	\$7,937,458
61 Educational Services	\$7,604,681	\$114,784	\$1,369,853	\$9,089,318
62 Health & social services	\$0	\$147	\$13,348,833	\$13,348,980
71 Arts- entertainment & recreation	\$294,945	\$132,147	\$1,321,918	\$1,749,010
72 Accommodation & food services	\$7,884,495	\$371,369	\$4,617,442	\$12,873,305
81 Other services	\$0	\$1,269,483	\$3,375,383	\$4,644,867
92 Government & non NAICs	\$30,984,739	\$801,142	\$570,183	\$32,356,065
<i>Multiplier</i>	1.75			

Taxes**State and Local**

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Dividends					\$31,685
Social Ins Tax- Employee Contribution	\$0	\$10,866			
Social Ins Tax- Employer Contribution		\$22,761			
TOPI: Sales Tax			\$1,009,334		
TOPI: Property Tax			\$1,767,045		
TOPI: Motor Vehicle Lic			\$43,248		
TOPI: Severance Tax			\$0		
TOPI: Other Taxes			\$3,280,479		
TOPI: S/L NonTaxes			\$1,456		
Corporate Profits Tax					\$752,536
Personal Tax: Income Tax				\$2,678,530	
Personal Tax: NonTaxes (Fines- Fees				\$422,343	
Personal Tax: Motor Vehicle License				\$85,905	
Personal Tax: Property Taxes				\$34,090	
Personal Tax: Other Tax (Fish/Hunt)				\$34,968	
Total State and Local Tax	\$0	\$33,627	\$6,101,562	\$3,255,836	\$784,221

Federal

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Social Ins Tax- Employee Contribution	\$719,635	\$7,068,515			
Social Ins Tax- Employer Contribution		\$6,796,405			
TOPI: Excise Taxes			\$771,801		
TOPI: Custom Duty			\$291,194		
TOPI: Fed NonTaxes			\$36,725		
Corporate Profits Tax					\$4,334,727
Personal Tax: Income Tax				\$8,421,065	
Total Federal Tax	\$719,635	\$13,864,921	\$1,099,721	\$8,421,065	\$4,334,727

Economic Impact of Summit Airport, Kent County DE, 2017

Employment

Description	Direct	Indirect	Induced	Total
Total	275.8	65.8	81.1	422.8
11 Ag, Forestry, Fish & Hunting	0.0	0.3	0.1	0.4
21 Mining	0.0	0.0	0.0	0.0
22 Utilities	0.0	0.4	0.3	0.6
23 Construction	6.1	0.9	0.8	7.8
31-33 Manufacturing	250.0	1.0	0.2	251.2
42 Wholesale Trade	0.0	8.3	1.8	10.1
44-45 Retail trade	1.1	1.4	15.3	17.8
48-49 Transportation & Warehousing	0.3	3.9	2.4	6.5
51 Information	0.0	2.9	0.9	3.8
52 Finance & insurance	0.0	3.5	3.8	7.3
53 Real estate & rental	0.0	2.7	4.3	7.0
54 Professional- scientific & tech Services	0.0	16.2	3.1	19.3
55 Management of companies	0.0	9.6	0.5	10.0
56 Administrative & waste services	0.0	7.9	4.7	12.6
61 Educational Services	0.0	0.0	2.9	2.9
62 Health & social services	0.0	0.0	18.2	18.2
71 Arts- entertainment & recreation	0.8	1.4	2.9	5.2
72 Accommodation & food services	1.6	3.8	10.9	16.2
81 Other services	0.0	1.7	7.7	9.4
92 Government & non NAICs	16.0	0.1	0.2	16.3
<i>Multiplier</i>	1.53			

Income

Description	Direct	Indirect	Induced	Total
Total	\$11,649,466	\$5,203,962	\$3,856,782	\$20,710,209
11 Ag, Forestry, Fish & Hunting	\$0	\$7,031	\$5,983	\$13,014
21 Mining	\$0	-\$250	-\$264	-\$514
22 Utilities	\$0	\$56,777	\$42,789	\$99,567
23 Construction	\$365,697	\$53,892	\$51,049	\$470,638
31-33 Manufacturing	\$9,923,248	\$68,408	\$17,445	\$10,009,101
42 Wholesale Trade	\$0	\$815,021	\$176,849	\$991,870
44-45 Retail trade	\$32,466	\$52,931	\$501,247	\$586,644
48-49 Transportation & Warehousing	\$11,609	\$248,883	\$142,717	\$403,208
51 Information	\$0	\$232,352	\$67,523	\$299,875
52 Finance & insurance	\$0	\$374,708	\$287,408	\$662,116
53 Real estate & rental	\$0	\$82,898	\$95,634	\$178,532
54 Professional- scientific & tech Services	\$0	\$1,318,039	\$265,961	\$1,584,000
55 Management of companies	\$0	\$1,313,866	\$67,610	\$1,381,476
56 Administrative & waste services	\$0	\$356,675	\$194,305	\$550,981
61 Educational Services	\$0	\$695	\$106,256	\$106,951
62 Health & social services	\$0	\$39	\$1,194,306	\$1,194,344
71 Arts- entertainment & recreation	\$11,770	\$13,127	\$59,495	\$84,392
72 Accommodation & food services	\$46,200	\$90,469	\$267,726	\$404,396
81 Other services	\$0	\$105,814	\$291,374	\$397,188
92 Government & non NAICs	\$1,258,475	\$12,586	\$21,369	\$1,292,430
<i>Multiplier</i>	1.78			

Output

Description	Direct	Indirect	Induced	Total
Total	\$41,039,438	\$12,814,504	\$11,761,801	\$65,615,743
11 Ag, Forestry, Fish & Hunting	\$0	\$14,341	\$15,542	\$29,883
21 Mining	\$0	\$506	\$428	\$934
22 Utilities	\$0	\$408,906	\$282,764	\$691,670
23 Construction	\$1,000,000	\$147,601	\$143,813	\$1,291,414
31-33 Manufacturing	\$38,336,836	\$392,893	\$206,145	\$38,935,874
42 Wholesale Trade	\$0	\$2,135,613	\$463,400	\$2,599,013
44-45 Retail trade	\$20,229	\$111,716	\$1,164,871	\$1,296,816
48-49 Transportation & Warehousing	\$25,918	\$450,767	\$300,174	\$776,859
51 Information	\$0	\$906,417	\$375,696	\$1,282,112
52 Finance & insurance	\$0	\$1,314,337	\$1,577,509	\$2,891,847
53 Real estate & rental	\$0	\$869,172	\$2,589,174	\$3,458,346
54 Professional- scientific & tech Services	\$0	\$2,139,883	\$476,012	\$2,615,894
55 Management of companies	\$0	\$2,703,349	\$139,110	\$2,842,460
56 Administrative & waste services	\$0	\$655,830	\$355,474	\$1,011,304
61 Educational Services	\$0	\$1,161	\$166,068	\$167,230
62 Health & social services	\$0	\$75	\$2,008,482	\$2,008,557
71 Arts- entertainment & recreation	\$34,387	\$51,563	\$210,025	\$295,975
72 Accommodation & food services	\$97,645	\$247,877	\$703,038	\$1,048,559
81 Other services	\$0	\$220,442	\$513,860	\$734,302
92 Government & non NAICs	\$1,524,423	\$42,054	\$70,216	\$1,636,693
<i>Multiplier</i>	1.60			

Taxes**State and Local**

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Dividends					\$3,394
Social Ins Tax- Employee Contribution	\$0	\$2,251			
Social Ins Tax- Employer Contribution		\$4,716			
TOPI: Sales Tax			\$318,281		
TOPI: Property Tax			\$501,378		
TOPI: Motor Vehicle Lic			\$13,102		
TOPI: Severance Tax			\$0		
TOPI: Other Taxes			\$1,001,922		
TOPI: S/L NonTaxes			\$9,921		
Corporate Profits Tax					\$77,480
Personal Tax: Income Tax				\$375,711	
Personal Tax: NonTaxes (Fines- Fees				\$59,627	
Personal Tax: Motor Vehicle License				\$12,241	
Personal Tax: Property Taxes				\$4,561	
Personal Tax: Other Tax (Fish/Hunt)				\$4,974	
Total State and Local Tax	\$0	\$6,967	\$1,844,604	\$457,115	\$80,874

Federal

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Social Ins Tax- Employee Contribution	-\$205,470	\$1,502,322			
Social Ins Tax- Employer Contribution		\$1,444,489			
TOPI: Excise Taxes			\$213,453		
TOPI: Custom Duty			\$80,534		
TOPI: Fed NonTaxes			\$10,157		
Corporate Profits Tax					\$447,335
Personal Tax: Income Tax				\$1,198,104	
Total Federal Tax	-\$205,470	\$2,946,811	\$304,144	\$1,198,104	\$447,335

Economic Impact of Private, Public-Use Airports, Kent County DE, 2017 (Chandelle Estates, Jenkins, Smyrna)

Employment

Description	Direct	Indirect	Induced	Total
Total	3.4	1.6	1.5	6.5
11 Ag, Forestry, Fish & Hunting	0.0	0.0	0.0	0.0
21 Mining	0.0	0.0	0.0	0.0
22 Utilities	0.0	0.0	0.0	0.0
23 Construction	0.4	0.1	0.0	0.4
31-33 Manufacturing	0.0	0.0	0.0	0.0
42 Wholesale Trade	0.0	0.0	0.0	0.0
44-45 Retail trade	0.0	0.1	0.3	0.4
48-49 Transportation & Warehousing	3.0	1.0	0.0	4.0
51 Information	0.0	0.0	0.0	0.0
52 Finance & insurance	0.0	0.0	0.1	0.1
53 Real estate & rental	0.0	0.1	0.1	0.1
54 Professional- scientific & tech Services	0.0	0.0	0.0	0.1
55 Management of companies	0.0	0.0	0.0	0.0
56 Administrative & waste services	0.0	0.2	0.1	0.3
61 Educational Services	0.0	0.0	0.0	0.0
62 Health & social services	0.0	0.0	0.4	0.4
71 Arts- entertainment & recreation	0.0	0.0	0.1	0.1
72 Accommodation & food services	0.0	0.0	0.2	0.2
81 Other services	0.0	0.1	0.2	0.2
92 Government & non NAICs	0.0	0.0	0.0	0.0
<i>Multiplier</i>	1.93			

Income

Description	Direct	Indirect	Induced	Total
Total	\$154,971	\$56,703.96	\$40,378.58	\$259,589
11 Ag, Forestry, Fish & Hunting	\$0	\$15	\$29	\$44
21 Mining	\$0	-\$10.00	\$0	-\$10
22 Utilities	\$0	\$850	\$628	\$1,478
23 Construction	\$9,954	\$2,165	\$506	\$13,109
31-33 Manufacturing	\$0	\$37	\$39	\$76
42 Wholesale Trade	\$0	\$868	\$1,011	\$1,879
44-45 Retail trade	\$0	\$1,353	\$6,934	\$8,287
48-49 Transportation & Warehousing	\$145,016	\$39,604	\$1,443	\$193,115
51 Information	\$0	\$203	\$466	\$670
52 Finance & insurance	\$0	\$861	\$1,976	\$2,837.31
53 Real estate & rental	\$0	\$937	\$806	\$1,743
54 Professional- scientific & tech Services	\$0	\$1,754	\$1,679	\$3,433
55 Management of companies	\$0	\$459	\$155	\$614
56 Administrative & waste services	\$0	\$5,279	\$1,772	\$7,050.34
61 Educational Services	\$0	\$8	\$832	\$840
62 Health & social services	\$0	\$0	\$14,338	\$14,338
71 Arts- entertainment & recreation	\$0	\$42	\$971	\$1,013
72 Accommodation & food services	\$0	\$204	\$2,590	\$2,794
81 Other services	\$0	\$1,524	\$4,072	\$5,596
92 Government & non NAICs	\$0	\$549	\$132	\$681
<i>Multiplier</i>	1.68			

Output

Description	Direct	Indirect	Induced	Total
Total	\$331,309	\$131,907.56	\$128,104.71	\$591,322
11 Ag, Forestry, Fish & Hunting	\$0	\$33	\$81	\$103.25
21 Mining	\$0	\$62	\$5	\$61.13
22 Utilities	\$0	\$3,913	\$3,682	\$6,885
23 Construction	\$50,000.00	\$7,006.02	\$1,677	\$38,462
31-33 Manufacturing	\$0	\$190	\$233	\$383
42 Wholesale Trade	\$0	\$2,899	\$3,376	\$5,688
44-45 Retail trade	\$0	\$2,953	\$16,138	\$17,304
48-49 Transportation & Warehousing	\$281,309.37	\$80,914	\$3,213	\$401,307.94
51 Information	\$0	\$1,402	\$3,391	\$4,345
52 Finance & insurance	\$0	\$4,937	\$14,747	\$17,842
53 Real estate & rental	\$0	\$7,026	\$30,852	\$34,332
54 Professional- scientific & tech Services	\$0	\$3,390	\$3,563	\$6,302
55 Management of companies	\$0	\$1,652	\$560	\$2,005
56 Administrative & waste services	\$0	\$9,774	\$3,126	\$11,692.91
61 Educational Services	\$0	\$14	\$1,423	\$1,303
62 Health & social services	\$0	\$0	\$24,498	\$22,205
71 Arts- entertainment & recreation	\$0	\$153	\$3,183	\$3,024
72 Accommodation & food services	\$0	\$509	\$7,327	\$7,102
81 Other services	\$0	\$3,065	\$6,552	\$8,717
92 Government & non NAICs	\$0	\$2,014	\$476	\$2,257
<i>Multiplier</i>	1.78			

Taxes**State and Local**

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Dividends					\$15
Social Ins Tax- Employee Contribution	\$0	\$60			
Social Ins Tax- Employer Contribution		\$108			
TOPI: Sales Tax			\$3,168		
TOPI: Property Tax			\$4,305		
TOPI: Motor Vehicle Lic			\$124		
TOPI: Severance Tax			\$0		
TOPI: Other Taxes			\$8,019		
TOPI: S/L NonTaxes			\$3,631		
Corporate Profits Tax					\$748
Personal Tax: Income Tax				\$5,334	
Personal Tax: NonTaxes (Fines- Fees				\$643	
Personal Tax: Motor Vehicle License				\$186	
Personal Tax: Property Taxes				\$61	
Personal Tax: Other Tax (Fish/Hunt)				\$52	
Total State and Local Tax	\$0	\$168	\$19,248	\$6,276	\$763

Federal

Description	Proprietor Income	Employee Comp.	Tax on Production and Imports	Households	Corporations
Social Ins Tax- Employee Contribution	\$826	\$9,977			
Social Ins Tax- Employer Contribution		\$12,964			
TOPI: Excise Taxes			\$1,368		
TOPI: Custom Duty			\$577		
TOPI: Fed NonTaxes			\$0		
Corporate Profits Tax					\$2,614
Personal Tax: Income Tax				\$14,485	
Total Federal Tax	\$826	\$22,941	\$1,945	\$14,485	\$2,614