

**THE REGIONAL AND LOCAL ECONOMIC
IMPACTS OF THE BALTIMORE/WASHINGTON
INTERNATIONAL AIRPORT AND THE STATE-
WIDE GENERAL AVIATION SYSTEM**

PREPARED FOR THE:



**Maryland
Aviation
Administration**

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EXECUTIVE SUMMARY

The Maryland Aviation Administration retained the services of Martin Associates to estimate the economic impacts of the Baltimore/Washington International Airport (BWI), and to further estimate the economic impacts of the entire state-wide aviation system, which consists of 34 general service and commuter airports as well as BWI. The purpose of the study is to defensibly quantify the economic impacts generated by passenger and air cargo activity at BWI, and to also quantify the economic impacts generated by the 34 general aviation and commuter airports. The impacts are quantified in terms of:

- Jobs
- Employee earnings
- Business revenue
- State and local taxes; and Federal airport-specific taxes.

The impacts are estimated for passenger and air cargo activity for calendar year 2002. In addition to the baseline impacts, an economic impact model has been developed for BWI as well as for the 34 other airports, which can be used to estimate the impacts associated with capital construction and expansion projects. Furthermore, the model can be used for annual updates of the impacts as well as to test the sensitivity of impacts to changes in:

- Passenger levels
- Domestic versus international passengers
- Passenger trip purpose
- Peak hour flight levels and mix of aircraft
- Labor productivity and work rules
- Freight levels
- General aviation operations.

In 2000, Martin Associates measured the economic impacts generated by passenger and air cargo activity at BWI and the general aviation airports, and the same methodology has been used to quantify the calendar year 2002 impacts. Therefore, direct comparisons can be made between the current impacts and those generated by passenger and air cargo activity in the previous period. In addition to our previous economic impact studies for BWI and the state airports, Martin Associates has developed similar impact studies for airport activity at the following airports:

- Hartsfield Atlanta International Airport
- Denver's Stapleton International Airport
- San Francisco International Airport
- Minneapolis/St. Paul International Airport
- Seattle-Tacoma International Airport
- Toronto's Lester B. Pearson International Airport

- Miami International Airport
- Washington Dulles and National Airports
- San Jose International Airport
- Oakland International Airport
- Portland International Airport
- Milwaukee's General Mitchell International Airport
- Sacramento International Airport
- Harrisburg International Airport
- General Aviation and Commuter Airports in:
 - Harrisburg, PA
 - Lancaster, PA
 - Carlisle, PA
 - Milwaukee, WI
 - San Jose, CA
 - Hillsboro, OR
 - Troutdale, OR
 - Mulino, OR

Table 1 shows the economic impact of the state-wide aviation activity in the year 2002.

Table 1
Economic Impact of the Maryland State Aviation Industry

	BWI Airport Generated	BWI Visitor Generated	General Aviation	Total
JOBS				
Direct Jobs	10,999	52,561	3,404	66,964
Induced Jobs	4,075	13,211	1,354	18,640
Indirect Jobs	<u>5,429</u>	<u>18,483</u>	2,005	<u>25,917</u>
Total Jobs	20,503	84,255	6,763	111,521
Personal Income (\$1,000)				
Direct	\$335,547	\$795,916	\$116,039	\$1,247,502
Induced	\$338,533	\$802,999	\$116,763	\$1,258,295
Indirect	<u>\$188,218</u>	<u>\$446,684</u>	<u>\$69,892</u>	<u>\$704,794</u>
Total	\$862,298	\$2,045,599	\$302,694	\$3,210,591
Business Revenue (\$1,000)	\$2,741,075	\$2,950,087	\$523,493	\$6,214,655
Local Purchases (\$1,000)	\$353,970	\$736,373	\$134,004	\$1,224,347
State and Local Taxes (\$1,000)	\$152,912	\$628,371	\$50,452	\$831,735
Federal Aviation Taxes	\$208,481	NA	\$1,136	\$209,617

In the year 2002, the aviation activity in the State of Maryland created the following economic impacts state-wide:

- 111,521 direct, induced and indirect jobs
- \$3.2 billion of personal wages and salaries
- \$6.2 billion of business revenue
- \$0.8 billion of state and local taxes
- \$1.2 billion of local purchases for supplies and services.

Activity at BWI created the majority of the economic impacts. In the year 2002, 19.1 million passengers used BWI, and 554 million pounds of air cargo moved via the airport. This activity at BWI generated the following impacts:

- 20,503 direct, induced and indirect jobs were generated for residents of the Baltimore area. Of the 20,503 jobs, 10,999 were direct jobs, while 4,075 jobs were induced throughout the region to support the purchase of goods and services by the 10,999 directly dependent employees. An additional 5,429 indirect jobs were generated in the local economy due to \$354 million of local purchases by firms directly dependent on airport activity.
- \$862.3 million of personal income and consumption expenditures were generated in the Baltimore area as a result of the airport activity in 2002.
- 2.7 billion of business sales were generated by airport activity.
- The Federal Government received \$208.5 million in airport-specific taxes from activity at BWI.
- State and local governments received \$152.9 million in tax revenues from airport activity.

In addition to these direct, induced and indirect impacts, it is estimated that 84,255 direct, induced and indirect jobs were generated in the Baltimore area visitor industry due to expenditures by 4.9 million visitors to the region who arrived via BWI. The impacts of the visitors are estimated from the results of a one-week passenger survey conducted by Martin Associates as part of this study. These visitors, who include both domestic as well as international travelers, spent about \$3.0 billion on area hotels, restaurants, retail stores and entertainment establishments, which in turn generated the jobs in the Baltimore area visitor industry. As a result of visitors arriving via the airport, \$628.4 million of state and local tax revenues were generated.

I. INTRODUCTION, OVERVIEW AND SUMMARY OF RESULTS

The Maryland Aviation Administration retained the services of Martin Associates to measure the economic impact of airport activity generated by the Baltimore/Washington International Airport (BWI) as well as the airport activity at the 34 additional general aviation and commuter airports located throughout the State of Maryland. The base year of the analysis is calendar year 2002. The economic impacts created by the airport and the state-wide system are measured in terms of jobs, personal income, state and local taxes, and revenue generated directly by airport activity, including the impact of visitors to the Baltimore/Washington metropolitan area who used BWI. The impacts of commercial airline passenger activity, air cargo activity, military and general aviation activity are also measured.

The methodology used in this analysis has been used to assess the economic impacts created by airport activity at Hartsfield Atlanta International Airport, San Francisco International Airport, Seattle-Tacoma International Airport, Portland International Airport, Minneapolis/ St. Paul International Airport, Toronto's Lester B. Pearson International Airport, Washington, DC's Reagan National Airport and Virginia's Dulles International Airport, Miami International Airport, Oakland International Airport, Sacramento International Airport, Milwaukee's General Mitchell International Airport, Harrisburg International Airport, and San Jose International Airport.

In order to measure the impacts in the most defensible manner possible, the methodology utilized is based on interviews, local economic data, and airport statistics. Operational models of BWI as well as each of the 34 other airports were developed to use in updating the impacts on a short term basis, and to measure the incremental changes in airport-generated impacts due to changes in such factors as changes in total passenger and air freight levels, changes in the number of flight operations, changes in domestic and international passenger levels, and changes in work rules by airlines. Also, the model can be used to test the economic impacts of various capital investment and airport expansion projects.

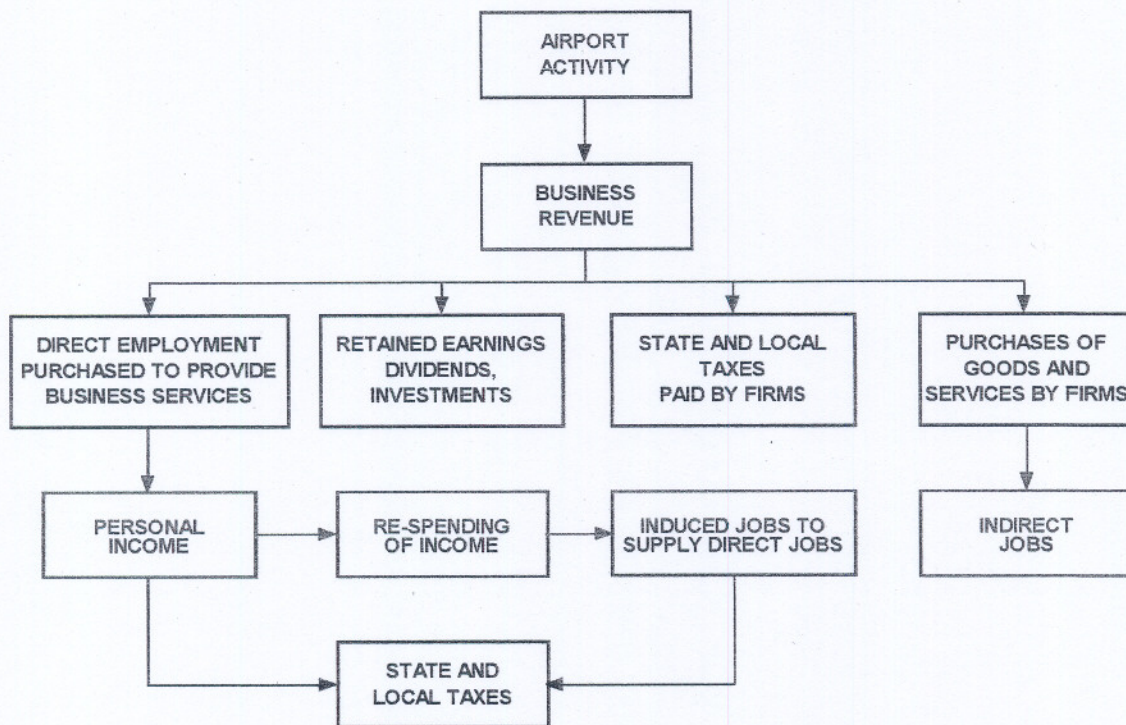
The remainder of this chapter summarizes the methodology, highlights key assumptions, and summarizes the major findings.

1. IMPACT STRUCTURE

Activity at a commercial airport contributes to the local and state economy by generating business revenue to local and national firms providing air passenger service, freight service and support services to the airport and the airlines. These firms, in turn, provide employment and income to individuals and pays taxes to state and local governments. Similarly, activity at general aviation airports and commuter airports supports jobs and income with those providing services at the airport as well as for airport tenants using the airport runways for corporate and business related operations. Exhibit 1 shows how air traffic activity at BWI and other general aviation and commuter airports

generates impacts throughout the local, state and national economy. As this exhibit indicates, the impact of an airport on a local, state or national economy cannot be reduced to a single number, but instead, airport activity creates several impacts. These are the revenue impact, employment impact, personal income impact, and tax impact. These impacts are not additive. For example, the income impact is a part of the revenue impact, and adding these impacts together would result in double counting.

Exhibit 1
Flow of Economic Impacts Generated by
Airport Activity



1.1 Revenue Impact

At the outset, activity at the airport generates business revenue for firms which provide air passenger service, freight service and ground support services for commercial and general aviation activity. This business revenue impact is dispersed throughout the economy in several ways. It is used to hire people to provide the services, to purchase goods and services, to pay for the use of airports and to make federal, state and local tax payments. The remainder is used to pay stockholders, retire debt, make investments, or is held as retained earnings. It is to be emphasized that the only portions of the revenue impact that can be definitely identified as remaining in the state are those portions paid out in salaries to direct employees, in state and local taxes, in local purchases, and in payments to the airport itself. Landing fees and terminal rents paid by airlines provide for some of the costs of operation of the airport and capital costs of new construction.

1.2 Employment Impact

The employment impact of aviation activity consists of four levels of job impacts.

- Direct employment impact - jobs directly generated by airport activity, which would vanish if activity at the airports were to cease.
- Induced employment impact - jobs created throughout the regional economy because individuals directly employed due to airport activity spend their wages locally on goods and services such as food and housing.
- Indirect employment impact - jobs generated due to the purchase of goods and services by firms dependent upon airport activity.
- Related employment impact - jobs with firms in the regional economy. These firms use BWI for air cargo shipments and receipts. Related jobs are not as directly dependent upon the airport as are the direct and induced jobs, but reflect the importance of BWI as a catalyst for economic development. At some level of reduced air service, this employment could be lost to other areas.

1.3 Income Impact

The income impact is the measure of personal wages and salaries received by individuals directly employed due to airport activity. This direct personal income is re-spent throughout the region by those that are directly employed. This re-spending effect in turn generates additional jobs -- the induced employment impact. This re-spending throughout the region is estimated using a regional personal income multiplier, which reflects the percentage of purchases that are made within a region. The re-spending effect varies by region: a larger re-spending effect occurs in regions that produce a relatively large proportion of the goods and services consumed by residents, while lower re-spending effects are associated with areas that import a relatively large share of consumer goods and services (since personal income "leaks out" of the region for these purchases).

1.4 Tax Impact

State and local tax impacts are tax payments to the state and local governments by both firms and individuals involved in providing services in support of airport activity. State and local tax impacts include tax revenue from all types of state and local taxes. Also included in the tax impact are Federal aviation-specific taxes generated by air passenger and air cargo activity at the Airport.

The four types of impacts outlined above are estimated for calendar year 2002 activity at BWI and the 34 general aviation and commuter airports in the State of Maryland.

2. ECONOMIC IMPACT SECTORS

An airport is a diverse economic system. The businesses that have employees at commercial airports such as BWI as well as at general aviation airports cover a spectrum of trade and service sectors. For the purposes of this study, the airport system is divided into five sectors:

- Airline/airport service
- Freight transportation
- Passenger ground transportation
- Contract construction/consulting services
- Visitor industry services.

Each of these sectors covers a variety of activities. A discussion of these five categories is provided below, with a description of the major participants in each.

2.1 Airline/Airport Service Sector

The airline/airport service sector consists of airlines providing passenger services, general aviation, and firms providing support services to the airlines, passengers, and to the airport. This group consists of the following participants:

- Passenger Airlines
- General Aviation, (i.e., corporate hangars and business aircraft, not-for-profit aviation services, flying clubs, etc.)
- Airport Administration
- Catering Firms
- Janitorial Firms
- Sky Caps
- Security Firms
- Aviation Service Firms (including fixed base operators)
- Airport Retail Tenants (i.e., newsstands, retail shops, and food concessions)
- Federal Government Agencies (i.e., F.A.A., Post Office, and U.S. Customs)
- Military Bases, including the Air National Guard and the Air Force Reserves
- Parking and Miscellaneous.

Jobs in this category are typically located on the airport property.

2.2 Freight Transportation Sector

Freight transportation includes freight airlines, freight forwarders, and trucking firms involved in transporting air cargo. The air cargo consists of air freight, express packages and mail transported on dedicated freight airlines and in the cargo section of passenger airlines. Included in this group are air couriers, freight forwarders, and common carrier trucking firms located throughout the Baltimore area. Jobs in this category are located both on and off the airport.

2.3 Passenger Ground Transportation Sector

Passenger ground transportation consists of car rental firms and other ground transportation modes, such as buses, taxis and limousines. This group covers all transportation of individuals to and from the airport and includes both drivers and supporting reservation and maintenance employees.

2.4 Contract Construction and Consulting Sector

Individuals employed in this group include those providing construction and remodeling work at BWI and the other airports, as well as architects and engineers providing planning and design services.

2.5 Visitor Industry Services Sector

Both domestic and international passengers arrive in the Baltimore area via BWI for several purposes, including business, pleasure, and conventions. As a result of these out-of-town residents purchasing lodging, food and entertainment, jobs are created in the service and retail sectors in the Baltimore and neighboring areas. To evaluate the impacts of visitors using BWI, Martin Associates conducted a one-week, in-terminal passenger survey. In addition, visitors also arrive at the commuter airports of Greater Cumberland Airport, Hagerstown Regional Airport and Salisbury-Ocean City Airport. The impacts of the visitors arriving via the three commuter airports were estimated based on the profiles of domestic passenger expenditures and trip characteristics developed from the passenger surveys conducted at BWI. No specific passenger surveys were conducted at the commuter airports.

3. DATA COLLECTION

Impacts were estimated on the basis of interviews with firms in the five economic impact categories described above. A total of 521 firms were contacted, representing a nearly 100% coverage of tenants and firms providing services at BWI and the 34 general aviation and commuter airports. Table 2 shows the number of interviews by type of firm.

Table 2
Summary of Interview Responses

IMPACT CATEGORY	NUMBER OF INTERVIEWS
CATERING	1
FREIGHT AIRLINES/AIR COURIERS	21
FREIGHT FORWARDERS	56
GENERAL AVIATION/FBO'S (BWI)	9
RETAIL CONCESSIONS	26
RENTAL CARS	7
GOVERNMENT AGENCIES	18
AIRLINES	29
TAXIS/VANS	4
SECURITY/SKYCAPS/CUSTODIAL	11
PARKING	3
MISCELLANEOUS/HOTEL	10
GENERAL AVIATION/COMMUTER AIRPORTS	326
TOTALS	521

4. SUMMARY OF FINDINGS

The key economic impacts generated by BWI and the 34 general aviation and commuter airports are presented in Table 3.

Table 3
Economic Impacts of Aviation
Activity in the State of Maryland

	Jobs				Personal Income (\$1,000)				Revenue (\$1,000)	Taxes (\$1,000)	Purchases (\$1,000)
	Direct	Induced	Indirect	Total	Direct	Induced	Indirect	Total			
BWI on Site	10,999	4,075	5,429	20,503	\$335,547	\$338,533	\$188,218	\$862,298	\$2,741,075	\$152,912	\$353,970
BWI Visitors	52,561	13,211	18,483	84,255	\$795,916	\$802,999	\$446,684	\$2,045,599	\$2,950,087	\$628,371	\$736,373
BWI Total	63,560	17,286	23,912	104,758	\$1,131,463	\$1,141,532	\$634,902	\$2,907,897	\$5,691,162	\$781,283	\$1,090,343
Bay Bridge Airport	22	8	22	52	\$673	\$676	\$749	\$2,098	\$2,052	\$388	\$1,204
Bennett Airport	11	4	1	16	\$339	\$340	\$38	\$717	\$672	\$119	\$83
Cambridge/Dorchester	22	8	37	67	\$700	\$703	\$1,332	\$2,735	\$2,147	\$500	\$2,147
Capt. Walter Francis Duke	25	11	9	45	\$984	\$988	\$335	\$2,307	\$6,806	\$336	\$680
Carroll County	19	7	3	29	\$561	\$564	\$65	\$1,190	\$1,134	\$216	\$264
Cecil County Airport	10	4	4	18	\$300	\$302	\$131	\$733	\$488	\$134	\$210
Clearview Airport	2	1	4	7	\$70	\$70	\$115	\$255	\$265	\$52	\$328
College Park Airport	25	9	22	56	\$724	\$728	\$755	\$2,207	\$256	\$418	\$1,310
Crisfield-Somerset Airport	2	1	5	8	\$84	\$84	\$187	\$355	\$132	\$60	\$300
Davis Airport	2	1		3	\$53	\$53		\$106	\$199	\$22	
Easton Airport	127	49	179	355	\$4,168	\$4,189	\$6,154	\$14,511	\$16,914	\$2,648	\$10,648
Essex Skypark	8	5	3	16	\$499	\$502	\$91	\$1,092	\$306	\$119	\$202
Fallston Airport	3	1	0	5	\$135	\$136	\$8	\$279	\$150	\$34	\$18
Frederick Municipal Airport	497	247	488	1,232	\$23,364	\$23,481	\$16,935	\$63,780	\$119,340	\$9,188	\$37,687
Freeway Airport	23	7	5	35	\$500	\$503	\$163	\$1,166	\$1,700	\$261	\$270
Garrett County Airport	2	1		3	\$70	\$70		\$140	\$265	\$22	
Greater Cumberland on Site	53	20	6	79	\$1,681	\$1,695	\$219	\$3,595	\$2,196	\$587	\$475
Greater Cumberland Visitor	15	3	5	23	\$224	\$226	\$124	\$574	\$796	\$175	\$205
Greater Cumberland Total	68	23		102	\$1,905	\$1,921	\$343	\$4,169	\$2,992	\$762	\$680
Hagerstown Regional on Site	374	138	90	602	\$11,308	\$11,409	\$3,463	\$26,180	\$40,311	\$4,487	\$5,500
Hagerstown Regional Visitor	143	36	50	229	\$2,192	\$2,211	\$1,215	\$5,618	\$7,778	\$1,715	\$2,003
Hagerstown Regional Total	517	174	140	831	\$13,500	\$13,620	\$4,678	\$31,798	\$48,089	\$6,202	\$7,503
Harford County Airport	8	3	1	12	\$200	\$201	\$32	\$433	\$550	\$89	\$70
Havre de Grace Seaplane Base	1	0		1	\$22	\$22		\$44	\$83	\$9	
Kentmorr Airpark	1	0	0	1	\$35	\$35		\$70	\$132	\$11	\$2
Lee Airport	10	4	0	14	\$312	\$314	\$385	\$1,011	\$1,000	\$103	\$0
Martin Airport	924	417	494	1,835	\$37,941	\$38,131	\$17,549	\$93,621	\$221,039	\$13,685	\$30,438
Maryland Airport	16	8	5	29	\$768	\$772	\$185	\$1,725	\$4,992	\$216	\$256
Mexico Farms Airport	1	1		2	\$44	\$44		\$88	\$166	\$11	
Montgomery County Airpark	52	21	87	160	\$1,764	\$1,772	\$3,115	\$6,651	\$10,169	\$1,193	\$5,071
Ocean City Municipal Airport	17	6	4	27	\$477	\$480	\$124	\$1,081	\$1,983	\$201	\$189
Potomac Airfield	30	12	12	54	\$1,082	\$1,087	\$405	\$2,574	\$1,624	\$403	\$715
Ridgely Airpark	4	1	0	6	\$100	\$101	\$4	\$205	\$112	\$41	\$20
Salisbury-Ocean City on Site	529	197	262	988	\$16,307	\$16,452	\$9,950	\$42,709	\$41,766	\$7,369	\$23,296
Salisbury-Ocean City Visitor	349	88	122	559	\$5,339	\$5,387	\$2,960	\$13,686	\$18,947	\$4,177	\$4,880
Salisbury-Ocean City Total	878	285	384	1,547	\$21,646	\$21,839	\$12,910	\$56,395	\$60,713	\$11,546	\$28,176
Suburban Airpark	2	1	1	4	\$60	\$60	\$35	\$155	\$265	\$30	\$57
Tipton Airport	42	19	42	103	\$1,724	\$1,733	\$1,670	\$5,127	\$13,345	\$768	\$2,414
Washington Executive/Hyde Field	33	14	42	89	\$1,235	\$1,241	\$1,399	\$3,875	\$3,413	\$664	\$3,062
TOTALS	66,964	18,640	25,917	111,521	1,247,502	1,258,295	704,794	\$3,210,590	\$6,214,655	\$831,735	\$1,224,347

CY 2002 data

The remainder of this report is organized as follows. Chapter II details the job impacts, and Chapter III describes the business revenue, employee earnings, and tax impacts. Chapter IV presents the impacts of the 4.9 million visitors to the Baltimore area. Chapter V discusses the impact of BWI on regional air cargo shippers. Chapter VI compares the changes in impacts at BWI and the GA airports since 2000. Chapter VII describes the economic impacts of the 34 general aviation and commuter airports.

II. EMPLOYMENT IMPACTS CREATED BY BWI ACTIVITY

In this chapter, the employment generated by BWI Airport activity in the year 2002 is described. The chapter is organized as follows:

- First, employment that is totally or partially dependent on the activities at BWI is estimated.
- Second, the subset of total employment that is judged to be totally dependent on airport activity is analyzed in the following ways:
 - Jobs are estimated in terms of the four economic impact sectors and for job classifications within these categories. Visitor industry sector impacts are addressed separately in Chapter IV.
 - Jobs are estimated by type of airport activity, i.e. passenger, air cargo activity and construction/consulting activity.
 - Job impacts are allocated to counties and cities within the Baltimore region based on the residence of those directly dependent upon airport activity.
- Finally, induced and indirect jobs are estimated.

1. TOTAL JOB IMPACTS

In the year 2002, 104,758 Baltimore and Washington area residents held jobs that were in some way related to activity at BWI. Of these 104,758 jobs:

- 10,999 direct jobs are dependent upon activity at BWI. These jobs would be discontinued immediately if airport activity ceased. Also, these jobs would be impacted as a result of changes in number of flights and passenger levels.
- 4,075 induced jobs are created in the region due to the purchases of goods and services within the region by those 10,999 directly dependent upon activity at BWI.
- 5,429 indirect jobs are generated in the local economy due to the \$354 million of local purchases for office supplies, maintenance and repair work, communications and utilities, professional services, fuel, etc., by those firms completely dependent upon the airport.

- 84,255 visitor industry direct, induced and indirect jobs are created in the region as a result of visitors arriving via BWI. Of these jobs, 52,561 jobs are created with hotels, restaurants, retail outlets, entertainment and recreational establishments due to direct expenditures by visitors in the Baltimore area who have arrived via the Airport. The 13,211 induced jobs due to visitors' expenditures are supported by regional purchases of the 52,561 individuals holding jobs directly created due to expenditures by visitors using the Airport. The local visitor industry firms made \$736.4 million of local purchases for goods and services to support the visitor generated operations generating an additional 18,483 indirect jobs in the area economy. Chapter IV presents a more detailed discussion of the job impacts created due to visitor expenditures.

2. DIRECT JOB IMPACTS

As Exhibit 2 shows, 77.4 percent of the 10,999 jobs directly generated by airport activity in 2002 are concentrated in the airline/airport service category, followed by 12 percent with the ground transportation sector, 5.4 percent with construction contractors involved in the capital expansion projects at BWI, and 5.2 percent with the air freight sector.

Exhibit 2
Direct Job Impacts by Sector
BWI

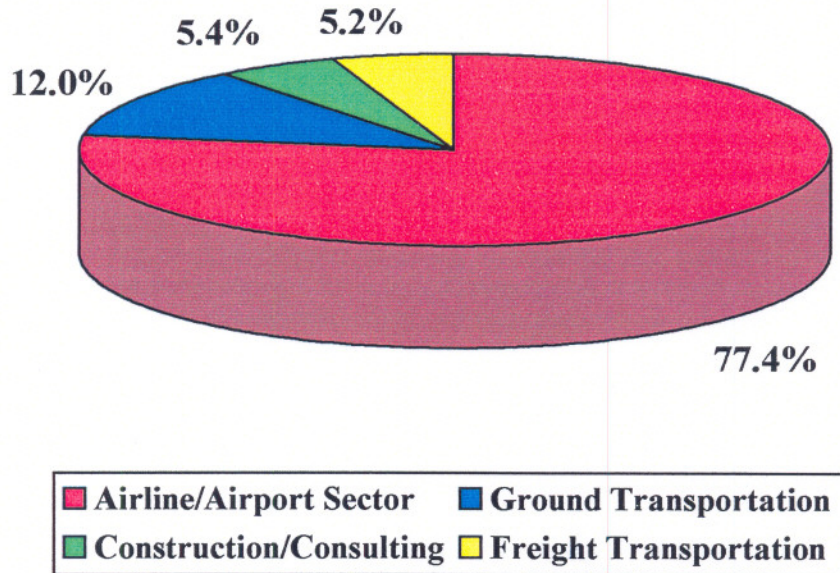


Table 4 shows the distribution of employment within each major sector. More than 4,100 jobs with passenger airlines are concentrated in the first category. The jobs include flight crews, administration, ticket agents, ramp employees, and maintenance workers.

Table 4
Direct Job Impacts by Category

JOB CATEGORY	DIRECT JOBS
AIRLINE/AIRPORT SERVICES SECTOR	
Passenger Airlines*	4,164
Catering	180
Government Agencies	1,033
Airport Administration	475
Security/Skycaps	206
Aviation Services/FBO's	618
Retail Concessions	1,048
Custodial	437
Parking	191
Miscellaneous	160
SUBTOTAL	8,512
FREIGHT TRANSPORTATION	576
GROUND TRANSPORTATION	
Taxi/Limos/Vans	753
Rental Cars	562
SUBTOTAL	1,315
CONSTRUCTION/CONSULTING	596
TOTAL	10,999

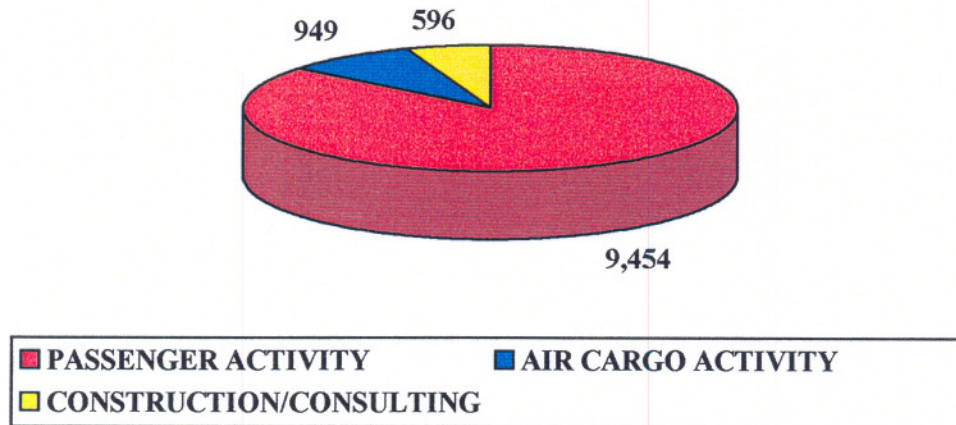
2.1 Direct Job Impacts by Type of Activity

The direct jobs are next allocated to types of activity at BWI:

- Passenger Activity
- Air Cargo
- Construction.

Exhibit 3 shows the distribution of direct jobs by type of activity.

Exhibit 3
Distribution of Direct Jobs by Type of Activity



2.1.1 Direct Jobs Dependent upon Passenger Activity

A total of 9,454 direct jobs were generated by commercial airline passenger activity. Of these 9,454 direct jobs, 4,164 jobs are with the airlines. These airline jobs include flight crew and pilots living in the Baltimore area who are based out of BWI, ticket agents, dispatchers, equipment mechanics and technicians, custodial workers who are employees of the airlines (and not contractors to the airlines), airline system maintenance facility employees, and airline management and clerical jobs. It is clear from this diverse set of jobs with airlines that certain jobs are dependent upon the number of flights at BWI; others are dependent upon the number of passengers at the airport, while still other jobs, such as pilots and crew based out of Baltimore are dependent upon airline corporate decisions and airline system activity throughout the U.S.

As a result of this diversity in the types of jobs with airlines and their dependency upon the airport activity, it is clear that changes in the level of airport activity will not have a proportionate impact on the level of total direct airline jobs. For example, the airline flight attendants living in the Baltimore area, and based out of BWI, as well as system maintenance facilities, are not necessarily dependent upon the level of flights in and out of BWI, but instead on the growth in the specific airline system of which they are employees. In contrast, certain jobs are directly dependent on the number of flights at BWI, such as the equipment service technicians and dispatchers.

Based on analysis of employee job classifications for the airlines servicing BWI, it was estimated that 47 percent of the direct airline employment would be totally dependent upon the actual

Based on analysis of employee job classifications for the airlines servicing BWI, it was estimated that 47 percent of the direct airline employment would be totally dependent upon the actual number of flights and passengers at BWI. The remaining 53 percent of airline employees would include flight crews based in Baltimore (but dependent upon airline system-wide performance) and airline management stationed at BWI.

In 2002, 384,181 passengers boarded international flights at BWI. It is estimated that international passenger activity at BWI supported 554 direct jobs.

2.1.2 Air Cargo Transportation Job Impacts

In 2002, 526.4 million pounds of air freight/express freight and 27.8 million pounds of mail were loaded and unloaded upon commercial air carriers and dedicated air cargo carriers at BWI. Of the 10,999 jobs directly generated by airport activity, 949 are directly generated as a result of total air cargo activity.

2.1.3 Construction/Consulting Job Impacts

In the year 2002, \$77.2 million was spent by BWI and the State of Maryland for construction activities, consulting and engineering services. These expenditures generated 596 direct jobs.

3. GEOGRAPHIC DISTRIBUTION OF DIRECT JOBS

In order to estimate the local economic impact created by airport activity, data on residency of employees was collected from the interviews with airport tenants, airport employee records, and interviews with the leading airlines serving BWI. The 10,999 direct jobs were then allocated based on city and county of residence. Table 5 shows the distribution of job impacts by Baltimore City and other counties in the state.

Table 5
Distribution of Job Impacts by
City and County of Residence

PLACE OF RESIDENCE	Percent	Direct Jobs
Baltimore City	27.5%	3,019
Anne Arundel County	24.2%	2,658
Baltimore County	15.5%	1,708
Howard County	6.1%	669
Harford County	2.3%	256
Other Maryland	7.1%	775
Other U.S.	17.4%	1,913
TOTAL	100.0%	10,999

4. INDUCED JOB IMPACT

A portion of the income received by those 10,999 directly employed due to airport activity is saved; another portion is used to pay federal, state and local taxes, while another portion is used to purchase goods and services from firms located in the Baltimore area, as well as out-of-region firms. The purchase of goods and services from Baltimore area firms creates induced jobs for area residents in the firms supplying the goods and services. Furthermore, those individuals supplying the goods and services also receive income from their employers and use a portion of it for additional purchases from firms located in the area. This "trickle-down" effect of an initial income expenditure results in a multiplier effect throughout the Baltimore regional economy known as the personal income multiplier. As a result of this re-spending, 4,075 additional jobs in other sectors of the regional economy are created. These jobs are with state and local government agencies (excluding those state and local government jobs included as direct impacts i.e., airport administration), financial/business and educational services, retail, housing/construction, transportation services (including service stations, auto parts suppliers, automobile dealers, body shops, etc.), entertainment/recreational services, apparel and health care services.

5. INDIRECT JOB IMPACTS

In addition to these induced jobs created due to purchases by the 10,999 individuals directly employed due to activity at BWI, other jobs in the Baltimore regional economy will be created indirectly due to the purchase of goods and services by the firms involved in airport activity.

For example, airlines purchase such items as fuel, catering services, parts and office supplies from local firms, thereby creating jobs in these supplying industries. Similarly, the airport itself purchases such services as contract construction, utilities, and maintenance services from local suppliers, also creating jobs in the local economy. For the most part, the jobs resulting from such purchases are included in the direct job impacts. For example, the 180 jobs with caterers, the 618 jobs with suppliers of aircraft services, (including fixed based operators, fuel handlers, and parts suppliers), and the 596 jobs with contract construction and consulting firms are all included as direct job impacts. In some studies, impacts in these supplying industries are included as indirect jobs and measured through the use of a regional input/output model. For the purposes of this study, a more detailed assessment of jobs in the supplying industries was more appropriate since many are located on the airport facility and these impacts are considered as direct job impacts.

In addition to these purchases, another \$354 million of local purchases were made by the firms dependent upon the airport. These local purchases include purchases for goods, maintenance and repair services, utilities and communications, transportation, insurance and fueling. The \$354 million of local purchases supported 5,429 indirect jobs.

III. REVENUE, INCOME AND TAX IMPACTS CREATED BY BWI AIRPORT ACTIVITY

The movement of passengers and freight via BWI generates revenue for firms in each of the five categories of airport-related activity. For example, in the airline/airport service category, revenue is received by catering firms providing services to the airlines, and by airport tenants who sell retail merchandise to passengers in the airport. In the freight transportation category, airlines receive revenue from moving the air cargo to and from the airport and freight forwarders receive revenue from arranging air transportation for the cargo. Similarly, the rental car agencies and the firms providing ground transportation receive revenue from transporting passengers to and from the airport, while contract construction and consulting firms receive revenue from the airport and airlines that have contracted these services. In the hotel/restaurant/visitors service category, local service and retail firms receive revenue from passengers staying overnight in the Baltimore area.

Revenue generated by airport activity is dispersed throughout the economy in several ways. For example, gross revenue is used to pay employee salaries and the whole range of taxes, it is distributed to stockholders, and it is used for purchases of goods and services (as described in the discussion of indirect job impacts in the last chapter). Only part of this revenue can be traced geographically with any degree of accuracy, the portion of the revenue paid out in salaries and state and local taxes. These impacts are addressed in separate sections of this chapter.

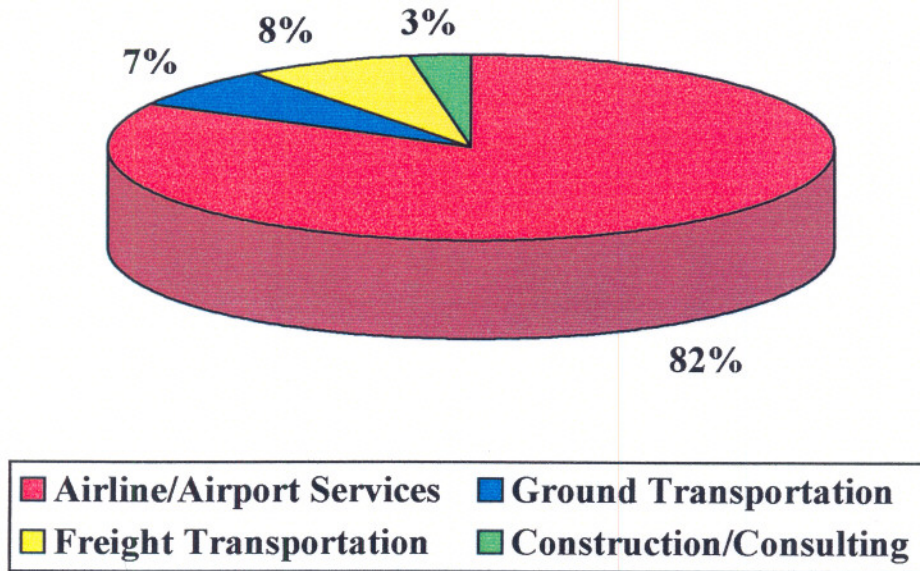
1. REVENUE IMPACT

It is useful to estimate the revenue received by each category of firms involved with airport activity because the distribution is quite different from that of employment. However, only a portion of the revenue can be definitely traced to uses within the Baltimore regional economy. The portion of revenue paid in salaries and re-spent within the Baltimore regional economy or paid in taxes by individuals, and state and local taxes paid by firms, represents an impact that can be traced as remaining in the regional economy.

1.1 Revenue Impact by Sector

In the year 2002, passenger, air cargo and airport construction activity generated \$2.7 billion of business revenue to firms providing services at the airport. Exhibit 4 indicates the distribution, by economic impact sector, of the \$2.7 billion of revenue generated by airport activity at BWI.

Exhibit 4
Distribution of Revenue
by Sector



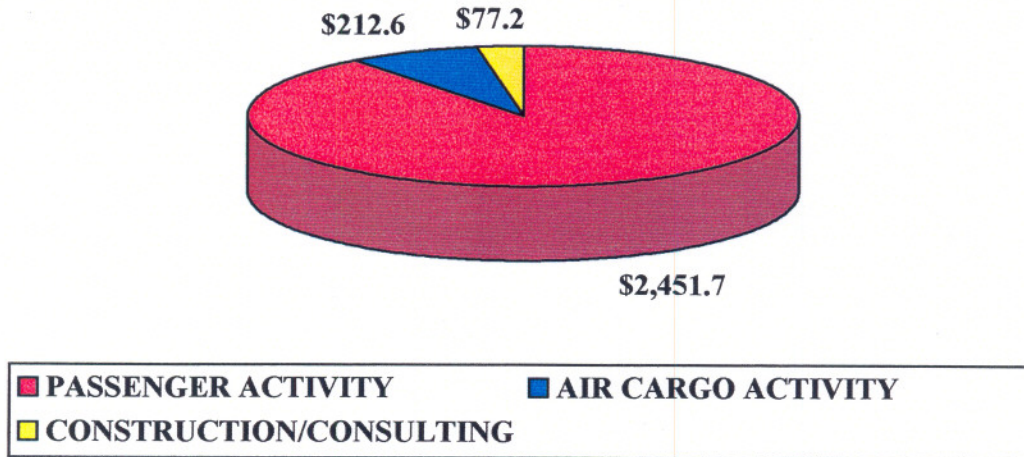
As with the employment impact, the majority of revenue generated by airport activity is concentrated in the airline/airport service category, followed by eight percent with the freight transportation sector.

1.2 Revenue Impact by Type of Activity

The \$2.7 billion revenue impact is allocated by type of airport activity in Exhibit 5:

- Passenger Activity
- Air Cargo Activity
- Construction and Consulting Activity.

Exhibit 5
Distribution of the \$2.7 Billion Revenue Impact
by Airport Activity
(Millions \$)



1.2.1 Revenue Impact Generated by Passenger Activity

Passenger activity at BWI generated nearly \$2.5 billion of revenue to businesses providing services to passengers on commercial airlines. The majority of this revenue impact was received by the airlines from passengers enplaning at Baltimore. This is based on estimated revenue per enplaning passenger provided to Martin Associates during the airline interviews.

1.2.2 Revenue Impacts Generated by Air Cargo Activity

The 526.4 million pounds of air freight and the 27.8 million pounds of air mail handled at BWI in 2002 generated \$212.6 million of revenue to the airlines carrying the cargo, the trucking companies, couriers, and freight forwarders. The revenue impact for the air cargo is based on estimated revenue per pound of enplaned air freight and air mail. The average revenue per pound estimates of air freight and mail are based on interviews with couriers as well as commercial airlines carrying air freight.

1.2.3 Revenue Impacts Generated By Construction and Consulting Activity

In the year 2002, \$77.2 million was spent on airport construction/expansion activities and consulting/engineering services.

2. PERSONAL INCOME IMPACTS

An estimated total of \$335.6 million was paid in wages and salaries to the 10,999 direct employees. This income impact is estimated based on the average wages and salaries for each job category multiplied by the corresponding job impact in that category. The spending of this personal income within the Baltimore area creates the additional employment estimated as induced jobs in Chapter II, which results in an additional \$338.5 million of personal income and purchases.

Responding of income within a region is measured by a regional income multiplier. The size of the multiplier varies by region depending on the proportion of regional goods and services purchased by individuals. The higher this percentage, the lower the income leakage is out of the region. Based on data provided by the Bureau of Economic Analysis, for every one dollar earned by individuals in the Baltimore area, another \$1.01 is spent in the region. Hence, the personal income multiplier for the Baltimore regional economy is 2.01.

It is to be emphasized that the re-spending effect measures the total responding impact in the Baltimore region. The induced jobs, which are generated by this responding of the direct income, only include jobs generated at the retail and wholesale level due to consumer purchases, since it is assumed that these jobs will most likely occur in the Baltimore region. In addition to these induced retail and wholesale jobs, there are also additional induced and indirect jobs created to support purchases by those induced jobs in the wholesale and retail sectors, i.e., a second round of induced and indirect jobs. These second level induced and indirect jobs are not estimated, since it is not possible to identify with any degree of defensibility the geographic location where these second round induced and indirect jobs are created. Because the total number of induced and indirect jobs (second, third and fourth levels, etc.) generated by airport activity is not estimated, it is not possible to divide the induced income (\$338.5 million) by the estimated induced jobs (4,075) to estimate the salary and wage income associated with the estimated induced jobs. To do so would result in a gross overestimation of the personal income associated with the induced jobs.

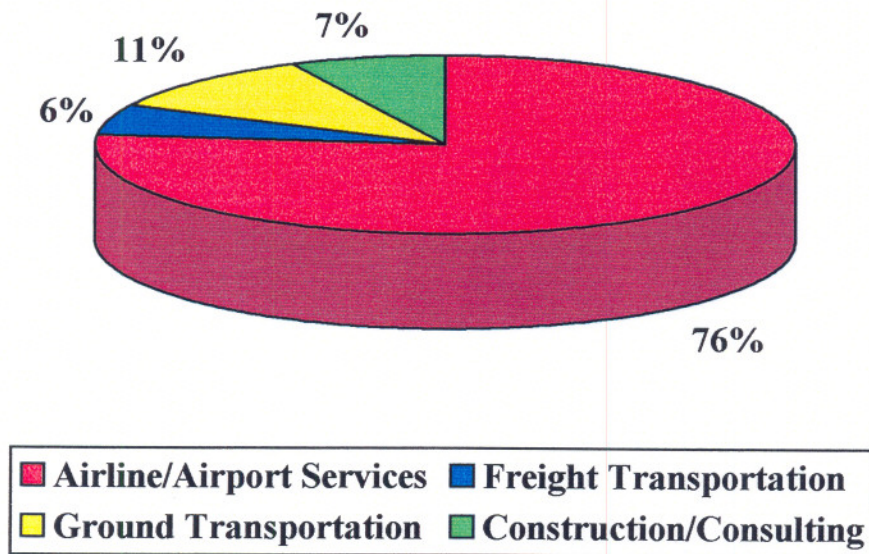
In addition to the direct and induced income and consumption impacts, the 5,429 indirect job holders received \$188.2 million in indirect personal wages and salaries.

The total direct, induced and indirect personal income and consumption impact is estimated at \$862.3 million.

2.1 Income Impact by Sector

The distribution of the \$335.6 million of personal income earned directly is distributed among the airport sectors as illustrated in Exhibit 6.

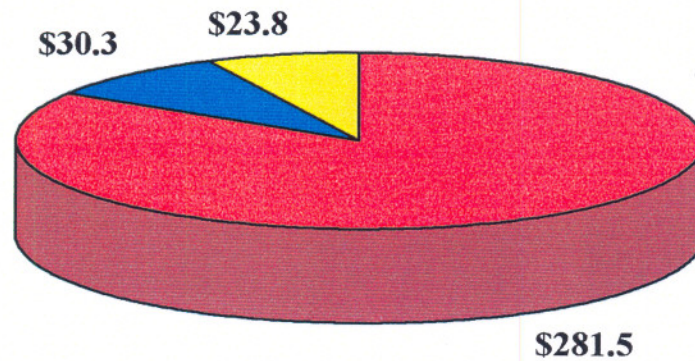
Exhibit 6
Distribution of Personal Income by Sector



2.2 Distribution of the Income Impact by Type of Activity

The distribution of the \$335.6 million personal income impact by type of activity is presented in Exhibit 7.

Exhibit 7
Distribution of the Direct Personal Income Impact
by Type of Airport Activity
(Millions \$)



2.2.1 Income Impact of Passenger Activity

Passenger activity generated 9,454 direct jobs. These direct employees in turn received \$281.5 million of personal income.

2.2.2 Income Impact Created by Air Cargo Activity

In 2002, air cargo activity at BWI created 949 direct jobs. These directly employed individuals in turn received about \$30.3 million in annual salaries and wages.

2.2.3 Income Impact Created by Construction Activity

The 596 direct jobs generated by construction and consulting activity at the airport received \$23.8 million of wages and salaries.

3. LOCAL PURCHASES

A total of \$354 million of local purchases were made by airlines and tenants of the airport. These purchases supported the 5,429 indirect jobs created by airport activity.

4. TAX IMPACTS

Airport activity in 2002 generated government revenue through an assortment of tax payments by airport businesses and employees. The tax impacts are estimated at the state and local government levels. Federal aviation-specific taxes are estimated for domestic passengers boarding flights at BWI, for international passengers using the airport and for air cargo loaded on planes. The Federal aviation-specific taxes on cargo, departing international passengers and domestic passengers are paid to the Federal Aviation Trust Fund, which is in turn used to finance airport development throughout the United States.

To estimate the state and local tax impact, state and local individual tax indices were developed from data collected by Martin Associates. Total tax revenues collected in fiscal year 2002 were identified for each state, county and municipal tax levied. The ratios of individual taxes to state employment were then estimated and used as an index in estimating the taxes generated by airport activity. Tax revenue data by type of tax was collected from the State of Maryland, Comptroller of the Treasury, Bureau of Revenue Estimates. State employment was provided by the State of Maryland, Department of Labor, Licensing and Regulation.

Using these state and local tax indices, it is estimated that activity at BWI generated \$152.9 million of state and local tax revenues. Table 6 shows the breakdown of the state and local tax impacts.

Table 6
State and Local Tax Impacts
(Million \$)

TAX TYPE	MILLIONS
STATE	\$82.1
COUNTY	\$66.7
MUNICIPAL	\$4.2
TOTALS	\$152.9

Federal aviation-specific taxes were estimated based on the appropriate tax formulas. The domestic passenger tax is based on an ad valorem tax levied on enplaned domestic passenger revenue. The international departure tax is based on a tax per enplaning international passenger, while the INS/Customs tax is based on a tax levied on deplaning international passengers. The federal air cargo tax is based on an ad valorem tax levy on the value of enplaned air cargo. The average freight value

of air cargo was provided to Martin Associates by air cargo carriers. As a result of the airport activity, \$208.5 million in tax revenues were paid to the Federal Government. Table 7 provides the detailed breakdown of the Federal aviation-specific taxes.

Table 7
Federal Aviation-Specific Tax Impacts
(Million \$)

AVIATION TAXES	MILLIONS \$
DOMESTIC PASSENGER	\$177.2
AIR CARGO	\$12.6
INTERNATIONAL DEPARTURE TAX	\$5.1
INS TAX	\$13.6
TOTAL	\$208.5

IV. VISITOR INDUSTRY IMPACTS CREATED BY BWI **PASSENGER ACTIVITY**

The impact of visitors on the local and regional economy is measured in terms of jobs, income, revenue and taxes created in the hotels, retail establishments, entertainment activities, and transportation service firms.

Individuals visit the Baltimore area for a variety of reasons, including business, pleasure, and for participation in conventions. Furthermore, both domestic and international visitors use the airport. These visitors purchase hotel rooms, pay for meals and entertainment, and make retail purchases while in the Baltimore area. These purchases of goods and services stimulate the local economy, in turn generating jobs with hotels, restaurants, retail outlets, and local entertainment establishments. Those individuals employed in the Baltimore visitor industry due to visitors' purchases receive income. This income is re-spent in the local economy generating induced jobs in the regional economy.

The magnitude of the economic impact generated by visitors using BWI varies directly with the volume of out-of-town visitors and the length of time the visitors stay in the Baltimore area. Also, the impacts depend upon the amount of money spent by visitors on a daily basis, as well as the types of purchases made. The volume of air visitors to the area depends upon the number of origin and destination passengers compared to connecting passengers, as well as the number of out-of town airport users versus the number of local resident users of the airport. The length of time visitors spend in Baltimore, as well as how they spend their money, further depends upon the purpose of the trip to Baltimore, as well as whether the visitor is a domestic air traveler or an international visitor. For example, domestic business travelers tend to spend more per day on hotels than a visitor on a pleasure trip, but the pleasure traveler may spend more on retail and entertainment than the business traveler, and stay in the Baltimore area for a longer period of time.

To estimate the economic impact of visitors arriving via BWI, Martin Associates conducted a 500 passenger in-terminal intercept survey of enplaning passengers. The passenger survey sample was selected to parallel the distribution of passengers by the key air routings accounting for 75 percent of the passenger traffic at BWI. The survey results were used to develop passenger characteristics, including trip purpose, spending patterns and length of time spent in the Baltimore area.

In the year 2002, about 9.6 million passengers boarded commercial aircraft at BWI. Of the 9.6 million enplaning passengers, about 60 percent of the passengers were not residents of the Baltimore area, of which 15.3 percent were connecting to other flights and spent no time in the Baltimore area as part of the trip. Therefore, of the 9.6 million enplaning passengers at BWI, about 4.9 million passengers were not residents of the Baltimore area and were not connecting to other flights at Baltimore. It is the travel and spending characteristics of these 4.9 million visitors that will contribute to the local and state economy through lodging, retail purchases, eating in restaurants, and local

transportation services. Table 8 shows the purpose of the trip of the 4.9 million non-resident visitors arriving via air.

Table 8
Estimated Non-Resident Visitors by
Purpose of Trip

TRIP PURPOSE	ENPLANEMENTS
DOMESTIC BUSINESS	3,089,335
DOMESTIC PLEASURE	1,568,890
INTERNATIONAL BUSINESS	115,254
INTERNATIONAL PLEASURE	76,836
TOTAL VISITORS	4,850,315

Table 9 shows the average length of stay and average daily expenditures by purpose of trip. As this table indicates, international pleasure travelers tend to spend more on a daily basis, followed by international business travelers. Domestic pleasure travelers spend the longest time in the Baltimore area, followed by international business travelers.

Table 9
Visitor Characteristics
Length of Stay and Daily Expenditures

TRIP PURPOSE	LENGTH OF STAY NIGHTS	EXPENDITURES PER DAY
DOMESTIC BUSINESS	2.5	\$206
DOMESTIC PLEASURE	5.6	\$135
INTERNATIONAL BUSINESS	3.7	\$212
INTERNATIONAL PLEASURE	2.5	\$389

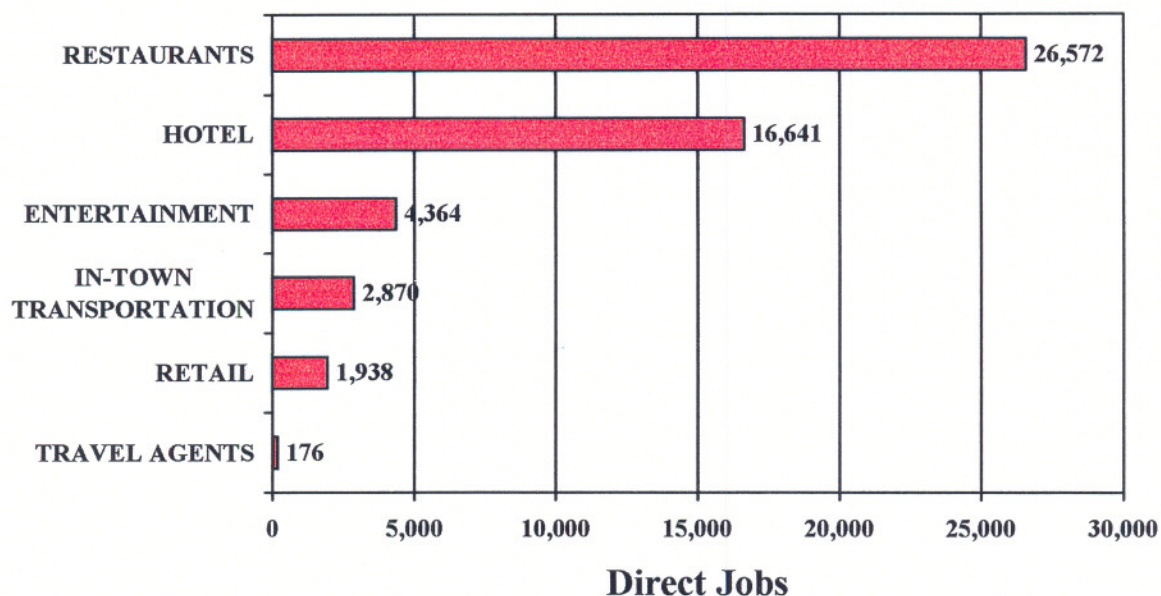
1. VISITOR INDUSTRY JOB IMPACT

Using the results of the passenger survey, the 4.9 million visitors arriving via BWI are estimated to have spent nearly \$3.0 billion in the Baltimore area for lodging, food, entertainment, and transportation. This spending supported 52,561 direct jobs in the Baltimore area. Exhibit 8 summarizes these direct visitor industry impacts.

Furthermore, the respending of the direct personal income due to visitors arriving via BWI supported 13,211 induced jobs within the Baltimore regional economy.

Finally, the local visitor industry firms made \$736.4 million of local purchases for goods and services to support the visitor generated operations. These local purchases for goods and services by the firms supported an additional 18,483 indirect jobs in the area economy.

Exhibit 8
Direct Job Impacts Due to Visitors
Arriving Via the Airport



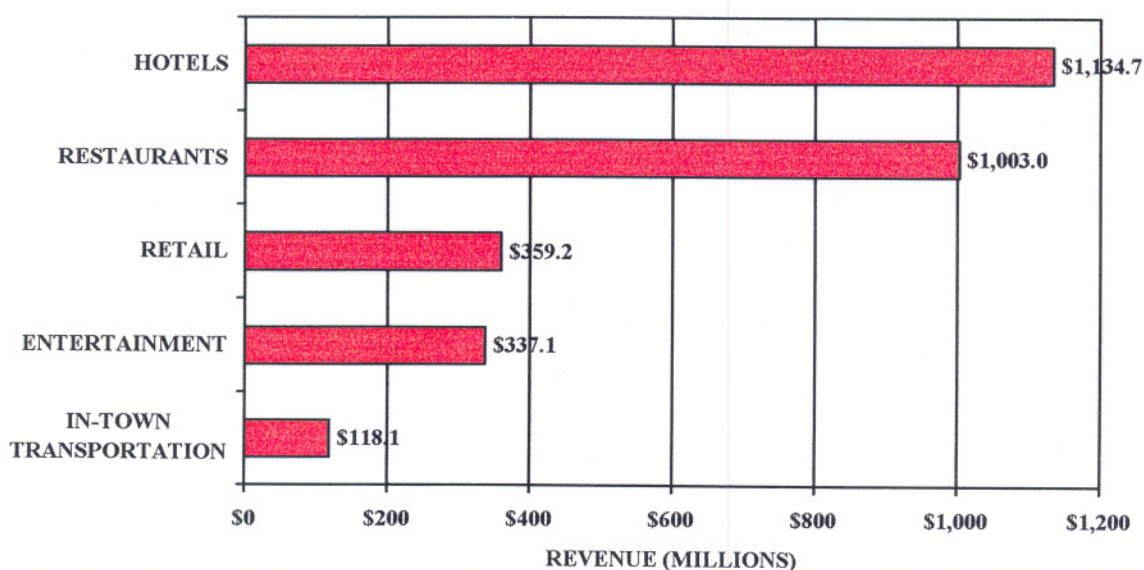
The majority of the impacts are generated in area restaurants, followed by jobs with area hotels and motels. Nearly 4,400 jobs are created with entertainment/recreational activities, nearly 2,900 jobs are created with in-town transportation services, nearly 2,000 jobs in retail outlets, and 176 jobs with local travel agents.¹

¹The local transportation jobs exclude the airport-generated jobs with rental cars, cabs and buses moving passengers to and from the airport.

2. BUSINESS REVENUE IMPACT

The purchases made by visitors to the Baltimore area in 2002 generated nearly \$3.0 billion of business revenue to hotels, restaurants, retail outlets, entertainment establishments and local transportation firms. The distribution of the business revenue by visitor sector industry is shown in Exhibit 9. As this exhibit demonstrates, local hotels received \$1.1 billion due to visitors using the airport, while restaurants received \$1.0 billion in sales as a result of visitors using BWI. Nearly \$360 million was spent on local retail purchases by visitors using BWI, while visitors spent \$337.1 million on local recreational and entertainment activities.

Exhibit 9
Distribution of Visitor Industry Purchases



3. PERSONAL INCOME AND TAX IMPACTS

The 52,561 individuals directly employed in the Baltimore visitor industry as the result of expenditures by the 4.9 million visitors to the area received \$796 million in wages and salaries. A portion of this personal income is also used for regional purchases of goods and services, creating induced jobs. Applying the personal income multiplier described in Chapter III, an additional re-spending and consumption income impact of \$803 million was generated locally.

The 18,483 indirect job holders received \$446.7 million of indirect wages and salaries. Therefore, the total personal income and consumption impact generated by visitors arriving via the airport is nearly \$2.1 billion.

Finally, as a result of the visitors arriving via BWI, \$628.4 million of state and local taxes are created, including local hotel tax receipts.

V. RELATED JOBS AT BWI

In this chapter, jobs related to, but not dependent upon, BWI are estimated. These related jobs should be viewed only as an indicator of the importance of BWI to the local business community. It is to be emphasized that the level of defensibility of the related jobs is lower than for the direct and induced jobs, primarily due to the fact that a sample of users and the results of other published studies are used rather than a 100 percent survey of all current, past and potential users of the Airport. Such a 100 percent survey would require resources not in the scope of the current study. Furthermore, since related jobs are not based on a 100 percent survey of all users, Martin Associates does not recommend that related jobs be considered when using the airport impact model to evaluate planning decisions. With these caveats in place, the remainder of the chapter provides an overview of the airport related jobs.

Related jobs are with freight users of BWI. These shippers use BWI as well as other airports for air cargo shipments. Therefore, these shippers are not directly dependent upon BWI in the same sense as are the firms that supply direct services to the airlines and/or passengers. However, the use of BWI by these shippers is important in stimulating economic activity in the region.

To estimate related jobs, the results of a study of air freight shippers currently underway for the Maryland Department of Transportation, estimated that the average value of air shipments to be about \$40 per pound.² Multiplying this value per pound estimate by the 244.3 million pounds of air freight (both domestic and international) enplaned at BWI in the year 2002, it is estimated that the total value of air cargo shipped via the airport is about \$9.8 billion. Based on a survey of national air freight shippers by Martin Associates it is estimated that .00946 jobs are related to every \$1,000 of air freight value. Using the jobs to \$1,000 of air cargo value, it is estimated that about 92,500 jobs are related to air freight shipments via BWI.

In conclusion, it is to be emphasized that these jobs are related to, not dependent upon, BWI. The level of employment with these users is determined by the demand for the firms' products, not the use of BWI.

² MDOT analysis of air freight market in the State of Maryland, ongoing.

VI. COMPARISON WITH 2000 IMPACTS CREATED BY BWI

Martin Associates conducted the 2000 economic impact study for BWI using a similar methodology as in this current study. Therefore, direct comparisons can be made with the 2000 impact study. Between 2000 and the year 2002, total passenger activity at BWI fell from 19.7 million to 19.1 million passengers and air cargo handled at BWI grew from 540 million pounds to 554 million pounds. Several key factors are responsible for the decline of passenger activity at BWI since 2000. These are the events of 9/11, the economic conditions that occurred in 2001 and 2002, and the general state of the aviation industry.

The impact of these changes in air passengers and air cargo activity are documented in Table 10.

Table 10
Comparison of Airport Generated Economic Impacts

	2002 BWI Airport Generated	2000 BWI Airport Generated	Change
JOBS			
Direct Jobs	10,999	12,030	-1,031
Induced Jobs	4,075	6,369	-2,294
Indirect Jobs	<u>5,429</u>	<u>5,692</u>	<u>-263</u>
Total Jobs	20,503	24,091	-3,588
Personal Income (Millions \$)			
Direct	\$336	\$358	-\$22
Induced	\$339	\$303	\$36
Indirect	<u>\$188</u>	<u>\$138</u>	<u>\$50</u>
Total	\$862	\$799	\$63
Business Revenue (Millions \$)	\$2,741	\$3,781	-\$1,040
Local Purchases (Millions \$)	\$354	\$236	\$118
State and Local Taxes (Millions\$)	\$153	\$200	-\$47
Federal Aviation Taxes (Millions\$)	\$208	\$283	-\$74

Totals may not add due to rounding

With respect to airport generated impacts, direct jobs fell by 1,031 jobs. The largest loss in direct jobs was with airlines, 1,537 jobs, reflecting the decline in total passengers at the airport. Other key job losses were recorded with private security firms (291 jobs) as these jobs were replaced by TSA employees. Other losses occurred with construction and consulting jobs (365) as airport capital and consulting expenditures fell from \$106.6 million to \$77.2 million in 2002.

Job increases were recorded in the government sector, with retail concessions at the airport, and with the air freight sector. As a result of the TSA employment, government jobs grew by 601 jobs over the period. Retail concession jobs increased by 346 jobs. Jobs with the air freight sector (cargo airlines, couriers and freight forwarders grew by 91 jobs reflecting the growth in air cargo handled at BWI since 2000.

Induced jobs fell by 2,294 jobs, reflecting the decline in personal income as well as improvements in productivity in the supplying firms. Indirect jobs also fell by 263 jobs, despite a growth in local purchases. The decline in indirect jobs reflects the growth in productivity in supplying industries over time -- less jobs are required in the supplying firms to deliver a dollar value of service or product to the firms directly dependent upon airport activity.

Personal wage and salary income fell by \$22 million, while the induced income and consumption impact grew by \$36 million, reflecting a higher personal income multiplier as estimated by the Bureau of Economic Analysis for the Baltimore metropolitan area. Indirect income grew by \$50 million, despite the reduction in indirect jobs, which reflects the higher paying indirect business services jobs created in 2002 compared to the larger share of retail and wholesale indirect jobs in 2000.

Business revenue fell by more than \$1.0 billion, reflecting the loss in passenger traffic and a decline in overall revenue per passenger (by about \$65 per passenger) received by the airlines. State and local taxes also fell reflecting the loss of direct, indirect and induced jobs as well as direct income and business revenue.

Table 11 shows the growth in the visitor industry impacts.

Table 11
Change in BWI Visitor Industry Impacts
2000-2002

	2002 BWI Visitor Generated	2000 BWI Visitor Generated	Change
JOBS			
Direct Jobs	52,561	43,471	9,090
Induced Jobs	13,211	17,375	-4,164
Indirect Jobs	18,483	NA	NA
Totals	84,255	60,846	23,409
Personal Income (Millions \$)			
Direct	\$796	\$584	\$212
Induced	\$803	\$494	\$309
Indirect	\$447	NA	NA
Totals	\$2,046	\$1,077	\$968
Business Revenue (Millions \$)	\$2,950	\$2,762	\$188
State and Local Taxes (Millions \$)	\$628	\$506	\$123

Totals may not add due to rounding

Between 2000 and 2002, total number of passengers fell from 19.7 million to 19.1 million passengers. However, visitors arriving via BWI actually grew from 4.2 million to 4.9 million. This growth in actual visitors to the area via BWI despite the loss in total passengers reflects the growth in non-residents using the area as well as a decline in connecting passengers. In 2000, the passenger survey conducted by Martin Associates indicated that 51 percent of the passengers using BWI were not residents of the area. Based on a similar passenger survey conducted by Martin Associates for this current study, by 2002, 60 percent of the passengers were non-residents. Also, connecting passengers fell from 16.5 percent to 15.3 percent.

Reflecting the growth of visitors using BWI, direct visitor industry jobs grew by 9,090 jobs. The purchases (revenue) by visitors increased by \$188 million, and total personal income including the respending impact grew by \$521 million.

Induced jobs actually fell over the period, reflecting the improvements in productivity in the supplying industries. Indirect jobs were not estimated in the 2000 study and, hence, comparisons cannot be made with indirect jobs and indirect income estimated in the 2002 study.

Over this same period, the composition of the visitors using BWI also changed. In 2000, 42.2 percent of the domestic visitors were business travelers compared to 66.32 percent in the year 2002. In contrast, the share of international passengers that are business travelers fell from 64.3 percent in 2000 to 60 percent in the year 2002.

VII. ECONOMIC IMPACT OF THE 34 GENERAL AVIATION AND COMMUTER AIRPORTS

The State of Maryland's Aviation System consists of 34 public use general aviation and commuter airports that serve the immediate regions in which each airport is located. The activity at these airports ranges from ~~limited~~ general aviation activity to scheduled commuter service, such as at the Salisbury-Ocean City Airport and the Hagerstown Regional Airport. Corporate general aviation tenants use these airports to serve local industries, while flight schools provide pilot instruction.

Other users of these airports include private, recreational pilots with aircraft based at the individual airports as well as military operations at Martin State Airport.

The activity at these 34 airports generates jobs and personal income to those employed by the airport tenants as well as to local visitor industry firms serving commuter passengers using Hagerstown, Salisbury and Cumberland airports. Business revenue is received by the firms providing the services to the commercial airlines as well as to the general aviation aircraft, military aircraft and to the flight schools. These firms providing the service and the individuals employed by these firms also pay state, local and federal taxes.

In the year 2002, the 34 general aviation and commuter airports in the Maryland Aviation System created the economic impacts summarized in Table 12.

Table 12
Economic Impacts of General Aviation and Commuter Activity
in the State of Maryland

	General Aviation Commuter Airports
JOB	
Direct Jobs	3,404
Induced Jobs	1,354
Indirect Jobs	2,005
Total Jobs	6,763
Personal Income (\$1,000)	
Direct	\$116,039
Induced	\$116,763
Indirect	\$69,892
Total	\$302,694
Business Revenue (\$1,000)	\$523,493
Local Purchases (\$1,000)	\$134,004
State and Local Taxes (\$1,000)	\$50,452
Federal Aviation Taxes (\$1,000)	\$1,136

Totals may not add due to rounding

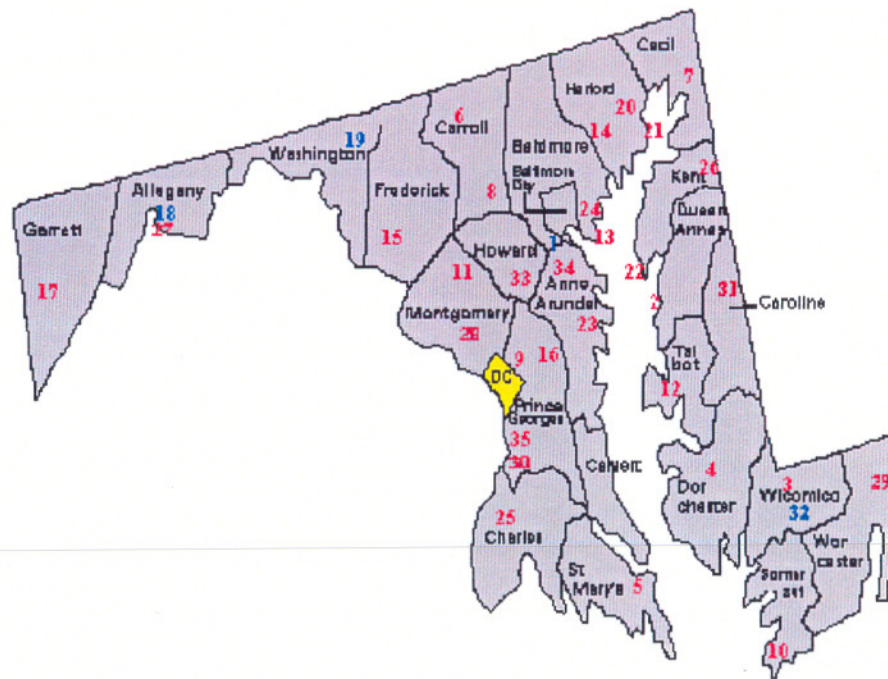
In the year 2002, the 34 general aviation and commuter airports in the State of Maryland created the following impacts:

- 6,763 total jobs, of which:
 - ◆ 3,404 were directly created by airport activity at these airports
 - ◆ 1,354 jobs were supported in local economic sectors due to the purchases for goods and services by those 3,404 directly employed workers
 - ◆ 2,005 indirect jobs in the local economy were supported by \$134 million of local purchases by the airport tenants
- \$302.7 million dollars of personal wage and salary income was created in the State of Maryland by the activity at these 34 airports. This income consists of:
 - ◆ \$116.1 of direct wages and salaries earned by the 3,404 direct job holders
 - ◆ \$116.8 induced income and local consumption expenditures
 - ◆ \$69.9 million of indirect income which was earned by the 2,005 indirect job holders
- \$523.5 million of business revenue created from landing fees and servicing of the general aviation and commuter aircraft
- \$50.5 million of state and local taxes and \$1.1 million of Federal aviation taxes.

In the remainder of this chapter the economic impacts of each of the 34 airports is described. Exhibit 10 shows the location of each of the airports within the State of Maryland.

Exhibit 10 Location of Maryland Airports

1. Baltimore/Washington Int'l
2. Bay Bridge Airport
3. Bennett Airport
4. Cambridge/Dorchester County Airport
5. Capt. Walter Francis Duke Airport
6. Carroll County Regional Airport
7. Cecil County Airport
8. Clearview Airport
9. College Park Airport
10. Crisfield-Somerset County Airport
11. Davis Airport
12. Easton Airport
13. Essex Skypark
14. Fallston Airport
15. Frederick Municipal Airport
16. Freeway Airport
17. Garrett County Airport
18. Greater Cumberland Regional Airport
19. Hagerstown Regional Airport
20. Harford County Airport
21. Havre de Grace Seaplane Base
22. Kentmorr Airpark
23. Lee Airport
24. Martin State Airport
25. Maryland Airport
26. Massey Aerodrome
27. Mexico Farms Airport
28. Montgomery County Airport
29. Ocean City Municipal Airport
30. Potomac Field
31. Ridgely Airpark
32. Salisbury-Ocean City: Wicomico Regional
33. Suburban Airpark
34. Tipton Airport
35. Washington Executive/Hyde Field



Bay Bridge Airport (W29)

The Bay Bridge Airport is a general aviation airport owned by Queen Anne's County and is open for public use. The airport is located on Kent Island approximately 1 mile W of Stevensville, MD. The airport has 1 asphalt runway available for use (2,910 x 60 ft.) and provides the following services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental
- T-hangars and paved tiedowns

Aviation activity at the Bay Bridge Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	64	Local GA	38%
Multi-engine	<u>10</u>	Transient GA	62%
Totals	74	Total Operations	46,000

In addition to the airport manager, Martin Associates interviewed 5 tenants of the Bay Bridge Airport, including Proflight, Lynn Aviation and Safe Flight, to assess the economic impacts that are generated by the airport on the local economy. Bay Bridge Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	52
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$2,098
➤ Revenue – (\$1,000)	\$2,052
➤ Taxes – (\$1,000)	\$388
➤ Local Purchases – (\$1,000)	\$1,204

Bennett Airport (1N5)

The Bennett Airport is a small, privately owned general aviation airport that is open for public use. The airport is located on the Delmarva Peninsula about 4 miles NW of Salisbury, MD. The airport has 2 turf runways available for use (2,300 x 95 ft. and 3,150 x 95 ft.) and provides the following services:

- Minor power plant service
- Agricultural operations (Aerial spraying)
- Skydiving
- T-hangars and turf tiedowns

Aviation activity at the Bennett Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	10	Local GA	100%
Multi-engine	<u>1</u>		
Totals	11	Total Operations	2,000

In addition to the airport manager, Martin Associates interviewed 2 tenants of the Bennett Airport, Parachutes are Fun and Tim's Aerial Services, to assess the economic impacts that are generated by the airport on the local economy. Bennett Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	16
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$717
➤ Revenue – (\$1,000)	\$672
➤ Taxes – (\$1,000)	\$119
➤ Local Purchases – (\$1,000)	\$83

Cambridge/Dorchester County Airport (CGE)

The Cambridge/Dorchester County Airport is a publicly owned general aviation airport that is open for public use. The airport is located on the Delmarva Peninsula approximately 3 miles SE of Cambridge, MD. The airport has 1 asphalt/grooved runway available for use (4,476 x 75 ft.) and provides the following services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental
- Agricultural operations (Aerial Spraying)
- Charter flights
- Aircraft refurbishing
- Aircraft maintenance
- T-hangars and paved tiedowns

Aviation activity at the Cambridge/Dorchester County Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	38	Local GA	54%
Multi-engine	3	Transient GA	45%
Helicopter	2	Military	1%
Totals	43	Total Operations	25,698

In addition to the airport manager, Martin Associates interviewed 6 tenants of the Cambridge/Dorchester County Airport, including Aircraft Refinishers, Cambridge Aero, Amp Air Corp., Ross Aviation and Wittsend Aviation, to assess the economic impacts that are generated by the airport on the local economy. Cambridge/Dorchester County Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		67
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$2,735	
➤ Revenue – (\$1,000)	\$2,147	
➤ Taxes – (\$1,000)		\$500
➤ Local Purchases – (\$1,000)	\$2,147	

Capt. Walter Francis Duke Regional at St. Mary's Airport (2W6)

The Capt. Walter Francis Duke Regional Airport is owned by St. Mary's County and is open for public use. The airport is located approximately 4 miles NE of Leonardtown, MD. The airport has 1 asphalt runway available for use (4,150 x 75 ft.) and provides the following services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental and sales
- Charter flights
- Air freight
- Air ambulance
- T-hangars and paved tiedowns

Aviation activity at the Capt. Walter Francis Duke Regional Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	86	Local GA	77%
Multi-engine	8	Transient GA	18%
Helicopter	3	Air Taxi	5%
Glider	1		
Ultralight	<u>2</u>		
Totals	100	Total Operations	52,618

In addition to the airport manager, Martin Associates interviewed 5 tenants of the Capt. Walter Francis Duke Regional Airport, including Airpark Sales and Service, Maryland State Police and Piedmont Flight Center, to assess the economic impacts that are generated by the airport on the local economy. Capt. Walter Francis Duke Regional Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		45
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$2,307	
➤ Revenue – (\$1,000)	\$6,806	
➤ Taxes – (\$1,000)		\$336
➤ Local Purchases – (\$1,000)	\$680	

Carroll County Regional/Jack B. Poage Field (DMW)

The Carroll County Regional Airport is owned by Carroll County and is open for public use. The airport is located approximately 3 miles N of Westminster, MD. The airport has 1 asphalt/grooved runway available for use (5,100 x 100 ft.) and provides the following services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental and sales
- Charter flights
- T-hangars and paved tie-downs

Aviation activity at the Carroll County Regional Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	105	Local GA	75%
Multi-engine	12	Transient GA	24%
Helicopter	2	Military	.5%
Jet	<u>2</u>	Air Taxi	.5%
Totals	121	Total Operations	153,690

In addition to the airport manager, Martin Associates interviewed 2 tenants of the Carroll County Regional Airport, including Westair II and Bullock's Airport Inn, to assess the economic impacts that are generated by the airport on the local economy. Carroll County Regional Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	29
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$1,190
➤ Revenue – (\$1,000)	\$1,134
➤ Taxes – (\$1,000)	\$216
➤ Local Purchases – (\$1,000)	\$264

Cecil County Airport (58M)

The Cecil County Airport is a small, privately owned general aviation airport that is open for public use. The airport is located in the northeastern corner of Maryland approximately 3 miles SW of Elkton, MD. The airport has 1 asphalt runway available for use (3,000 x 60 ft.) and provides the following services:

- Fuel Sales (100LL and MOGAS)
- Minor airframe service
- Minor power plant service
- Flight instruction
- T-hangars and turf tiedowns

Aviation activity at the Cecil County Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	39	Local GA	83%
Multi-engine	1	Transient GA	17%
Gliders	1		
Ultralights	<u>7</u>		
Totals	48	Total Operations	11,567

In addition to the airport manager, Martin Associates interviewed 3 tenants of the Cecil County Airport, including Raintree Corporation, to assess the economic impacts that are generated by the airport on the local economy. Cecil County Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	18
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$733
➤ Revenue – (\$1,000)	\$488
➤ Taxes – (\$1,000)	\$134
➤ Local Purchases – (\$1,000)	\$210

Clearview Airport (1W2)

The Clearview Airport is a privately owned general aviation airport that is open for public use. The airport is located in Carroll County and approximately 7 miles S of Westminster, MD. The airport has 1 asphalt runway available for use (1,840 x 30 ft.) and provides the following services:

- Fuel Sales (100LL)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental
- T-hangars and paved & turf tiedowns

Aviation activity at the Clearview Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	<u>32</u>	Local GA	10%
		Transient GA	90%
Totals	32	Total Operations	15,300

Martin Associates interviewed the airport manager of the Clearview Airport, to assess the economic impacts that are generated by the airport on the local economy. Clearview Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		7
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$255	
➤ Revenue – (\$1,000)	\$265	
➤ Taxes – (\$1,000)		\$52
➤ Local Purchases – (\$1,000)	\$328	

College Park Airport (CGS)

The College Park Airport is publicly owned by the Maryland National Capital Park and Planning Commission and is available for public use. The airport is located approximately 1 mile E of College Park, MD and the University of Maryland College Park campus. The airport has 1 asphalt runway available for use (2,610 x 60 ft.) and provides the following services:

- Fuel Sales (100LL)
- Major airframe service
- Major power plant service
- Avionics service
- Aircraft maintenance
- Restaurant
- Paved and turf tiedowns

Aviation activity at the College Park Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	34	Local GA	96%
Multi-engine	<u>1</u>	Military	4%
Totals	35	Total Operations	2,600

In addition to the airport manager, Martin Associates interviewed 3 tenants of the College Park Airport, including the 94th Aero Squadron Restaurant and College Park Aviation Museum, to assess the economic impacts that are generated by the airport on the local economy. College Park Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	56
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$2,207
➤ Revenue – (\$1,000)	\$256
➤ Taxes – (\$1,000)	\$418
➤ Local Purchases – (\$1,000)	\$1,310

Crisfield-Somerset County Airport (W41)

The Crisfield-Somerset County Airport is a small, publicly owned general aviation airport that is open for public use. The airport is located on the Delmarva Peninsula approximately 3 miles NE of Crisfield, MD. The airport has 1 asphalt runway available for use (2,490 x 75 ft.) and 1 turf runway (3,280 x 165 ft.). The following services are available at this airport:

- Fuel Sales (100LL)
- Major airframe service
- Major power plant service
- Flight instruction
- Paved and turf tiedowns

Aviation activity at the Crisfield-Somerset County Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	3	Local GA	13%
Ultralight	<u>3</u>	Transient GA	79%
		Military	5%
		Air Taxi	3%
Totals	6	Total Operations	3,040

Martin Associates interviewed the airport manager of the Crisfield-Somerset County Airport, to assess the economic impacts that are generated by the airport on the local economy. Crisfield-Somerset County Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		8
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$355	
➤ Revenue – (\$1,000)	\$132	
➤ Taxes – (\$1,000)		\$60
➤ Local Purchases – (\$1,000)	\$300	

Davis Airport (1W2)

The Davis Airport is a small, privately owned general aviation airport that is open for public use. The airport is located in Central Maryland approximately 3 miles N of Laytonsville, MD. The airport has 1 turf/asphalt runway available for use (2,005 x 110 ft.) and provides the following services:

- Minor airframe service
- Minor power plant service
- Flight instruction
- Paved and turf tiedowns

Aviation activity at the Davis Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	<u>29</u>	Local GA	99%
		Transient GA	1%
Totals	29	Total Operations	15,175

Martin Associates interviewed the airport manager of the Davis Airport, to assess the economic impacts that are generated by the airport on the local economy. Davis Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	3
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$106
➤ Revenue – (\$1,000)	\$199
➤ Taxes – (\$1,000)	\$22
➤ Local Purchases – (\$1,000)	

Easton Airport/Newnam Field (ESN)

The Easton Airport is a publicly owned general aviation airport that is open for public use. The airport is located on the Delmarva Peninsula approximately 2 miles N of Easton, MD. The airport has 2 asphalt runways available for use (4,003 x 100 ft. and 5,500 x 100 ft.) and provides the following services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental and sales
- Aerial photography
- Avionics service
- Charter flights
- Corporate flight departments
- Automobile rentals
- Airport restaurant
- T-hangars and paved tiedowns

Aviation activity at the Easton Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	110	Local GA	20%
Multi-engine	14	Transient GA	64%
Jet	19	Military	4%
Helicopter	<u>5</u>	Air Taxi	11%
Totals	148	Total Operations	90,000

In addition to the airport manager, Martin Associates interviewed 25 tenants of the Easton Airport, including Air Repair, East Coast Flight Service, Easton Aviation, Easton Jet Service, Maryland Air, Omni Jet Trading, Hangar Cafe and Talbot EMS, to assess the economic impacts that are generated by the airport on the local economy. Easton Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	355
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$14,511
➤ Revenue – (\$1,000)	\$16,914
➤ Taxes – (\$1,000)	\$2,648
➤ Local Purchases – (\$1,000)	\$10,648

Essex Skypark (W48)

The Essex Skypark is a small, publicly owned general aviation airport that is open for public use. The airport is located on the Back River approximately 3 miles SE of Baltimore, MD. The airport has 1 asphalt runway available for use (2,084 x 28 ft.) and 1 water runway (3,000 x 300 ft.), which is primarily used by ultralight seaplanes. The following services are available at this airport:

- Minor power plant service
- Flight instruction
- Aircraft rental
- Aerial surveying
- T-hangars and turf tiedowns

Aviation activity at the Essex Skypark represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	34	Local GA	98%
Ultralights	<u>2</u>	Transient GA	2%
Totals	36	Total Operations	3,050

In addition to the airport manager, Martin Associates interviewed 4 tenants of the Essex Skypark, including Jordon Aero Services, Phoenix Air Ads and Aerial Photography to assess the economic impacts that are generated by the airport on the local economy. Essex Skypark generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		16
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$1,092	
➤ Revenue – (\$1,000)	\$306	
➤ Taxes – (\$1,000)		\$119
➤ Local Purchases – (\$1,000)	\$202	

Fallston Airport (W42)

The Fallston Airport is a privately owned general aviation airport that is open for public use. The airport is located approximately 1 mile S of Fallston, MD. The airport has 1 asphalt runway available for use (2,200 x 50 ft.) and provides the following services:

- Fuel Sales (100LL)
- Minor airframe service
- Minor power plant service
- Flight instruction
- Aircraft rental
- T-hangars and turf tiedowns

Aviation activity at the Fallston Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	<u>38</u>	Local GA	73%
		Transient GA	26%
		Military	1%
Totals	38	Total Operations	8,189

Martin Associates interviewed the airport manager of the Fallston Airport, to assess the economic impacts that are generated by the airport on the local economy. Fallston Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		5
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$279	
➤ Revenue – (\$1,000)	\$150	
➤ Taxes – (\$1,000)		\$34
➤ Local Purchases – (\$1,000)		\$18

Frederick Municipal Airport (FDK)

The Frederick Municipal Airport is a publicly owned general aviation airport that is open for public use. The airport is located in Frederick County at the junction of I-70 and I-270. The airport has 2 asphalt runways available for use (5,220 x 100 ft. and 3,600 x 75 ft.) and provides the following services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental and sales
- Avionics service
- Charter flights
- Glider operations
- Banner towing
- T-hangars and paved tiedowns

Aviation activity at the Frederick Municipal Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	190	Local GA	78%
Multi-engine	14	Transient GA	20%
Jet	12	Air Taxi	2%
Helicopters	12	Military	.5%
Gliders	30		
Ultralights	4		
Totals	262	Total Operations	156,627

In addition to the airport manager, Martin Associates interviewed 27 tenants of the Frederick Municipal Airport, including Frederick Aviation, Frederick Flight Center, FCCC Aviation Maintenance Program, Maryland State Police, Southern Research Institute, AOPA and Avemco, to assess the economic impacts that are generated by the airport on the local economy. Frederick Municipal Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	1,232
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$63,780
➤ Revenue – (\$1,000)	\$119,340
➤ Taxes – (\$1,000)	\$9,188
➤ Local Purchases – (\$1,000)	\$37,687

Freeway Airport (W00)

The Freeway Airport is a privately owned general aviation airport that is open for public use. The airport is located 2 miles NW of Mitchellville, MD and approximately 15 miles E of downtown Washington, DC. The airport has 1 asphalt runway available for use (2,425 x 30 ft.) and provides the following services:

- Fuel Sales (100LL)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental
- Aircraft maintenance
- Paved and turf tiedowns

Aviation activity at the Freeway Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	88	Local GA	90%
Multi-engine	3	Transient GA	6%
Ultralights	<u>1</u>	Military	3%
		Air Taxi	1%
Totals	92	Total Operations	61,456

In addition to the airport manager, Martin Associates interviewed 1 tenant of the Freeway Airport, to assess the economic impacts that are generated by the airport on the local economy. Freeway Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		35
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$1,166	
➤ Revenue – (\$1,000)	\$1,700	
➤ Taxes – (\$1,000)		\$281
➤ Local Purchases – (\$1,000)	\$270	

Garrett County Airport (2G4)

The Garrett County Airport is publicly owned by Garrett County and is available for public use. The airport is located approximately 13 miles NE of Oakland, MD. The airport has 1 asphalt runway available for use (3,000 x 75 ft.) and provides the following services:

- Fuel Sales (Jet A, 100LL and 80oct)
- Flight instruction
- Aircraft rental
- Charter flights
- Banner towing
- T-hangars and paved tiedowns

Aviation activity at the Garrett County Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	12	Local GA	53%
Multi-engine	<u>2</u>	Transient GA	42%
		Military	3%
		Air Taxi	2%
Totals	14	Total Operations	17,800

In addition to the airport manager, Martin Associates interviewed 1 tenant of the Garrett County Airport, to assess the economic impacts that are generated by the airport on the local economy. Garrett County Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		3
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$140	
➤ Revenue – (\$1,000)	\$285	
➤ Taxes – (\$1,000)		\$22
➤ Local Purchases – (\$1,000)		

Greater Cumberland Regional Airport (CBE)

Although the Greater Cumberland Regional Airport is located 3 miles S of Cumberland, MD in West Virginia, the airport is part of the Maryland's aviation system and is owned by the Potomac Highlands Airport Authority. The airport offers commuter passenger service to Hagerstown, Baltimore/Washington International Airport with continuing service to Martha's Vineyard, MA and West Chester, NY flights representing approximately 175 enplaning passengers per month. Pan Am offers commuter passenger service at Greater Cumberland Regional Airport, however, the US Airways Express discontinued service in February 2001. The Greater Cumberland Regional Airport has 2 asphalt runways available for use, of which one is grooved, (5,048 x 150 ft. and 2,442 x 150 ft.) and provides the following services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Charter flights
- Commuter passenger service
- Air ambulance/Medivac
- Glider operations
- Banner towing
- Airport restaurant
- T-hangars and paved tiedowns

Aviation activity at the Greater Cumberland Regional Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	43	Local GA	51%
Multi-engine	5	Transient GA	11%
Jet	3	Military	1%
Helicopters	1	Commercial	37%
Gliders	<u>5</u>		
Totals	57	Total Operations	22,757

In addition to the airport manager, Martin Associates interviewed 19 tenants of the Greater Cumberland Regional Airport, including Pan Am, TSA, Maryland State Trooper, Cumberland Air and Cumberland Air Cafe, to assess the economic impacts that are generated by the airport on the local economy. Greater Cumberland Regional Airport generated the following impacts (on-site and visitor):

➤ Jobs (Direct, Induced & Indirect)	102
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$4,169

➤	Revenue – (\$1,000)	\$2,992	
➤	Taxes – (\$1,000)		\$762
➤	Local Purchases – (\$1,000)	\$680	

Hagerstown Regional Airport – Richard A. Henson Field (HGR)

The Hagerstown Regional Airport is located 4 miles N of Hagerstown, MD and offers daily commuter passenger service to Pittsburgh with 4 daily flights. Passenger activity represents approximately 1,800 enplaning passengers per month. The Hagerstown Regional Airport has 2 asphalt runways available for use, of which one is grooved, (5,461 x 150 ft. and 3,160 x 100 ft.) and provides the following services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental and sales
- Commuter air passenger service
- Avionics service
- Charter flights
- Air cargo
- Aircraft maintenance
- Automobile rentals
- Airport restaurant
- Corporate flight departments
- Tower
- T-hangars and paved tiedowns

Aviation activity at the Hagerstown Regional Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	159	Local GA	27%
Multi-engine	44	Transient GA	58%
Ultralights	3	Military	6%
Helicopters	1	Air Taxi	5%
		Commercial	3%
Totals	207	Total Operations	55,477

In addition to the airport manager, Martin Associates interviewed 40 tenants of the Hagerstown Regional Airport, including US Airways Express, Pan Am, TSA, Northrop Grumman, JRA Executive Air, Hagerstown Aircraft Services, Earthdata and Aviation Resources, to assess the economic impacts that are generated by the airport on the local economy. Hagerstown Regional Airport generated the following impacts (on-site and visitor):

- **Jobs** (Direct, Induced & Indirect) **831**
- **Personal Income** (Direct, Induced & Indirect) – (\$1,000) **\$31,798**

➤	Revenue – (\$1,000)	\$48,089	
➤	Taxes – (\$1,000)		\$6,202
➤	Local Purchases – (\$1,000)	\$7,503	

Harford County Airport (0W3)

The Harford County Airport is a privately owned general aviation airport that is open for public use. The airport is located approximately 3 miles E of Churchville, MD in Harford County. The airport offers 1 asphalt runway (2,140 x 40 ft.) and 1 turf runway (2,000 x 85 ft.). The following services are provided at this airport:

- Fuel Sales (100LL)
- Major airframe service
- Major power plant service
- Flight instruction
- T-hangars and paved tiedowns

Aviation activity at the Harford County Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	53	Local GA	80%
Gliders	6	Transient GA	20%
Ultralights	<u>1</u>	Military	.5%
Totals	60	Total Operations	35,529

In addition to the airport manager, Martin Associates interviewed 2 tenants of the Harford County Airport, including Harford Air and North Community Aircraft, to assess the economic impacts that are generated by the airport on the local economy. Harford County Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		12
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$433	
➤ Revenue – (\$1,000)	\$550	
➤ Taxes – (\$1,000)		\$89
➤ Local Purchases – (\$1,000)	\$70	

Havre de Grace Seaplane Base (M06)

The Havre de Grace Seaplane Base is a small, privately owned general aviation airport that is open for public use. The primary use of the airport is with ultralights. The airport is located approximately 1 mile E of Havre de Grace, MD. The airport has 2 water runways available for use (8,000 x 200 ft.) and provides the following services:

- Flight instruction
- Aircraft sales

Aviation activity at the Havre de Grace Seaplane Base represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	2	Local GA	94%
Ultralights	<u>2</u>	Transient GA	6%
Totals	4	Total Operations	1,280

Martin Associates interviewed the airport manager of the Havre de Grace Seaplane Base to assess the economic impacts that are generated by the airport on the local economy. Havre de Grace Seaplane Base generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		1
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$44	
➤ Revenue – (\$1,000)	\$83	
➤ Taxes – (\$1,000)		\$9
➤ Local Purchases – (\$1,000)		

Kentmorr Airpark (3W3)

The Kentmorr Airpark is a small, privately owned general aviation airport that is open for public use. The airpark was established as a residential airpark and is owned and operated by the local homeowners association. The airpark is located on Kent Island, approximately 5 miles SW of Stevensville, MD and provides convenient access to a marina, restaurant and golf course. The airpark has 1 turf runway available for use (2,400 x 75 ft.) and provides turf aircraft parking.

Aviation activity at the Kentmorr Airpark represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	<u>15</u>	Local GA	71%
		Transient GA	29%
Totals	15	Total Operations	3,500

Martin Associates interviewed the airpark manager of the Kentmorr Airpark, to assess the economic impacts that are generated by the airpark on the local economy. Kentmorr Airpark generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		1
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$70	
➤ Revenue – (\$1,000)	\$132	
➤ Taxes – (\$1,000)		\$11
➤ Local Purchases – (\$1,000)	\$2	

Lee Airport (ANP)

The Lee Airport is a family-run general aviation airport that is open for public use. The airport is located approximately 5 miles SW of Annapolis, MD. The airport has 1 asphalt runway available for use (2,505 x 48 ft.) and provides the following aviation related services:

- Fuel Sales (100LL)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental
- T-hangars and turf tiedowns

Aviation activity at the Lee Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	120	Local GA	67%
Multi-engine	30	Transient GA	29%
Helicopters	<u>3</u>	Military	5%
Totals	153	Total Operations	64,000

In addition to the airport manager, Martin Associates interviewed 6 tenants of the Lee Airport, including A&G Flight School, Civil Air Patrol and Chesapeake Aviation, to assess the economic impacts that are generated by the airport on the local economy. Lee Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		14
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$1,011	
➤ Revenue – (\$1,000)	\$1,000	
➤ Taxes – (\$1,000)		\$103
➤ Local Purchases – (\$1,000)	\$0.1	

Martin State Airport (MTN)

The Martin State Airport is a general aviation airport owned and operated by the Maryland Aviation Administration and is open for public use. The airport is located approximately 9 miles E of Baltimore, MD. The airport has 1 concrete runway available for use (6,996 x 180 ft.) and 1 helipad (65 x 65 ft.). The following aviation-related services are provided at Martin State Airport:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental and sales
- Air ambulance
- Avionics service
- Aviation museum
- Control tower
- Corporate flight departments
- Community and T-hangars
- Paved and turf tiedowns

Aviation activity at the Martin State Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	213	Local GA	38%
Multi-engine	23	Transient GA	55%
Jet	21	Military	7%
Helicopters	21		
Military	<u>38</u>		
Totals	316	Total Operations	126,838

Martin Associates interviewed 42 tenants of the Martin State Airport, including the Maryland Air National Guard, Northrup Grumman, Skytech, Lockheed Martin, Maryland State Police, State Medivac and the Baltimore City and Baltimore County Police Departments, to assess the economic impacts that are generated by the airport on the local economy. Martin State Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	1,835
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$93,621
➤ Revenue – (\$1,000)	\$221,039
➤ Taxes – (\$1,000)	\$13,685
➤ Local Purchases – (\$1,000)	\$30,438

Maryland Airport (2W5)

The Maryland Airport is a small, privately owned general aviation airport that is open for public use. The airport is located approximately 4 miles E of Indian Head, MD. The airport has 1 asphalt runway (3,000 x 50 ft.) and 1 turf runway (1,860 x 100 ft.) and provides the following aviation related services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft sales
- Avionics services
- Charter flights
- Corporate flight departments
- T-hangars and paved tiedowns

Aviation activity at the Maryland Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	72	Local GA	55%
Multi-engine	7	Transient GA	36%
Jet	<u>1</u>	Military	7%
		Air Taxi	1%
Totals	80	Total Operations	27,400

In addition to the airport manager, Martin Associates interviewed 10 tenants of the Maryland Airport, including Atlantic Cycles, Gustave Inc., Professional Flight Services and Washington Hospital Medstar, to assess the economic impacts that are generated by the airport on the local economy. Maryland Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	29
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$1,725
➤ Revenue – (\$1,000)	\$4,992
➤ Taxes – (\$1,000)	\$216
➤ Local Purchases – (\$1,000)	\$256

Massey Aerodrome (MD1)

The Massey Aerodrome is a small, privately owned general aviation airport/restoration museum that is open for public use. The airport is located in Western Maryland approximately 2 miles E of Massey, MD. The airport has 1 turf runway available for use (3,000 x 100 ft.) but does not provide any services. The airport is operated by volunteers, and hence does not have a quantifiable

economic impact.

Aviation activity at the Massey Aerodrome represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	11		
Multi-engine	<u>2</u>		
Totals	13	Total Operations	3,600

Mexico Farms Airport (1W3)

The Mexico Farms Airport is a small, privately owned general aviation airport that is open for public use. The airport is located in Western Maryland approximately 3 miles S of Cumberland, MD. The airport has 2 turf runways available for use (2,120 x 190 ft. and 2,100 x 195 ft.) but does not provide any services.

Aviation activity at the Mexico Farms Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	9	Local GA	65%
Multi-engine	<u>3</u>	Transient GA	35%
Totals	12	Total Operations	1,261

Martin Associates interviewed the airport manager of the Mexico Farms Airport, to assess the economic impacts that are generated by the airport on the local economy. Mexico Farms Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		2
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$88	
➤ Revenue – (\$1,000)	\$166	
➤ Taxes – (\$1,000)		\$11
➤ Local Purchases – (\$1,000)		

Montgomery County Airpark (GAI)

The Montgomery County Airpark is a publicly owned general aviation airport that is open for public use. The airport is located 3 miles NE of Gaithersburg, MD. The airport has 1 asphalt runway available for use (4,200 x 75 ft.) and provides the following services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Minor power plant service
- Flight instruction
- Aircraft rental and sales
- Charter flights
- Air freight
- Avionics service
- Corporate flight departments
- Airport restaurant
- T-hangars and paved tiedowns

Aviation activity at the Montgomery County Airpark represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	210	Local GA	57%
Multi-engine	35	Transient GA	35%
Jet	<u>2</u>	Air Taxi	8%
Totals	247	Total Operations	140,595

In addition to the airport manager, Martin Associates interviewed 18 tenants of the Montgomery County Airpark, including Montgomery Aviation, Congressional Air Charters, Freestate Aviation and several corporate flight departments, to assess the economic impacts that are generated by the airport on the local economy. Montgomery County Airpark generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	160
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$6,651
➤ Revenue – (\$1,000)	\$10,169
➤ Taxes – (\$1,000)	\$1,193
➤ Local Purchases – (\$1,000)	\$5,071

Ocean City Municipal Airport (OXB)

The Ocean City Municipal Airport is owned by the Town of Ocean City and is open for public use. The airport is located approximately 2 miles SW of Ocean City, MD. The airport has 2 asphalt/concrete runways available for use (3,201 x 75 ft. and 4,072 x 75 ft.) and provides the following aviation-related services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental
- Skydiving
- Automobile rentals
- Sightseeing
- T-hangars and paved tiedowns

Aviation activity at the Ocean City Municipal Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	37	Local GA	20%
Multi-engine	7	Transient GA	78%
Ultralights	1	Military	2%
Helicopter	<u>1</u>		
Totals	46	Total Operations	37,000

In addition to the airport manager, Martin Associates interviewed 10 tenants of the Ocean City Municipal Airport, including Ocean City Aircraft, Cloud Dancer, Ocean City Aero/Aerographics, Atlantic Air and Skytours, to assess the economic impacts that are generated by the airport on the local economy. Ocean City Municipal Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		27
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$1,081	
➤ Revenue – (\$1,000)	\$1,983	
➤ Taxes – (\$1,000)		\$201
➤ Local Purchases – (\$1,000)	\$189	

Potomac Airfield (VKX)

The Potomac Airfield is a publicly owned general aviation airport that is open for public use. The airport is located in close proximity to Washington, DC in Prince George's County. The airport has 1 asphalt runway available for use (2,665 x 40 ft.) and provides the following aviation-related services:

- Fuel Sales (100LL and 80oct)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental
- Charter flights
- Aircraft maintenance
- Automobile rentals
- T-hangars and turf tiedowns

Aviation activity at the Potomac Airfield represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	88	Local GA	98%
Multi-engine	<u>3</u>	Transient GA	2%
Totals	91	Total Operations	52,925

In addition to the airport manager, Martin Associates interviewed 10 tenants of the Potomac Airfield, including Buckley Aviation, Potomac Aviation Technology Corp. and ATC Flight Training, to assess the economic impacts that are generated by the airport on the local economy. Potomac Airfield generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		54
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$2,574	
➤ Revenue – (\$1,000)	\$1,624	
➤ Taxes – (\$1,000)		\$403
➤ Local Purchases – (\$1,000)	\$715	

Ridgely Airpark (1N0)

The Ridgely Airpark is a small, privately owned general aviation airport that is open for public use. The airport, formerly known as Ridgely-Pelican is located on the Delmarva Peninsula about 2 miles NE of Ridgely, MD and 35 E of the Bay Bridge. The airport has 1 asphalt runway available for use (3,200 x 50 ft.) and provides the following aviation-related services:

- Fuel Sales (100LL and Jet A)
- Agricultural operations (aerial spraying)
- Glider operations
- Flight instruction
- Aircraft rental
- Banner towing
- T-hangars and paved tiedowns

Aviation activity at the Ridgely Airpark represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	15	Local GA	32%
Multi-engine	1	Transient GA	68%
Gliders	9	Military	.5%
Ultralight	4	Air Taxi	.5%
Totals	29	Total Operations	31,113

In addition to the airport manager, Martin Associates interviewed 3 tenants of the Ridgely Airpark, including the Delmarva Soaring Association, to assess the economic impacts that are generated by the airport on the local economy. Ridgely Airpark generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		6
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$205	
➤ Revenue – (\$1,000)	\$112	
➤ Taxes – (\$1,000)		\$41
➤ Local Purchases – (\$1,000)	\$20	

Salisbury-Ocean City: Wicomico Regional Airport (SBY)

The Salisbury-Ocean City: Wicomico Regional Airport is located 4 miles SE of Salisbury, MD and offers daily commuter passenger service to Washington National and Philadelphia International Airports with 7 daily flights. Passenger activity represents approximately 6,100 enplaning passengers per month. The Salisbury-Ocean City: Wicomico Regional Airport has 1 asphalt runway available for use (5,000 x 100 ft.) and 1 asphalt/concrete runway (5,500 x 150 ft.). The airport provides the following aviation-related services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Commuter passenger service
- Flight instruction
- Aircraft rental
- Control tower
- Charter flights
- Corporate flight departments
- Air freight
- Automobile rentals
- Airport restaurant
- T-hangars and paved tiedowns

Aviation activity at the Salisbury-Ocean City: Wicomico Regional Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	79	Local GA	21%
Multi-engine	69	Transient GA	48%
Jet	2	Military	10%
Helicopters	1	Commercial	21%
Ultralights	<u>3</u>		
Totals	154	Total Operations	52,522

In addition to the airport manager, Martin Associates interviewed 31 tenants of the Salisbury-Ocean City: Wicomico Regional Airport, including Piedmont Airlines, TSA, Patrick Foundation, Federal Express, Maryland State Police, Bayland Aviation and RVA, to assess the economic impacts that are generated by the airport on the local economy. Salisbury-Ocean City: Wicomico Regional Airport generated the following impacts (on-site and visitor):

➤ Jobs (Direct, Induced & Indirect)	1,547
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$56,395
➤ Revenue – (\$1,000)	\$60,713

➤	Taxes – (\$1,000)	\$11,546
➤	Local Purchases – (\$1,000)	\$28,176

Suburban Airpark (W18)

The Suburban Airpark is a publicly owned general aviation airport that is open for public use. The airport is located approximately 2 miles SE of Laurel, MD. The airport has 1 asphalt runway available for use (2,324 x 40 ft.) and provides the following aviation-related services:

- Fuel Sales (100LL)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental
- T-hangars

Aviation activity at the Suburban Airpark represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	65	Local GA	98%
Totals	65	Transient GA	2%
		Total Operations	20,400

Martin Associates interviewed the airport manager of the Suburban Airpark, to assess the economic impacts that are generated by the airport on the local economy. Suburban Airpark generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)			4
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)		\$155	
➤ Revenue – (\$1,000)		\$265	
➤ Taxes – (\$1,000)			\$30
➤ Local Purchases – (\$1,000)			\$57

Tipton Airport (FME)

The Tipton Airport is owned and operated by the Tipton Airport Authority and is open for public use. The airport is located about 1 mile SW of Fort Meade (Odenton), MD. The airport has 1 asphalt runway available for use (3,000 x 75 ft.) and provides the following services:

- Fuel Sales (100LL)
- Minor airframe service
- Minor power plant service

Aviation activity at the Tipton Airport represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	82	Local GA	23%
Multi-engine	8	Transient GA	75%
Helicopters	<u>7</u>	Air Taxi	2%
Totals	97	Total Operations	48,000

In addition to the airport manager, Martin Associates interviewed 7 tenants of the Tipton Airport including Washington Hospital Medstar, Glenwood Aviation and Capital Air, to assess the economic impacts that are generated by the airport on the local economy. Tipton Airport generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)		103
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$5,127	
➤ Revenue – (\$1,000)	\$13,345	
➤ Taxes – (\$1,000)		\$768
➤ Local Purchases – (\$1,000)	\$2,414	

Washington Executive/Hyde Field (W32)

The Washington Executive/Hyde Field is a privately owned general aviation airport that is open for public use. The airport is located approximately 2 miles SW of Clinton, MD. The airport has 1 asphalt runway available for use (3,000 x 60 ft.) and provides the following aviation-related services:

- Fuel Sales (100LL and Jet A)
- Major airframe service
- Major power plant service
- Flight instruction
- Aircraft rental
- Charter flights
- T-hangars and paved tiedowns

Aviation activity at the Washington Executive/Hyde Field represents the following operational statistics regarding based aircraft and number of operations:

<u>Based Aircraft</u>		<u>Annual Aircraft Operations</u>	
Single-engine	48	Local GA	91%
Multi-engine	2	Transient GA	5%
Helicopters	<u>2</u>	Military	2%
		Air Taxi	2%
Totals	52	Total Operations	34,710

In addition to the airport manager, Martin Associates interviewed 9 tenants of the Washington Executive/Hyde Field, including Fetter Aviation, Prince George's County Police, Cloud Club and Gilley Aviation, to assess the economic impacts that are generated by the airport on the local economy. Washington Executive/Hyde Field generated the following impacts:

➤ Jobs (Direct, Induced & Indirect)	89
➤ Personal Income (Direct, Induced & Indirect) – (\$1,000)	\$3,875
➤ Revenue – (\$1,000)	\$3,413
➤ Taxes – (\$1,000)	\$664
➤ Local Purchases – (\$1,000)	\$3,062