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# Executive Summary



## THE REGIONAL AND LOCAL ECONOMIC IMPACTS

OF THE

**BALTIMORE/WASHINGTON INTERNATIONAL  
THURGOOD MARSHALL AIRPORT**

AND THE

**STATEWIDE**

**GENERAL AVIATION SYSTEM**



**Maryland  
Aviation  
Administration**





The Maryland Aviation Administration initiated a study to estimate the economic impacts of the Baltimore/Washington International Thurgood Marshall Airport (BWI), and to further estimate the economic impacts of the entire statewide 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 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 2005. In addition to the baseline impacts, an economic impact model has been developed for BWI as well as for the 34 general aviation/commuter 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; and
- General aviation operations.

This analysis is an update to a study that was conducted in 2002 to measure the economic impacts generated by passenger and air cargo activity at BWI and the general aviation airports. The same methodology has been used to quantify the 2005 impacts so that direct comparisons can be made between the current impacts and those generated by passenger and air cargo activity in the previous period.

Table 1 shows the economic impact of the state-wide aviation activity in calendar year 2005.

**Table 1.**  
**Economic Impact of the**  
**Maryland Statewide**  
**Aviation Industry**

	BWI Airport Generated	BWI Visitor Generated	Statewide General Aviation	Total
<b>JOBS</b>				
Direct Jobs	11,697	46,306	3,555	61,558
Induced Jobs	5,771	10,094	1,810	17,675
Indirect Jobs	5,210	18,259	1,432	24,901
<b>Total Jobs</b>	<b>22,679</b>	<b>74,658</b>	<b>6,797</b>	<b>104,134</b>
<b>Personal Income (000)</b>				
Direct	439,444	753,318	142,103	1,334,865
Induced	602,039	557,455	191,235	1,350,729
Indirect	242,232	539,260	62,813	844,304
<b>Total Personal Income (000)</b>	<b>1,283,715</b>	<b>1,850,032</b>	<b>396,151</b>	<b>3,529,898</b>
<b>Business Revenue (000)</b>	<b>1,858,569</b>	<b>3,082,650</b>	<b>501,417</b>	<b>5,442,636</b>
<b>Local Purchases (000)</b>	<b>405,955</b>	<b>1,022,875</b>	<b>135,972</b>	<b>1,564,802</b>
<b>State and Local Taxes (000)</b>	<b>132,222</b>	<b>331,542</b>	<b>40,802</b>	<b>504,567</b>
<b>Federal Aviation Taxes (000)</b>	<b>162,133</b>	<b>NA</b>	<b>1,002</b>	<b>163,135</b>

In the year 2005, it is estimated that aviation activity in the State of Maryland created approximately:

- 104,135 direct, induced, and indirect jobs;
- \$3.5 billion of personal wages and salaries;
- \$5.4 billion of business revenue;
- \$0.5 billion of state and local taxes; and
- \$1.6 billion of local purchases for supplies and services.

Activity at BWI created the majority of the economic impacts. In calendar year 2005, 19.8 million passengers used BWI, and 575.9 million pounds of air cargo moved via the airport. This activity resulted in approximately:

- 22,680 direct, induced and indirect jobs were generated for residents of the Baltimore area. Of the 22,680 jobs, 11,700 were direct jobs, while 5,770 jobs were induced throughout the region to support the purchase of goods and services by the 11,700 directly dependent employees. An additional 5,210 indirect jobs were generated in the local economy due to \$406 million of local purchases by firms directly dependent on airport activity.
- \$1.3 billion of direct, indirect and induced personal income and consumption expenditures were generated in the Baltimore area as a result of the airport activity in 2005.
- \$1.9 billion of business sales were generated by airport activity.
- The Federal Government received \$162 million in airport-specific taxes from activity at BWI.
- State and local governments received \$132 million in tax revenues from airport activity.

In addition to these direct, induced, and indirect impacts, it is estimated that nearly 74,660 direct, induced, and indirect jobs were generated in the Baltimore area visitor industry due to expenditures by 5.6 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 as part of this study. These visitors, who include both domestic as well as international travelers, spent about \$3.1 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, \$332 million of state and local tax revenues were generated.

Activity at the 34 General Aviation/Commuter airports in 2005 also created (as illustrated in Table 1):

- 6,797 direct, induced and indirect jobs were generated for residents of the State of Maryland. Of the 6,797 jobs, 3,555 were direct jobs, while 1,810 jobs were induced throughout the region to support the purchase of goods and services by the 3,555 directly dependent employees. An additional 1,432 indirect jobs were generated in the local economy due to \$136 million of local purchases by firms directly dependent on GA/Commuter airport activity.
- \$396 million of direct, indirect and induced personal income and consumption expenditures were generated in the State of Maryland area as a result of the GA/Commuter airport activity in 2005.
- \$501 million in business sales were generated by airport activity.
- The Federal Government received \$1 million in airport-specific taxes from activity at GA/Commuter airports.
- State and local governments received \$41 million in tax revenues from airport activity.

The total 104,135 jobs attributable to aviation activity in the State of Maryland represent roughly 5.2 percent of the total State of Maryland employment.

In addition to the Statewide Economic Impact Study described above, the Consultant also isolated the economic impacts of the cargo activity at BWI.

Table 2 summarizes the economic impacts generated by air cargo activity at BWI in calendar year 2005.

**Table 2.**  
**Summary of Economic**  
**Impacts Generated by**  
**Air Cargo at BWI**

	BWI Airport Generated
<b>JOBS</b>	
Direct Jobs	917
Induced Jobs	431
Indirect Jobs	162
<b>Total Jobs</b>	1,510
<b>Personal Income (000)</b>	
Direct	32,243
Induced	44,172
Indirect	8,044
<b>Total Personal Income (000)</b>	84,459
<b>Business Revenue (000)</b>	220,535
<b>Local Purchases (000)</b>	15,743
<b>State and Local Taxes (000)</b>	11,267
<b>Federal Aviation Taxes (000)</b>	12,761
<b>Related Jobs</b>	73,10

- In total, 1,510 direct, induced, and indirect jobs were generated by air cargo activity at BWI in 2005. These jobs include 917 direct jobs, 431 induced jobs and 162 indirect jobs supported by \$15.7 million of local purchases.
- There are 73,100 jobs related to the \$9.6 billion of air freight (excluding air mail) shipped through BWI in the year 2005. These jobs are classified as related to BWI, since it is the

demand for the products shipped by air that generated the employment, not the fact that the airfreight was shipped by air carriers using BWI. These related jobs also include the local support jobs with supplying firms required to produce the air freight.

- Nearly \$85 million of direct, induced and indirect wages and salaries were received by those holding direct, induced and indirect jobs.
- Businesses providing services to the air cargo operations at the airport received \$220.5 million. The state and local governments received \$11.3 million of tax revenue, and \$12.8 million of federal aviation-specific air cargo tax revenue was generated.

As part of the economic impact of the Maryland Statewide GA System, the Consultant was also retained to estimate the impacts of the Washington Air Defense Identification Zone (ADIZ) and Flight Restriction Zone (FRZ) operations within the Maryland Statewide Aviation System. In early 2003, the FAA implemented the ADIZ and FRZ in the interest of National security in response to the events of 9/11/2001. The purpose of the ADIZ is to monitor flight activity within the Washington Tri-Area Class B Airspace.

Historical annual based aircraft and operational data was collected and analyzed for BWI and the 34 GA airports in Maryland. While it is statistically difficult to attribute a decline in airport activity based solely on the implementation of the ADIZ and FRZ, it is apparent that the 14 airports that lie within the ADIZ/FRZ are not recovering from the initial 9/11/2001 fallout at the levels of the 14 perimeter (those lying just outside the ADIZ) airports or the entire Maryland Statewide General Aviation System. The Consultant's model was used to compare the changes from 2002 to 2005 between the two sectors. Tables 3 and 4 illustrate the changes in the economic impacts of the ADIZ/FRZ and perimeter airports since 2002.

**Table 3.**  
**Comparison of Impacts of**  
**ADIZ/FRZ Airports**  
**2002-2005**

	2005	2002	Change 2002- 2005
<b>ADIZ/FRZ Airports</b>			
<b>JOBS</b>			
Direct Jobs	1,191	1,190	1
Induced Jobs	646	526	120
Indirect Jobs	382	735	(353)
<b>Total Jobs</b>	<b>2,220</b>	<b>2,451</b>	<b>(231)</b>
<b>Personal Income (Million \$)</b>			
Direct	51,028	47,370	3,658
Induced	69,907	47,607	22,300
Indirect	18,014	26,501	(8,487)
<b>Total (Million \$)</b>	<b>138,949</b>	<b>121,478</b>	<b>17,470</b>
<b>Business Revenue (Million \$)</b>	<b>232,559</b>	<b>260,492</b>	<b>(28,933)</b>
<b>Local Purchases (Million \$)</b>	<b>33,953</b>	<b>45,001</b>	<b>(11,049)</b>
<b>State and Local Taxes (Million \$)</b>	<b>14,312</b>	<b>18,281</b>	<b>(3,969)</b>

**Table 4.**  
**Comparison of Impacts of**  
**Perimeter Airports**  
**2002-2005**

	2005	2002	Change 2002- 2005
<b>Perimeter Airports</b>			
<b>JOBS</b>			
Direct Jobs	1,455	1,235	210
Induced Jobs	804	507	297
Indirect Jobs	775	865	(90)
<b>Total Jobs</b>	<b>3,024</b>	<b>2,607</b>	<b>416</b>
<b>Personal Income (Million \$)</b>			
Direct	64,015	44,104	19,911
Induced	87,453	44,377	43,076
Indirect	34,440	29,789	4,651
<b>Total (Million \$)</b>	<b>185,908</b>	<b>118,270</b>	<b>67,638</b>
<b>Business Revenue (Million \$)</b>	<b>215,086</b>	<b>196,078</b>	<b>19,008</b>
<b>Local Purchases (Million \$)</b>	<b>79,564</b>	<b>59,575</b>	<b>19,989</b>
<b>State and Local Taxes (Million \$)</b>	<b>19,147</b>	<b>19,450</b>	<b>(303)</b>

■ Airports within the ADIZ/FRZ showed no increase or decrease in direct jobs as the number remained unchanged from 2002. In comparison, airports on the perimeter grew by 210 direct jobs. Induced jobs at ADIZ/FRZ airports grew by 120, while perimeter airports increased by 297 jobs, reflecting a higher income multiplier for the airline sector of the Maryland economy.

■ Indirect jobs at ADIZ/FRZ airports fell by 353 jobs, reflecting a decline in \$11 million of local spending by airport firms. In comparison, perimeter airports indirect jobs decreased by 90, despite the growth in local purchases of nearly \$20 million.

■ Direct personal income at ADIZ/FRZ airports grew by \$3.7 million, reflecting the growth in average income per direct jobs and the growth in direct jobs. The induced income and consumption impact grew by \$22.3 million. Indirect income declined by \$8.5 million, due to the reduction in indirect jobs. Personal income at perimeter airports increased \$20 million while induced earnings and consumption grew by \$43.1 million, reflecting the increase of 297 induced jobs. Indirect income increased by \$4.7 million despite a loss of 90 indirect jobs, which reflects the higher paying indirect jobs created in 2005 compared to the indirect jobs in 2002.

■ Business revenue fell by \$29 million at ADIZ/FRZ airfields, reflecting the reduction in airport activity. Conversely, perimeter airports exhibited a revenue growth of \$19 million.





