

# **REPORT TO THE STRATEGIC DEVELOPMENT COMMITTEE**

## **INFORMATION REPORT ON 2012 ECONOMIC IMPACT STUDY**

**MAY 2014**

## **PURPOSE**

To present results of the 2012 Economic Impact Study, analyzing the Airports Authority's contributions to the National Capital regional economy in terms of jobs, labor income, tax revenue and business income.

## 2012 Economic Impact Study

### **U.S. airports are key economic drivers, supporting**

- 11 million jobs
- \$365 billion payroll
- \$1.2 trillion economic output

### **MWAA study of 2012 impact**

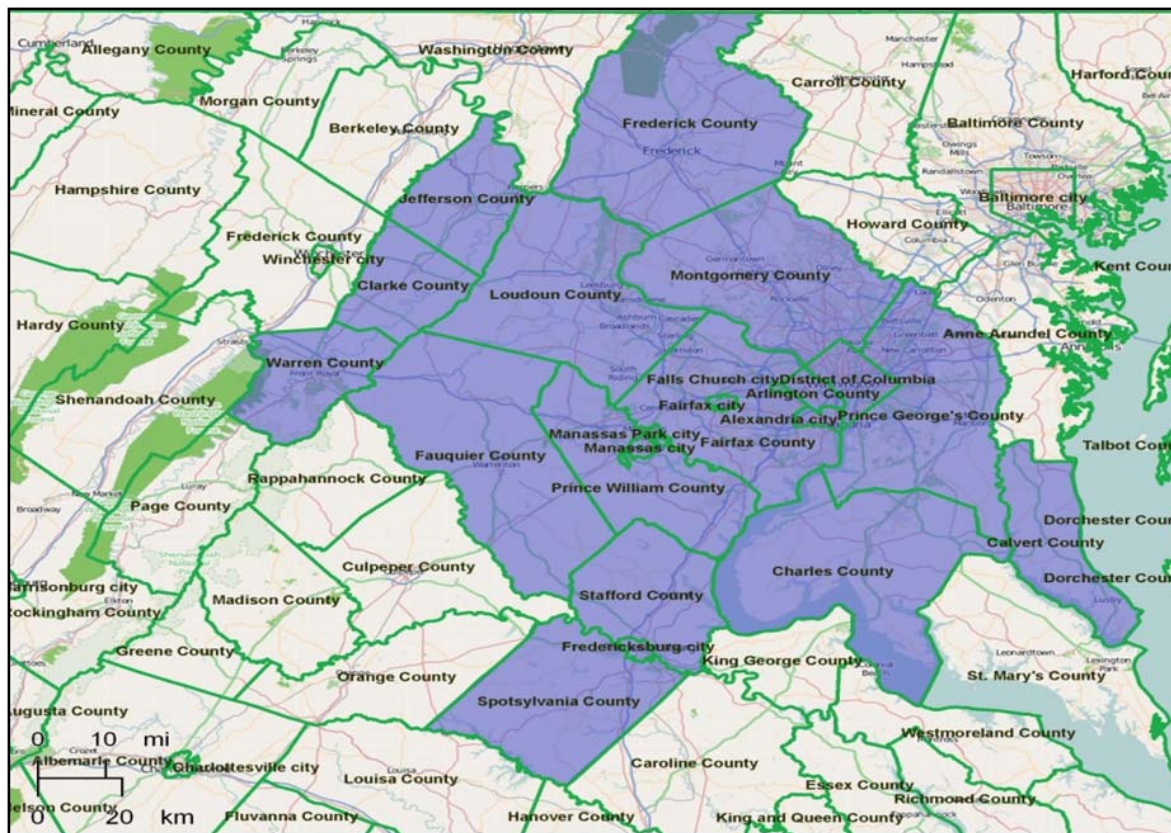
- Led by Willdan Financial, includes local subcontractors
- Reviewed by Stephen Fuller of George Mason University

### **Findings: Airports Authority supports**

- 4.5 percent of regional GDP
- 387,000 jobs
- \$15 billion labor income
- \$3 billion taxes
- \$21 billion business revenue



## Study Area



- The Airports Authority is a major regional employer, drawing workers from Virginia, the District of Columbia, and Maryland.
- The average annual wage paid to direct on-airport employees in 2012 was nearly \$70,000.

## 2012 Economic Impact: JOBS – Direct, Indirect and Induced

|                             | Dulles<br>International | Reagan<br>National | Dulles<br>Toll Road | Dulles Corridor<br>Metrorail Project | Total Impact <sup>1</sup> |
|-----------------------------|-------------------------|--------------------|---------------------|--------------------------------------|---------------------------|
| <b>VIRGINIA</b>             |                         |                    |                     |                                      |                           |
|                             | 146,122                 | 48,916             | 557                 | 6,802                                | 202,397                   |
| <b>DISTRICT OF COLUMBIA</b> |                         |                    |                     |                                      |                           |
|                             | 68,345                  | 54,076             | 400                 | 1,040                                | 123,862                   |
| <b>MARYLAND</b>             |                         |                    |                     |                                      |                           |
|                             | 33,239                  | 20,738             | 78                  | 6,755                                | 60,808                    |
| <b>TOTAL IMPACT – JOBS</b>  |                         |                    |                     |                                      |                           |
|                             | 247,706                 | 123,730            | 1,035               | 14,597                               | 387,068                   |

<sup>1</sup> Job creation estimates calculated by IMPLAN include full-time, part-time, and seasonal workers.

## Labor Income – Direct, Indirect and Induced (\$ Millions)

|                                    | Dulles International | Reagan National | Dulles Toll Road | Dulles Corridor Metrorail Project | Total Impact <sup>1</sup> |
|------------------------------------|----------------------|-----------------|------------------|-----------------------------------|---------------------------|
| <b>VIRGINIA</b>                    |                      |                 |                  |                                   |                           |
|                                    | \$5,944.9            | \$1,944.8       | \$25.7           | \$313.4                           | \$8,228.8                 |
| <b>DISTRICT OF COLUMBIA</b>        |                      |                 |                  |                                   |                           |
|                                    | \$2,505.2            | \$1,987.5       | \$18.3           | \$57.6                            | \$4,568.9                 |
| <b>MARYLAND</b>                    |                      |                 |                  |                                   |                           |
|                                    | \$1,500.0            | \$750.8         | \$4.1            | \$310.0                           | \$2,564.9                 |
| <b>TOTAL IMPACT – LABOR INCOME</b> |                      |                 |                  |                                   |                           |
|                                    | \$9,950.0            | \$4,683.1       | \$48.2           | \$681.3                           | \$15,362.6                |

<sup>1</sup>Total impact includes direct, indirect and induced labor income (wages)

Source: Airports Authority; WBA Research; Destination DC; Metropolitan Washington Council of Governments; IMPLAN Group, Inc., Willdan, 2013.

## 2012 Economic Impact: State & Local Taxes (\$ Millions)

|                             | Dulles International | Reagan National | Dulles Toll Road | Dulles Corridor Metrorail Project | Total Impact <sup>1</sup> |
|-----------------------------|----------------------|-----------------|------------------|-----------------------------------|---------------------------|
| <b>VIRGINIA</b>             |                      |                 |                  |                                   |                           |
|                             | \$612.9              | \$205.2         | \$2.3            | \$28.5                            | \$848.9                   |
| <b>DISTRICT OF COLUMBIA</b> |                      |                 |                  |                                   |                           |
|                             | \$378.0              | \$299.1         | \$2.2            | \$5.8                             | \$685.1                   |
| <b>MARYLAND</b>             |                      |                 |                  |                                   |                           |
|                             | \$208.5              | \$130.1         | \$0.5            | \$42.4                            | \$381.4                   |
| <b>TOTAL IMPACT</b>         |                      |                 |                  |                                   |                           |
|                             | \$1,199.4            | \$634.4         | \$5.0            | \$76.7                            | \$1,915.5                 |

<sup>1</sup>Total impact includes personal income, sales, property and corporate taxes as estimated by the IMPLAN economic impact model.  
Source: Airports Authority; WBA Research; Destination DC; Metropolitan Washington Council of Governments; IMPLAN Group, Inc., Willdan, 2013.



## Visitor Spending

(average international visitor spends \$3,300 per trip)

| Visitor Industry Spending<br>(\$ Millions) <sup>2</sup> | Virginia<br>Visitor | D.C.<br>Visitor | Maryland<br>Visitor | Total           |
|---|---------------------|-----------------|---------------------|-----------------|
| Lodging   | 2,156.7             | 2,249.0         | 683.7               | 5,089.4         |
| Food  | 623.3               | 711.3           | 204.4               | 1,539.0         |
| Rental Car  | 933.4               | 1,275.8         | 362.3               | 2,571.5         |
| Entertainment   | 419.0               | 499.7           | 148.1               | 1,066.8         |
| Retail  | 502.9               | 706.2           | 204.0               | 1,413.1         |
| Taxi  | 381.6               | 353.5           | 110.2               | 845.3           |
| <b>Total</b>  | <b>5,016.9</b>      | <b>5,795.5</b>  | <b>1,712.6</b>      | <b>12,525.0</b> |

<sup>2</sup> Allocation of visitors by jurisdiction based on location of lodging. Spending is assumed to be throughout the regional study area. Visitor industry employment impacts are adjusted to reflect location of employee residence as estimated by MWCOG Air Quality Conformity Model data.

Source: MWAA; WBA Research; IMPLAN Group, Inc.; Metropolitan Washington Council of Governments; Willdan, 2013.





Ronald Reagan Washington National Airport



Dulles Corridor Metrorail Project



Dulles Toll Road



Washington Dulles International Airport



METROPOLITAN WASHINGTON  
AIRPORTS AUTHORITY

**INFORMATION PAPER FOR THE  
STRATEGIC DEVELOPMENT COMMITTEE  
2012 ECONOMIC IMPACT STUDY  
MAY 2014**

**PURPOSE**

To present results of the 2012 Economic Impact Study, analyzing the Airports Authority's contributions to the National Capital regional economy in terms of jobs, labor income, tax revenue and business income.

**BACKGROUND**

To measure their contribution to the economy, many airports, including Reagan National and Dulles International, periodically analyze their impact on local and regional jobs, income, consumer spending, tax revenue and other key business indicators.

During 2013, the Airports Authority commissioned an analysis of 2012 economic data to update its most recent Economic Impact Study, which was last updated with information from 2009. In addition to the economic contribution of the Airports, the 2012 assessment also measured the impact of the Dulles Toll Road and Dulles Corridor Metrorail Project. The study was conducted by an independent team of economic analysis firms and was reviewed and validated by regional economics experts from George Mason University.

**DISCUSSION**

The 2012 survey determined that the Airports Authority's operations accounted for about 4.5 percent of the National Capital Region's gross domestic product and supported more than 387,000 direct, indirect and induced jobs, accounting for \$15.4 billion in labor income, \$3.2 billion in tax revenue and \$20.9 billion in business revenue.

The survey area included the District of Columbia; Montgomery and Prince George's counties in Maryland; the Virginia counties of Arlington, Fairfax, Loudoun, Prince William, Clarke and Fauquier; and the Virginia cities of

Alexandria, Fairfax, Falls Church, Manassas and Manassas Park. The analysis measured the Airports Authority's economic impacts on each of these individual jurisdictions as well as the State of Maryland and the Commonwealth of Virginia.

The study found that the Airports Authority is a major regional employer, providing and supporting jobs over an area including the District of Columbia and parts of Maryland and Virginia, with on-airport workers paid average annual wages of \$70,000.

The Airports Authority provides or supports about 202,000 jobs in Virginia; nearly 124,000 in the District of Columbia and nearly 61,000 in Maryland. Labor income from those jobs totals \$8.2 billion in Virginia, more than \$4.5 billion in the District of Columbia and more than \$2.5 billion in Maryland. The Airports Authority's business activities also support state and local tax revenues of \$848.9 million in Virginia, \$685 million in the District of Columbia and \$381 million in Maryland.

Visitor spending was found to be a key segment of the regional economy, with the Airports Authority making a significant contribution. Spending by tourists and business travelers who used Reagan National and Dulles International Airports in 2012 was nearly \$5.8 billion in the District of Columbia, just over \$5 billion in Virginia and \$1.7 billion in Maryland. International visitors, most of whom use Dulles International Airport, were found to be the biggest spenders in the region, averaging about \$3,300 per trip.

The study made particular note of the importance of the worldwide business connections provided by Dulles International Airport, as transportation is expected to assume an increasing role in the National Capital region's future economic growth and its further development as a global business center.

## **CONCLUSION**

The study confirms the Airports Authority's substantial and growing role in the regional economy and amplifies the importance of the Airports Authority's transportation services to future economic growth.

Prepared by:  
Office of Communications  
May 2014



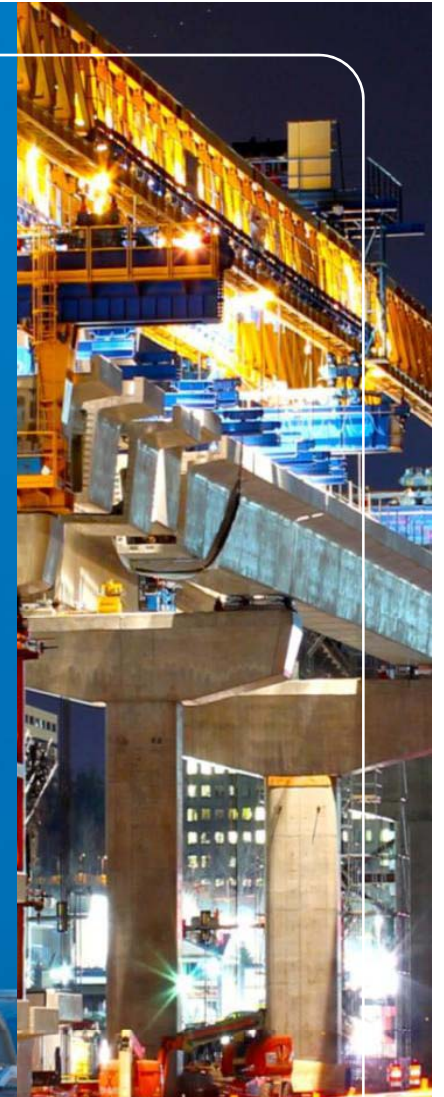
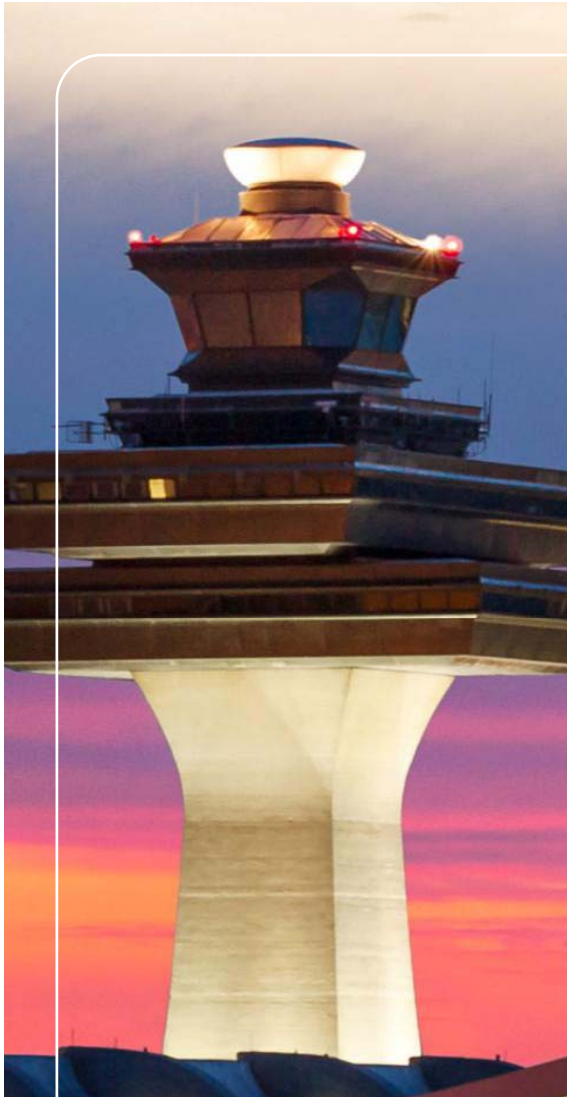


# 2012 Economic Impact Study



METROPOLITAN WASHINGTON  
AIRPORTS AUTHORITY





# Executive Summary



METROPOLITAN WASHINGTON  
AIRPORTS AUTHORITY

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## ABOUT THE AIRPORTS AUTHORITY

The Metropolitan Washington Airports Authority manages and operates Washington's Ronald Reagan Washington National and Washington Dulles International airports, which together serve more than 40 million passengers a year.

The Airports Authority also operates and maintains the Dulles Airport Access Road, the Dulles Toll Road and manages construction of the Dulles Corridor Metrorail Project, the 23-mile Silver Line extension of the Washington region's Metrorail system into Loudoun County, Virginia. No taxpayer money is used to operate the Toll Road, which is funded by toll revenues, or the airports, which are funded through aircraft landing fees, rents and revenues from concessions. The Silver Line construction is funded by a combination of Toll Road revenues, airport contributions and federal, state and local government appropriations.

The Airports Authority was established in 1987 by the governments of Virginia and the District of Columbia and is led by a 17-member board of directors appointed by the governor of Virginia, Maryland, the mayor of Washington, D.C., and the President of the United States.





## FOREWORD

### *Washington's airports provide major boost to regional economy*

The Metropolitan Washington Airports Authority's 2012 Economic Impact Study establishes the baseline measurement of its economic impacts within the Washington metropolitan area economy. This quantification of capital and operations expenditures in 2012 establishes the Airports Authority and its auxiliary and associated activities as a major economic force within the regional economy.

The presence of Dulles International and Reagan National airports has significant collateral benefits favorably impacting the regional economy. The connectivity of the Washington region's economy to the national and global economies is facilitated by the airlines serving the region through these airports. This connectivity is most visible in the growing numbers of business and leisure visitors arriving to the Washington area and the vitality of the hospitality industry that remains a key growth sector in the regional economy. In 2012, passenger volume at Dulles International and Reagan National airports grew to 41.2 million, up 3.5 percent from 2009. Of these passengers, 38 percent or approximately 8 million visitors were flying out of Washington on business or leisure travel.

These business and leisure visitors, accessing the Washington area by airplane, constitute a major source of direct and related business that impacted every sector of the local economy and assured the region's hospitality industry of a competitive position in the global business and leisure travel market. The national and global connectivity provided by air service through Dulles International and Reagan National Airports is also visible in the growing numbers of airport-dependent businesses located on-site or in convenient proximity to these facilities.

The Airports 2012 Authority's Economic Impact Study reports that there were 19,493 total direct, indirect and induced jobs associated with airport-dependent industries. But, beyond these airport-dependent businesses are significant numbers of other businesses with related economic activities that have been attracted to locate in the Washington region due to its easy access to the nation's major hubs and international business centers for which there is no accurate measure. This connectivity helps to explain the more than 400 internationally owned businesses located in Fairfax County and many others throughout the Washington region and is what will be the critical determinant of the region's economic outlook.

Looking forward, as the Washington regional economy shifts from a federally dependent economic base to a global business center, connectivity to the primary business centers elsewhere in the world will determine which of today's major business centers will become dominant global centers. While air service connectivity will be critical—more international flights and non-stop intra-national routes—the immediate and long lasting economic impact will be the inter-modal connectivity provided with the completion of Silver Line Metrorail service to Dulles International connecting it via rapid rail to the remainder of the regional economy.

This new level of service linking Northern Virginia's rapidly growing, high-value added, technology-intensive business base to the region's other major export generators—the hospitality industry, educational and health services, professional and business services, and the federal and international governmental and non-profit institutions and organizations—will create, for the first time, a regional economy wrapped around a system of multi-model transportation services with the region's two major airports connecting this networked economy to the world.

This integrated multi-model transportation system will elevate the Washington metropolitan area's economic competitive position to one of the world's primary global business centers offering multiple airports integrated into a system of public transportation and limited-access expressways connecting the region's major employment centers.

The Washington metropolitan area is forecast to experience strong economic growth into the future with this forecast premised on the achievement of global connectivity through the expansion potential of Dulles International and its integration into the regional multi-model transportation network with the completion of the Silver Line serving Dulles International and extending into Loudoun County. While Dulles International and Reagan National airports have been primary forces in shaping the region's economic growth over the past fifty years, their importance to the Washington region's future economic outlook will be even more critical due to the globalization of the world economy.

**Stephen S. Fuller, Ph.D., Dwight Schar Faculty Chair and University professor and Director, Center for Regional Analysis, George Mason University**

**December 30, 2013**





## GLOSSARY OF ECONOMIC IMPACTS

### Jobs

**Direct Jobs** – are generated by the airport and would not exist but for the Airports Authority's operations. Job creation estimates calculated by IMPLAN include a mix of full-time, part-time, and seasonal workers.

**Indirect Jobs** – are generated when airport or airport-dependent businesses buy goods and services from businesses located in the area being studied. Examples include office supplies, maintenance services, fueling companies, and other materials providers.

**Induced Jobs** – are generated by spending of wages that are earned by workers of airport or airport-dependent firms, and by employees of suppliers, for consumer goods such as food, clothing, and housing.

**Jobs Created versus Jobs Supported** – Jobs are typically only created when an impact involves a new and sustained level of production. More frequently, jobs are supported by such activities as construction or tourism spending. Capital expenditures are tied to one-time (supported) jobs. Operations expenditures are tied to annual ongoing (created) jobs. For the purpose of this study, jobs created and supported are calculated separately and combined to reflect a 2012 snapshot of the Airports Authority's total employment impacts.

Economic impacts are calculated by the IMPLAN® (IMpact analysis for PLANning) economic impact modeling system. IMPLAN Group LLC's software tools and region-specific data are the basis for multi-regional Social Accounting Matrices (SAMs) and Multiplier Models of national, state, regional and local economies.

### Output

Output – or total economic activity – is the value of production by industry in a calendar year. For the purpose of this study, output is measured from a demand perspective – as the total value of purchases by intermediate and final consumers. Output can also be thought of as a value of sales (i.e., business revenue) plus or minus changes in inventory.

### Business Revenue

Sales to airlines, service companies, construction companies, and other businesses directly dependent on the airport benefit from the Airports Authority's capital program and annual operations and maintenance spending. The tourism industry also benefits from visitor spending by passengers traveling through Dulles International and Reagan National Airports.

### Personal Income

Wages and salaries (labor income) paid to individuals employed due to the Airports Authority's activity. Personal income is reported in terms of direct, indirect (local purchases) and induced (labor re-spending) activities.

### Study Area Boundary

Based on the results of the on-airport employment survey and the airport user surveys, the majority of the Airports Authority's economic activities occur within jurisdictions generally comprising the Washington, D.C., metropolitan area (the region).

## *The Airports Authority's Contribution to the Regional Economy*

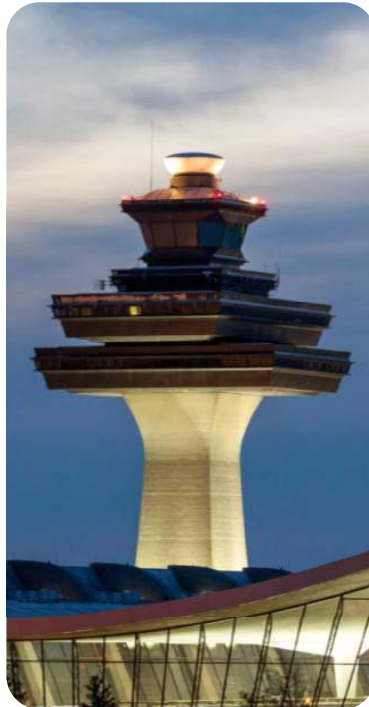
The Airports Authority's ongoing investment in the Washington metropolitan area's transportation infrastructure is critical to supporting the Washington metropolitan area's multimodal transportation connectivity.

The Airports Authority is responsible for managing and operating Dulles International Airport, Reagan National Airport, and the Dulles Toll Road. The Airports Authority also manages the ongoing construction of the Dulles Corridor Metrorail Project.

The Airports Authority is not taxpayer-funded but is self-supporting, using aircraft landing fees, passenger facility charges, rents and revenues from concessions to fund operating and capital expenses through its Aviation Enterprise Fund.

The Dulles Corridor Enterprise Fund uses collected tolls to support the Dulles Toll Road's operations and maintenance and, along with grants from federal, state, and local governments, to finance the Dulles Corridor's Capital Improvement Program, which includes the construction of the Dulles Metrorail Project.

Annual capital expenditures and investments in transportation infrastructure create and preserve jobs and generate additional opportunities for regional economic development.



In 2012, more than 42.2 million passengers and 586 million pounds of freight moved through Dulles International and Reagan National airports.

The Airports Authority employed 1,507 people including full-time and part-time permanent workers as follows: 699 at Dulles International, 760 at Reagan National (including 245 for consolidated functions), 30 at the Dulles Toll Road and 18 on the Metrorail system).

Airport facilities provide space for retail tenants, government agencies and other employers that collectively employ 26,078 people on site (excluding Airports Authority staff and flight crews). Combined with Airports Authority staff, on-site airport employment is 27,537 people.

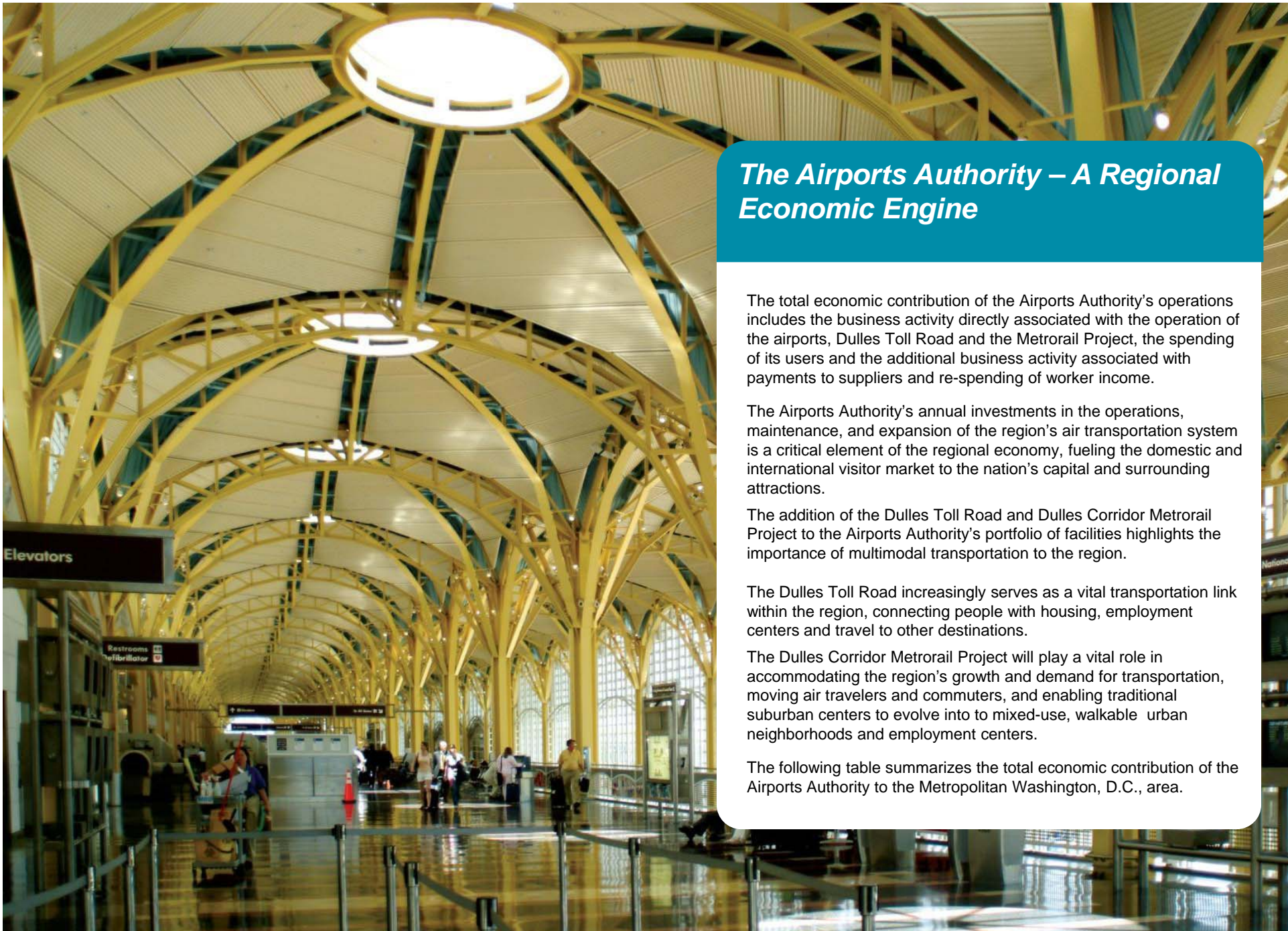
The Airports Authority's contribution extends beyond the on-site employment and airport tenants. The Airports Authority's aviation enterprise supported more than 371,000 total jobs, \$14.6 billion in labor income, \$3.1 billion in state, local and aviation taxes and \$19.8 billion in business revenue in 2012 (including \$14.1 billion for Dulles International and \$5.8 billion for Reagan National).

The Dulles Corridor Enterprise supported more than 15,600 jobs, \$729.5 million in labor income, \$81.7 million in state and local taxes and \$1.1 billion in business revenue (including \$113.5 million for the Dulles Toll Road and \$986.9 million for the Metrorail Project).

In total, the Airports Authority supported more than 387,000 jobs, \$15.4 billion in labor income, \$3.2 billion in state and local taxes and \$20.9 billion in business revenue. The Airports Authority's combined operations generated contributes 4.5 percent of the Washington metropolitan area's total Gross Domestic Product (GDP).

When complete, the Dulles Corridor Metrorail project will lead to additional catalytic economic development, connecting people with high quality jobs – at the new stations in Fairfax and Loudoun counties to Dulles International and throughout the Washington metropolitan area, including the District of Columbia and Maryland.





## ***The Airports Authority – A Regional Economic Engine***

The total economic contribution of the Airports Authority's operations includes the business activity directly associated with the operation of the airports, Dulles Toll Road and the Metrorail Project, the spending of its users and the additional business activity associated with payments to suppliers and re-spending of worker income.

The Airports Authority's annual investments in the operations, maintenance, and expansion of the region's air transportation system is a critical element of the regional economy, fueling the domestic and international visitor market to the nation's capital and surrounding attractions.

The addition of the Dulles Toll Road and Dulles Corridor Metrorail Project to the Airports Authority's portfolio of facilities highlights the importance of multimodal transportation to the region.

The Dulles Toll Road increasingly serves as a vital transportation link within the region, connecting people with housing, employment centers and travel to other destinations.

The Dulles Corridor Metrorail Project will play a vital role in accommodating the region's growth and demand for transportation, moving air travelers and commuters, and enabling traditional suburban centers to evolve into to mixed-use, walkable urban neighborhoods and employment centers.

The following table summarizes the total economic contribution of the Airports Authority to the Metropolitan Washington, D.C., area.



## Impacts by Airports Authority Function

More than 27,500 people were employed on-site at Dulles International and Reagan National Airports by the Airports Authority and on-airport tenants combined. Visitor industry, jobs created by construction and operations and maintenance spending generated nearly 200,000 additional related jobs – a total of **217,542 full-time, part-time and seasonal workers** earning **\$7.3 billion in wages** directly attributed their employment to the Airports Authority's operations and facilities.

As the Airports Authority's construction, operations, maintenance and employee wage spending is re-circulated throughout the regional economy, additional jobs, income and tax revenues are generated through the multiplier effect.

Combined with the Dulles Toll Road and Metrorail Project's construction and operations activities, the Airports Authority's combined operations generated approximately **387,068 total jobs** and **\$15.4 billion in total wages** (direct, indirect and induced).

| Airports Authority Function       | Direct Spending<br>(\$ Millions) | Direct Jobs    | Total Jobs     | Direct Payroll<br>(\$ Millions) | Total Payroll<br>(\$ Millions) |
|-----------------------------------|----------------------------------|----------------|----------------|---------------------------------|--------------------------------|
| Aviation (On-Airport Operations)  | \$386.30                         | 217,542        | 371,436        | \$7,248.6                       | \$14,633.1                     |
| Dulles Toll Road                  | \$29.2                           | 686            | 1,035          | \$31.1                          | \$48.2                         |
| Dulles Corridor Metrorail Project | \$573.2                          | 9,481          | 14,597         | \$419.8                         | \$681.3                        |
| <b>Total <sup>1</sup></b>         | <b>\$988.70</b>                  | <b>227,709</b> | <b>387,068</b> | <b>\$7,699.5</b>                | <b>\$15,362.6</b>              |

<sup>1</sup>Economic impacts based on combined direct Airports Authority employment, visitor industry employment, jobs created by capital programs (construction) spending, and operations & maintenance spending. Total impacts include direct, indirect and induced benefits. Job estimates include full-time, part-time and seasonal employment.

Source: Airports Authority; Metropolitan Washington Council of Governments; WBA Research; DestinationDC; Willdan, 2013.



*The Airports Authority's combined operations include aviation and airport-dependent industries, visitor industry spending, the Dulles Toll Road and the Dulles Corridor Metrorail Project.*

## *Summary of Aviation Impacts:*

- *Dulles International and Reagan National are key drivers for the region's economy*
- *The direct impact is 27,537 on-site aviation jobs and \$1.5 billion in labor income*
- *49,032 total direct, indirect and induced aviation jobs and \$2.4 billion total annual aviation labor income*
- *Adding capital program expenditures, airport dependent (freight) activity, and visitor spending to on-site aviation impacts yields 217,542 direct jobs and 371,436 total jobs*
- *Together, Dulles International and Reagan National airports supported \$7.3 billion in direct labor income and \$14.6 billion in total labor income in 2012*
- *\$19.8 billion in combined direct economic activity (business revenues) including aviation, capital programs, operations and maintenance expenditures and visitor industry*



*As a major operator of the region's*

*transportation infrastructure, the Airports Authority enables local businesses to access markets beyond the local area. Local manufacturing establishments use airports to export their products domestically and overseas.*

*Having access to air transport for the export of goods can make a critical difference in the ability of the Metropolitan Washington, D.C., area to compete in the global marketplace.*

## ***Breakdown of 2012 Aviation Impacts: Dulles International and Reagan National Airports Jobs and Labor Income by Economic Activity***

| <u>Direct Jobs</u>                | <u>Dulles International</u> | <u>Reagan National</u> | <u>Total<sup>1</sup></u> |
|-----------------------------------|-----------------------------|------------------------|--------------------------|
| Capital Program                   | 1,620                       | 896                    | 2,516                    |
| On-Site Employment                | 19,371                      | 8,166                  | 27,537                   |
| Operations & Maintenance Spending | 2,103                       | 2,095                  | 4,198                    |
| Visitor Spending                  | 111,202                     | 61,871                 | 173,073                  |
| Airport Dependent/ Freight        | 10,219                      | -                      | 10,219                   |
| <b>Direct Jobs</b>                | <b>144,515</b>              | <b>73,028</b>          | <b>217,542</b>           |

| <u>Direct Labor Income (\$ Millions)</u> | <u>Dulles International</u> | <u>Reagan National</u> | <u>Total</u>     |
|--|-----------------------------|------------------------|------------------|
| Capital Program                          | \$95.4                      | \$54.1                 | \$149.5          |
| On-Site Employment                       | \$1,079.7                   | \$429.3                | \$1,508.9        |
| Operations & Maintenance Spending        | \$122.8                     | \$122.4                | \$245.2          |
| Visitor Spending                         | \$2,984.4                   | \$1,660.5              | \$4,644.9        |
| Airport Dependent/ Freight               | \$700.0                     | \$-                    | \$700.0          |
| <b>Direct Labor Income</b>               | <b>\$4,982.4</b>            | <b>\$2,266.2</b>       | <b>\$7,248.6</b> |

| <u>Total Direct, Indirect &amp; Induced Jobs</u> | <u>Dulles International</u> | <u>Reagan National</u> | <u>Total</u>   |
|--|-----------------------------|------------------------|----------------|
| Capital Program                                  | 2,580                       | 1,427                  | 4,008          |
| On-Site Employment                               | 34,492                      | 14,540                 | 49,032         |
| Operations & Maintenance Spending                | 3,219                       | 3,206                  | 6,426          |
| Visitor Spending                                 | 187,922                     | 104,557                | 292,478        |
| Airport Dependent/ Freight                       | 19,493                      | -                      | 19,493         |
| <b>Total Jobs</b>                                | <b>247,706</b>              | <b>123,730</b>         | <b>371,436</b> |

| <u>Total Direct, Indirect &amp; Induced Labor Income (\$ Millions)</u> | <u>Dulles International</u> | <u>Reagan National</u> | <u>Total</u>    |
|--|-----------------------------|------------------------|-----------------|
| Capital Program  | 147.7                       | 83.5                   | 231.3           |
| On-Site Employment   | 1,719.3                     | 683.6                  | 2,402.9         |
| Operations & Maintenance Spending                                      | 181.7                       | 181.0                  | 362.7           |
| Visitor Spending   | 6,712.9                     | 3,734.9                | 10,447.8        |
| Airport Dependent/ Freight   | 1,188.4                     | -                      | 1,188.4         |
| <b>Total Labor Income</b>  | <b>9,950.0</b>              | <b>4,683.1</b>         | <b>14,633.1</b> |

<sup>1</sup>Totals may not tie to sum of individual values due to rounding as calculated by IMPLAN.



## Summary of Dulles Toll Road Impacts:

*The Dulles Toll Road is a vital regional transportation link connecting people with housing, high value employment centers and air transport , including:*

- *1,035 total direct, indirect and induced jobs and \$48.2 million in total annual labor income*
- *Ongoing operations: 30 Airports Authority direct jobs and \$1.5 million in labor income*
- *Capital programs spending: 246 direct jobs and \$13.1 million in labor income*
- *Operations and maintenance spending: 410 direct jobs and \$22.8 million in labor income*
- *\$113.5 million in total business revenues (employment, capital programs, operations and maintenance)*

## Summary of Dulles Corridor Metrorail Project Impacts:

*The Dulles Corridor Metrorail project is accommodating the region's growth and demand for transportation, moving travelers and commuters . Construction and operations activity in 2012 alone created:*

- *14,597 total direct, indirect and induced jobs and \$681.3 million in total annual labor income*
- *Ongoing operations: 18 Airports Authority direct jobs and \$2.5 million in labor income*
- *Capital programs spending: 8,628 direct jobs and \$379.8 million in labor income*
- *Operations and maintenance spending: 835 direct jobs and \$37.5 million in labor income*
- *\$986.9 million in total business revenues (employment, capital programs, operations and maintenance)*

*Metrorail construction is directly linked to substantial catalytic development activity – traditional suburban centers are evolving into to mixed-use, walkable urban neighborhoods and employment centers*



## Summary of Economic Impacts

| Jobs <sup>1</sup>                 |                                   | Direct Jobs | Indirect Jobs | Induced Jobs | Total Jobs |
|-----------------------------------|-----------------------------------|-------------|---------------|--------------|------------|
| Aviation                          | Capital Program                   | 2,516       | 578           | 914          | 4,008      |
|                                   | On-Site Employment                | 27,537      | 10,679        | 10,816       | 49,032     |
|                                   | Operations & Maintenance Spending | 4,198       | 810           | 1,418        | 6,426      |
|                                   | Visitor Spending                  | 173,073     | 63,159        | 56,247       | 292,478    |
|                                   | Airport Dependent Industries      | 10,219      | 5,050         | 4,224        | 19,493     |
| Dulles Toll Road                  | Capital Program                   | 246         | 57            | 76           | 379        |
|                                   | On-Site Employment                | 30          | 7             | 9            | 46         |
|                                   | Operations & Maintenance Spending | 410         | 77            | 123          | 609        |
| Dulles Corridor Metrorail Project | Capital Program <sup>2</sup>      | 8,628       | 1,982         | 2,681        | 13,290     |
|                                   | On-Site Employment                | 18          | 4             | 6            | 28         |
|                                   | Operations & Maintenance Spending | 835         | 186           | 258          | 1,279      |
| Total Impacts                     |                                   | 227,710     | 82,589        | 76,772       | 387,068    |

<sup>1</sup>Job creation estimates calculated by IMPLAN include full-time, part-time, and seasonal workers. Totals may not tie to sum of individual values due to rounding.

<sup>2</sup>According to the *Dulles Corridor Metrorail Project Quarterly Update* dated May 2012, DTP's project staffing consists of 305 professional staff and 1,148 manual craft workers (including DTP employees and subcontractors), for a total of 1,453 workers. The balance of Metrorail Project employment (7,175 workers) is generated by approximately \$439.1 million in ancillary direct contract services spending within the regional economy.

Source: Airports Authority; WBA Research; DestinationDC; Metropolitan Washington Council of Governments; IMPLAN Group, Inc., Willdan, 2013.

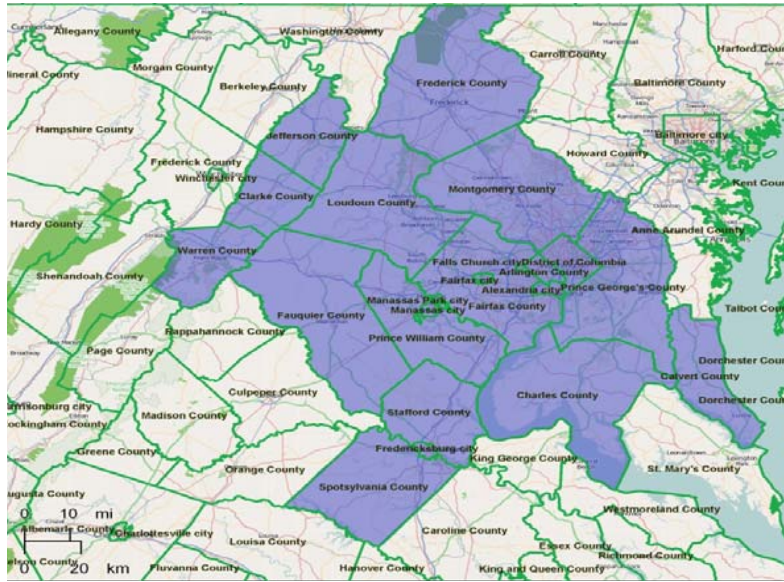
## Summary of Economic Impacts

| Labor Income (\$ Millions)        |                                   | Direct Wages | Indirect Wages | Induced Wages | Total Wages |
|-----------------------------------|-----------------------------------|--------------|----------------|---------------|-------------|
| Aviation                          | Capital Program                   | \$149.5      | \$38.4         | \$43.4        | \$231.3     |
|                                   | On-Site Employment                | \$1,508.9    | \$515.2        | \$378.8       | \$2,402.9   |
|                                   | Operations & Maintenance Spending | \$245.2      | \$50.8         | \$66.8        | \$362.7     |
|                                   | Visitor Spending                  | \$4,644.9    | \$3,396.9      | \$2,405.9     | \$10,447.8  |
|                                   | Airport Dependent Industries      | \$700.0      | \$282.9        | \$205.5       | \$1,188.4   |
| Dulles Toll Road                  | Capital Program                   | \$11.2       | \$3.5          | \$3.3         | \$18.0      |
|                                   | On-Site Employment                | \$1.5        | \$0.4          | \$0.4         | \$2.4       |
|                                   | Operations & Maintenance Spending | \$18.4       | \$4.3          | \$5.2         | \$27.9      |
| Dulles Corridor Metrorail Project | Capital Program                   | \$379.8      | \$124.8        | \$114.9       | \$619.5     |
|                                   | On-Site Employment                | \$2.5        | \$0.3          | \$0.2         | \$3.0       |
|                                   | Operations & Maintenance Spending | \$37.5       | \$10.4         | \$10.9        | \$58.8      |
| Total Impacts <sup>1</sup>        |                                   | \$7,699.5    | \$4,427.9      | \$3,235.3     | \$15,362.4  |

<sup>1</sup>Totals may not tie to sum of individual values due to rounding.

Source: Airports Authority; WBA Research; DestinationDC; Metropolitan Washington Council of Governments; IMPLAN Group, Inc., Willdan, 2013.

## Employment Geography Map



### Study Area Boundary

Based on the results of the on-airport employment survey and the airport user surveys, the majority of the Airports Authority's economic activities occur within jurisdictions generally comprising the Washington, D.C., VA-MD-WV Metropolitan Statistical Area (MSA). For the purpose of this analysis, only those jurisdictions with direct employment or spending impacts identified by survey and other primary data are included in the study area region created for the IMPLAN modeling.

District of Columbia  
 Virginia:  
 Alexandria City  
 Arlington County  
 Clarke County  
 Fairfax City  
 Fairfax County  
 City of Falls Church  
 Fauquier County  
 Loudoun County  
 Manassas City  
 Manassas Park City  
 Prince William County  
 Maryland:  
 Montgomery County  
 Prince George's County

*The Airports Authority is a major regional employer, drawing workers from Virginia, the District of Columbia, and Maryland. The average annual wage paid to direct on-airport employees in 2012 was nearly \$70,000.*





## 2012 Economic Impact: JOBS – Direct, Indirect and Induced

|                                     | Dulles<br>International | Reagan<br>National | Dulles<br>Toll Road | Dulles Corridor<br>Metrorail Project | Total<br>Impact <sup>1</sup> |
|-------------------------------------|-------------------------|--------------------|---------------------|--------------------------------------|------------------------------|
| <b>VIRGINIA</b>                     |                         |                    |                     |                                      |                              |
| Alexandria City                     | 12,452                  | 7,345              | 22                  | 270                                  | 20,089                       |
| Arlington County                    | 30,316                  | 21,882             | 24                  | 291                                  | 52,513                       |
| Clarke County                       | 2,310                   | 270                | -                   | -                                    | 2,579                        |
| Fairfax County                      | 26,643                  | 6,428              | 228                 | 2,855                                | 36,154                       |
| Fairfax City                        | 10,521                  | 1,806              | 4                   | 46                                   | 12,377                       |
| City of Falls Church                | 3,147                   | 533                | 4                   | 54                                   | 3,738                        |
| Fauquier County                     | 3,341                   | 453                | 9                   | 115                                  | 3,918                        |
| Loudoun County                      | 18,692                  | 2,972              | 62                  | 718                                  | 22,445                       |
| Manassas City                       | 7,799                   | 1,342              | 6                   | 54                                   | 9,200                        |
| Manassas Park City                  | 1,550                   | 251                | 1                   | 15                                   | 1,817                        |
| Prince William County               | 7,256                   | 2,054              | 87                  | 996                                  | 10,392                       |
| All Other Virginia                  | 22,094                  | 3,581              | 112                 | 1,389                                | 27,176                       |
| <b>Total – Virginia</b>             | <b>146,122</b>          | <b>48,916</b>      | <b>557</b>          | <b>6,802</b>                         | <b>202,397</b>               |
| <b>DISTRICT OF COLUMBIA</b>         |                         |                    |                     |                                      |                              |
| <b>Total - District of Columbia</b> | <b>68,345</b>           | <b>54,076</b>      | <b>400</b>          | <b>1,040</b>                         | <b>123,862</b>               |
| <b>MARYLAND</b>                     |                         |                    |                     |                                      |                              |
| Montgomery County                   | 13,771                  | 7,694              | 18                  | 1,659                                | 23,142                       |
| Prince George's County              | 9,399                   | 9,165              | 31                  | 2,763                                | 21,357                       |
| All Other Maryland                  | 10,069                  | 3,879              | 29                  | 2,333                                | 16,309                       |
| <b>Total - Maryland</b>             | <b>33,239</b>           | <b>20,738</b>      | <b>78</b>           | <b>6,755</b>                         | <b>60,808</b>                |
| <b>TOTAL IMPACT – JOBS</b>          |                         |                    |                     |                                      |                              |
|                                     | <b>247,706</b>          | <b>123,730</b>     | <b>1,035</b>        | <b>14,597</b>                        | <b>387,068</b>               |

<sup>1</sup> Job creation estimates calculated by IMPLAN include full-time, part-time, and seasonal workers.

<sup>2</sup> Job creation impacts by jurisdiction include adjustments to reflect location of visitor spending on lodging and location of visitor industry employee residency as estimated by the MWCOG Air Quality Conformity Model data.

Source: Airports Authority; WBA Research; DestinationDC; Metropolitan Washington Council of Governments; IMPLAN Group, Inc.; Willdan, 2013.

## 2012 Economic Impact : Labor Income – Direct, Indirect and Induced (\$ Millions)

|                                     | Dulles<br>International | Reagan<br>National | Dulles<br>Toll Road | Dulles Corridor<br>Metrorail Project | Total<br>Impact <sup>1</sup> |
|-------------------------------------|-------------------------|--------------------|---------------------|--------------------------------------|------------------------------|
| <b>VIRGINIA</b>                     |                         |                    |                     |                                      |                              |
| Alexandria City                     | \$458.4                 | \$275.0            | \$1.0               | \$12.5                               | \$746.9                      |
| Arlington County                    | \$1,100.3               | \$795.3            | \$1.1               | \$13.3                               | \$1,910.1                    |
| Clarke County                       | \$94.4                  | \$10.0             | \$0.0               | \$0.0                                | \$104.4                      |
| Fairfax County                      | \$1,159.3               | \$300.5            | \$10.5              | \$131.8                              | \$1,602.0                    |
| Fairfax City                        | \$379.9                 | \$66.1             | \$0.2               | \$2.1                                | \$448.2                      |
| City of Falls Church                | \$116.1                 | \$19.8             | \$0.2               | \$2.5                                | \$138.6                      |
| Fauquier County                     | \$147.4                 | \$19.9             | \$0.4               | \$5.3                                | \$172.9                      |
| Loudoun Country                     | \$796.3                 | \$128.4            | \$2.9               | \$33.3                               | \$960.8                      |
| Manassas City                       | \$285.8                 | \$50.0             | \$0.3               | \$2.5                                | \$338.5                      |
| Manassas Park City                  | \$56.7                  | \$9.1              | \$0.1               | \$0.7                                | \$66.5                       |
| Prince William County               | \$354.5                 | \$105.4            | \$4.0               | \$45.7                               | \$509.6                      |
| All Other Virginia                  | \$995.7                 | \$165.4            | \$5.2               | \$63.9                               | \$1,230.2                    |
| <b>Total – Virginia</b>             | <b>\$5,944.9</b>        | <b>\$1,944.8</b>   | <b>\$25.7</b>       | <b>\$313.4</b>                       | <b>\$8,228.8</b>             |
| <b>DISTRICT OF COLUMBIA</b>         |                         |                    |                     |                                      |                              |
| <b>Total - District of Columbia</b> | <b>\$2,505.2</b>        | <b>\$1,987.5</b>   | <b>\$18.3</b>       | <b>\$57.6</b>                        | <b>\$4,568.9</b>             |
| <b>MARYLAND</b>                     |                         |                    |                     |                                      |                              |
| Montgomery County                   | \$566.2                 | \$278.7            | \$1.0               | \$76.2                               | \$922.1                      |
| Prince George's County              | \$454.7                 | \$331.1            | \$1.7               | \$126.7                              | \$914.1                      |
| All Other Maryland                  | \$479.1                 | \$141.0            | \$1.5               | \$107.1                              | \$728.7                      |
| <b>Total - Maryland</b>             | <b>\$1,500.0</b>        | <b>\$750.8</b>     | <b>\$4.1</b>        | <b>\$310.0</b>                       | <b>\$2,564.9</b>             |
| <b>TOTAL IMPACT – LABOR INCOME</b>  |                         |                    |                     |                                      |                              |
|                                     | <b>\$9,950.0</b>        | <b>\$4,683.1</b>   | <b>\$48.2</b>       | <b>\$681.3</b>                       | <b>\$15,362.6</b>            |

<sup>1</sup>Total impact includes direct, indirect and induced labor income (wages)

Source: Airports Authority; WBA Research; DestinationDC; Metropolitan Washington Council of Governments; IMPLAN Group, Inc., Willdan, 2013.

## VISITOR INDUSTRY

Visitor spending generated by Dulles International and Reagan National Airports' passengers is a vital component of the Metropolitan Washington area economy.

The Airports Authority served **42.2 million** domestic and international passengers in 2012, an increase of 0.7 percent from the prior year largely due to an increase in international traffic at Dulles and a shift in domestic traffic from Dulles International to Reagan National.

Based on the 2012 airport user survey data reported by WBA Research, visitors departing through Dulles International and Reagan National Airports spent **\$12.53 billion in 2012** on lodging, food, car rentals, entertainment, retail and ground transportation in the study area.

Visitor spending by Dulles International and Reagan National passengers in the study area supported approximately **173,906 direct jobs<sup>1</sup>** and **\$4.40 billion in wages.**

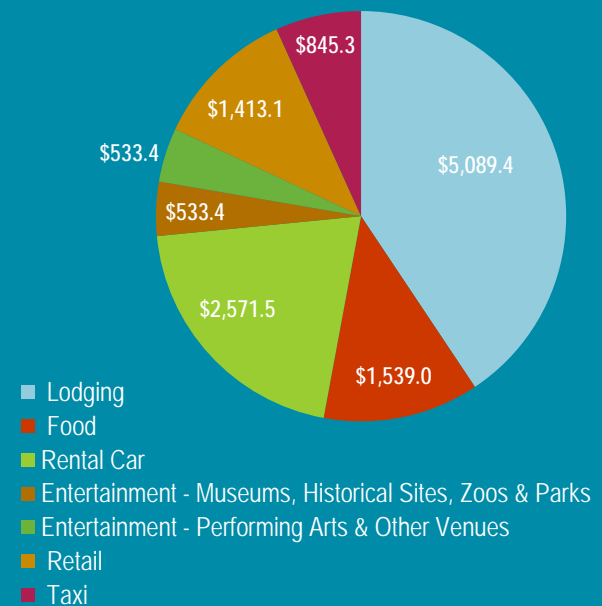
| Visitor Industry Spending (\$ Millions) <sup>2</sup> | Virginia Visitor | D.C. Visitor   | Maryland Visitor | Total           |
|--|------------------|----------------|------------------|-----------------|
| Lodging  | 2,156.7          | 2,249.0        | 683.7            | 5,089.4         |
| Food   | 623.3            | 711.3          | 204.4            | 1,539.0         |
| Rental Car   | 933.4            | 1,275.8        | 362.3            | 2,571.5         |
| Entertainment  | 419.0            | 499.7          | 148.1            | 1,066.8         |
| Retail   | 502.9            | 706.2          | 204.0            | 1,413.1         |
| Taxi   | 381.6            | 353.5          | 110.2            | 845.3           |
| <b>Total</b>   | <b>5,016.9</b>   | <b>5,795.5</b> | <b>1,712.6</b>   | <b>12,525.0</b> |

<sup>1</sup>Based on visitor spending data reported by WBA Research and tourism industry employment generation assumptions reported by Destination DC (1 tourism industry job created for every \$72,368 in visitor spending). Job creation estimates calculated by IMPLAN include full-time, part-time, and seasonal workers.

<sup>2</sup>Allocation of visitors by jurisdiction based on location of lodging. Spending is assumed to be throughout the regional study area. Visitor industry employment impacts are adjusted to reflect location of employee residence as estimated by MWCOC Air Quality Conformity Model data.

Source: MWAA; WBA Research; IMPLAN Group, Inc.; Metropolitan Washington Council of Governments; Willdan, 2013.

**2012 Off-Airport Spending in Metropolitan Washington by Air Visitors Departing via Dulles International & Reagan National Airports (\$Millions)**



***The average international visitor traveling through Dulles International or Reagan National airports spends \$3,300 per trip in the region.***

## TAX IMPACTS

*The Airports Authority's aviation operations at Dulles International and Reagan National airports yielded nearly \$3.2 billion in total taxes, including \$1.2 billion of aviation-related taxes (departure, security and U.S. Customs revenues).*



## TYPE OF TAX

## Tax Revenues (\$ Millions)

|                                       |                  |
|---------------------------------------|------------------|
| State & Local Tax <sup>1</sup>        | \$1,915.5        |
| International Arrival & Departure Tax | \$477.5          |
| Domestic Passenger Taxes              | \$97.6           |
| Federal Security Tax                  | \$105.8          |
| U.S. Customs (Freight)                | \$575.1          |
| <b>Total Tax Revenues</b>             | <b>\$3,171.4</b> |

<sup>1</sup>Includes personal income, real property, sales and corporate earnings taxes as calculated by IMPLAN LLC, Inc.

Source: Airports Authority; Aviation for America; WBA Research; Willdan, 2013.





## 2012 Economic Impact: State & Local Taxes (\$ Millions)

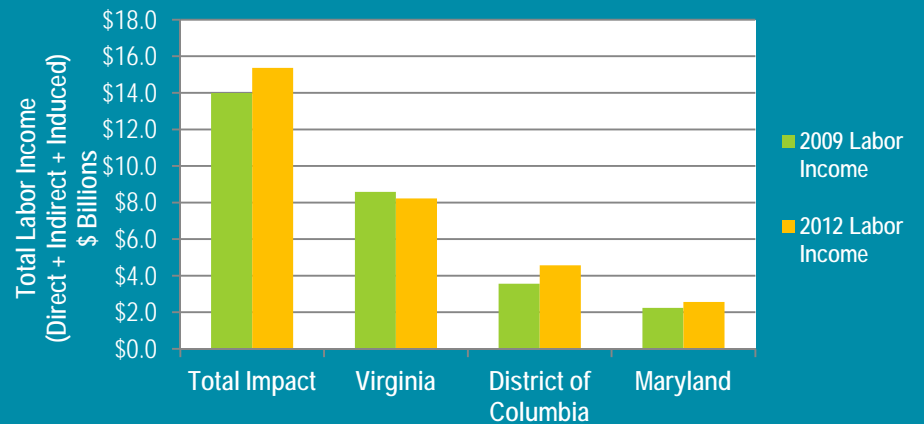
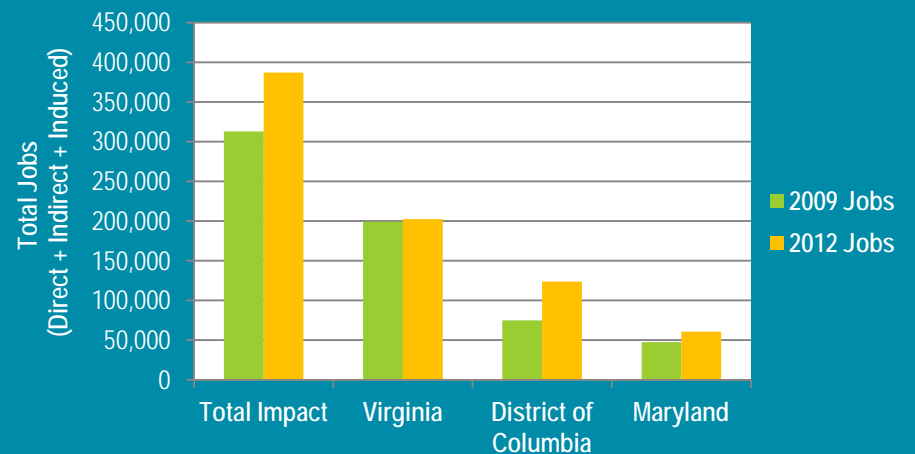
|                             | Dulles<br>International | Reagan<br>National | Dulles<br>Toll Road | Dulles Corridor<br>Metrorail Project | Total<br>Impact <sup>1</sup> |
|-----------------------------|-------------------------|--------------------|---------------------|--------------------------------------|------------------------------|
| <b>VIRGINIA</b>             |                         |                    |                     |                                      |                              |
| Alexandria City             | \$52.2                  | \$30.8             | \$0.1               | \$1.1                                | \$84.3                       |
| Arlington County            | \$127.2                 | \$91.8             | \$0.1               | \$1.2                                | \$220.3                      |
| Clarke County               | \$9.7                   | \$1.1              | \$0.0               | \$0.0                                | \$10.8                       |
| Fairfax County              | \$111.8                 | \$27.0             | \$1.0               | \$12.0                               | \$151.6                      |
| Fairfax City                | \$44.1                  | \$7.6              | \$0.0               | \$0.2                                | \$51.9                       |
| City of Falls Church        | \$13.2                  | \$2.2              | \$0.0               | \$0.2                                | \$15.7                       |
| Fauquier County             | \$14.0                  | \$1.9              | \$0.0               | \$0.5                                | \$16.4                       |
| Loudoun County              | \$78.4                  | \$12.5             | \$0.3               | \$3.0                                | \$94.1                       |
| Manassas City               | \$32.7                  | \$5.6              | \$0.0               | \$0.2                                | \$38.6                       |
| Manassas Park City          | \$6.5                   | \$1.1              | \$0.0               | \$0.1                                | \$7.6                        |
| Prince William County       | \$30.4                  | \$8.6              | \$0.4               | \$4.2                                | \$43.6                       |
| All Other Virginia          | \$92.7                  | \$15.0             | \$0.5               | \$5.8                                | \$114.0                      |
| <b>Subtotal - Virginia</b>  | <b>\$612.9</b>          | <b>\$205.2</b>     | <b>\$2.3</b>        | <b>\$28.5</b>                        | <b>\$848.9</b>               |
| <b>District of Columbia</b> |                         |                    |                     |                                      |                              |
| <b>DISTRICT OF COLUMBIA</b> | <b>\$378.0</b>          | <b>\$299.1</b>     | <b>\$2.2</b>        | <b>\$5.8</b>                         | <b>\$685.1</b>               |
| <b>Maryland</b>             |                         |                    |                     |                                      |                              |
| Montgomery County           | \$86.4                  | \$48.3             | \$0.1               | \$10.4                               | \$145.2                      |
| Prince George's County      | \$59.0                  | \$57.5             | \$0.2               | \$17.3                               | \$134.0                      |
| <b>All Other Maryland</b>   | <b>\$63.2</b>           | <b>\$24.3</b>      | <b>\$0.2</b>        | <b>\$14.6</b>                        | <b>\$102.3</b>               |
| <b>Subtotal - Maryland</b>  | <b>\$208.5</b>          | <b>\$130.1</b>     | <b>\$0.5</b>        | <b>\$42.4</b>                        | <b>\$381.4</b>               |
| <b>Total Impacts</b>        | <b>\$1,199.4</b>        | <b>\$634.4</b>     | <b>\$5.0</b>        | <b>\$76.7</b>                        | <b>\$1,915.5</b>             |

<sup>1</sup>Total impacts include personal income, sales, property and corporate taxes as estimated by the IMPLAN economic impact modeling system.

Source: Airports Authority; WBA Research; DestinationDC; Metropolitan Washington Council of Governments; IMPLAN Group, LLC; Willdan, 2013.

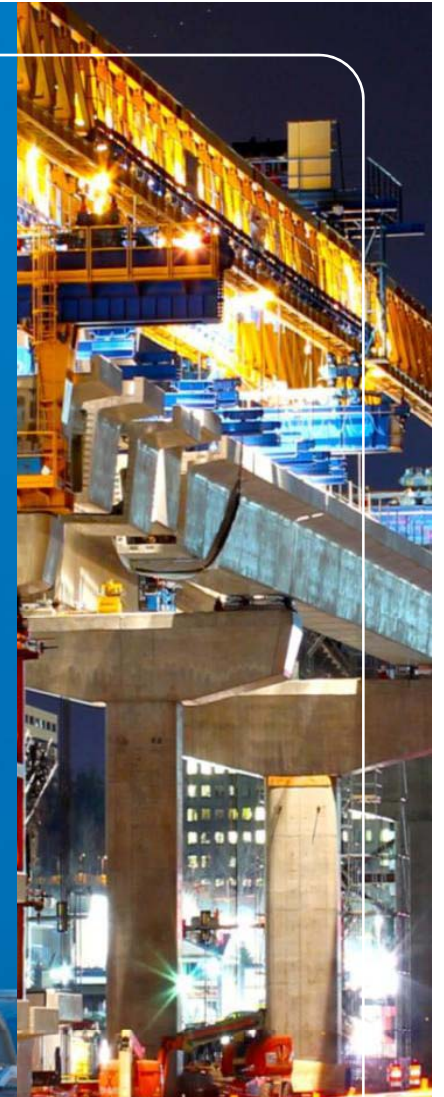
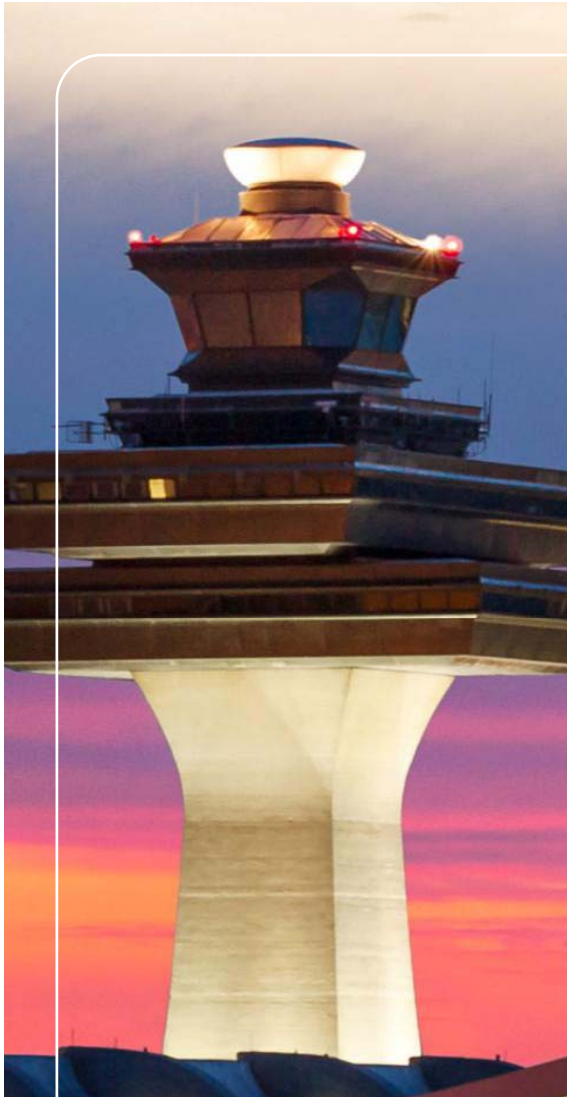
## COMPARISON TO PREVIOUS ECONOMIC IMPACT STUDY (2009)

*Since 2009, the total number of jobs dependent upon the Airports Authority's operations has increased by nearly 80,000, and total labor income has increased by \$327.0 million.<sup>1</sup>*



<sup>1</sup>The 2012 study estimates employment by jurisdiction of residence. Due to the application of differing visitor industry employment generation methodologies and data sources, a direct comparison between the 2009 and 2012 results requires consideration of these qualifiers.





# Technical Report



METROPOLITAN WASHINGTON  
AIRPORTS AUTHORITY

***TECHNICAL REPORT***  
***2012 Economic Impact Study***

Prepared for:

**Metropolitan Washington Airports Authority**

Submitted by:

**Willdan Financial and  
Economic Consulting Services**  
**(Willdan)**

April 23, 2014

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## Introduction

### *Overview of Economic Impact Methodology*

The Metropolitan Washington Airports Authority is an important economic engine of the regional economy. To measure the economic impacts of the Airports Authority's capital investment programs and ongoing operations, the Airports Authority retained the services of Willdan Financial Services, a national public finance and economics consulting firm. To further expand the consulting team's expertise in aviation planning and market research services, Willdan was joined by AirProjects, Inc., Renaissance Planning Group, and WBA Research (the Willdan Team).

The Willdan Team evaluated the full range of economic impacts attributable to the Airports Authority's operations in 2012. These include passenger and freight activity at Dulles International and Reagan National airports, visitor spending in the metropolitan Washington region, operation of the Dulles Toll Road, and the Airports Authority's Capital Program expenditures associated with airport improvements and the Dulles Corridor Metrorail Project construction.

This study provides a comprehensive analysis of the regional impacts of the Airports Authority including the economic benefits of toll operations and new rail construction of the Metrorail system extension to Dulles International Airport.

The study evaluated both the direct, indirect and induced multiplier effects generated by jobs, labor income and business revenue

(spending) attributable to the Airports Authority's facilities, operations and capital program expenditures. The total economic impact of the Airports Authority is estimated using input-output modeling techniques and the IMPLAN modeling system<sup>1</sup>. Input-output models measure economic impacts by estimating linear relationships between the value of labor, capital and "final demand" (or output). These values serve as the basis for estimating the number of jobs created by various economic sectors. The economic impact estimates are intended to enable public and private stakeholders to make informed decisions on policy, management and investment.

### *Overview of Direct Economic Activities*

The 2012 Economic Impact Study is based on evaluation of the Metropolitan Washington Airports Authority's direct operations of the following functional areas:

- Dulles International Airport;
- Reagan National Airport;
- Other aviation/airport dependent industries (freight);
- Dulles Toll Road; and
- Dulles Corridor Metrorail Project.

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<sup>1</sup> IMPLAN (IMpacts for PLANing) Version 3.1.1001.12, copyright 2013, IMPLAN Group, LLC, [www.IMPLAN.com](http://www.IMPLAN.com).



The economic impacts are reported for jurisdictions directly impacted by the Airports Authority's ongoing operations and capital investments in the project study area defined primarily by the cities and counties in the Washington metropolitan area.

The study area boundary is based on the results of the on-airport direct employment survey and the airport user surveys. The majority of the Airports Authority's economic activities occur within jurisdictions generally comprising the Washington, D.C., VA-MD-WV Metropolitan Statistical Area (MSA). For the purpose of this analysis, only those jurisdictions with direct employment or spending impacts identified by survey and other primary data are included in the study area region created for the IMPLAN modeling. Table 1 provides a summary of the study area boundaries.

**Table 1: Economic Impact Study Area Jurisdictions**

| Virginia              | District of Columbia | Maryland  |
|-----------------------|----------------------|---|
| Alexandria City       | Washington, DC       | Montgomery County<br>Prince George's County<br>All Other Maryland |
| Arlington County      |                      |   |
| Clarke County         |                      |   |
| Fairfax City          |                      |   |
| Fairfax County        |                      |   |
| City of Falls Church  |                      |   |
| Fauquier County       |                      |   |
| Loudoun County        |                      |   |
| Manassas City         |                      |   |
| Manassas Park City    |                      |   |
| Prince William County |                      |   |
| All Other Virginia    |                      |   |

Source: Airports Authority WBA Research; Renaissance Planning Group; Willdan, 2013.

The following section provides the detailed inputs and outputs in support of the study's key findings.

The total economic impacts of the Airports Authority's facilities and operations are generated by:

- Capital program spending;
- Aviation operations and maintenance program spending (materials, goods and services);
- On-airport employment (direct employment by the Airports Authority and airport tenants);
- Visitor industry spending; and
- Airport-dependent industry impacts (freight).

The following discussion provides an overview of the Airports Authority's direct economic activities related to these impacts.

### Capital Construction Program Spending

In 2012, the Airports Authority invested approximately \$563.3 million in Capital Construction Program activities for on-airport aviation facilities, the Dulles Toll Road and Dulles Corridor Metrorail Project construction (Table 2).

**Table 2: Airports Authority Capital Program Spending, 2012**

| Capital Program Spending          | Total<br>(\$ Millions) |
|-----------------------------------|------------------------|
| Aviation (On-Airport Operations)  | \$113.1                |
| Dulles Toll Road                  | \$11.1                 |
| Dulles Corridor Metrorail Project | \$439.1                |
| <b>Total</b>                      | <b>\$563.3</b>         |

Source: Airports Authority; Willdan, 2013.

## Operations and Maintenance Program Spending

Employment is generated by the Airports Authority's operations and maintenance program spending. These expenditures include functions that are required to run and maintain the airport facilities. According to vendor data supplied by the Airports Authority, 2012 non-payroll operations and maintenance expenditures paid to vendors located within the region totaled \$229.4 million (Table 3).

**Table 3: Airports Authority Operations & Maintenance Spending, 2012**

| Annual Ongoing Operations & Maintenance Spending | Total<br>(\$ Millions) |
|--|------------------------|
| Aviation (On-Airport Operations)                 | \$179.2                |
| Dulles Toll Road                                 | \$16.5                 |
| Dulles Corridor Metrorail Project                | \$33.7                 |
| <b>Total</b>                                     | <b>\$229.4</b>         |

Source: Airports Authority; Willdan, 2013.

## Airports Authority Employment

The Airports Authority operates Ronald Reagan Washington National and Washington Dulles International airports providing domestic and international air service for the Washington metropolitan area. The organization consists of more than 1,500 employees<sup>2</sup> in a structure that includes central administration, airports management and operations, police and fire departments, Dulles Toll Road and Dulles Corridor Metrorail Project.

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<sup>2</sup> Total employment estimate includes 1,459 Airports Authority and Corporate Office Building employees, 30 Dulles Toll Road employees and 18 Dulles Corridor Metrorail Project employees as of December, 2012.

A diverse array of labor is directly employed at the airports for its freight and passenger operations. These include positions in terminal and airline operations and include the following subsectors:

- Passenger airlines, including reservation and ticketing agents, baggage handlers, administrative personnel, equipment maintenance, flight crew, etc.;
- Freight airlines including flight crew;
- General aviation and aviation services;
- Airport administration;
- Catering;
- Flight supplies/fixed base operators;
- Facility maintenance;
- Sky caps;
- Security;
- Retail tenants (i.e., newsstands, retail shops, and food concessions);
- Federal government agencies (i.e., Federal Aviation Administration, Transportation Security Agency and U.S. Customs and Border Patrol);
- Ground transportation (i.e., buses, shuttles); and
- Parking and miscellaneous (i.e. airport hotel).

In 2012, Dulles International and Reagan National had a total of 27,537 direct on-airport full- and part-time employees, including

airport tenants, airlines, businesses and the Airports Authority (Table 4).

**Table 4: Summary of Direct Employment: Aviation, Dulles Toll Road & Dulles Corridor Metrorail Project Operations**

| On-Site Employees                             | Dulles International | Reagan National | Total         |
|---|----------------------|-----------------|---------------|
| <b>AIRPORTS AUTHORITY AVIATION ENTERPRISE</b> |                      |                 |               |
| <b>Consolidated Functions</b>                 |                      |                 |               |
| Full-time Jobs                                | 624                  | 746             | 1,370         |
| Part-time Jobs                                | 75                   | 14              | 89            |
| <b>Subtotal</b>                               | <b>699</b>           | <b>760</b>      | <b>1,459</b>  |
| <b>Aviation</b>                               |                      |                 |               |
| Full-time Jobs                                | 15,345               | 4,545           | 19,890        |
| Part-time Jobs                                | 3,327                | 2,861           | 6,188         |
| <b>Subtotal</b>                               | <b>18,672</b>        | <b>7,406</b>    | <b>26,078</b> |
| <b>Total</b>                                  | <b>19,371</b>        | <b>8,166</b>    | <b>27,537</b> |

Source: Airports Authority; Willdan, 2013.

Together, these investments in capital program spending, operations and maintenance spending and direct on-airport employment serve as primary inputs for the calculation of the Airports Authority's economic contribution to the Washington metropolitan area. The following technical report provides the detailed economic impacts results for the Airports Authority's aviation, Dulles Toll Road and Dulles Corridor Metrorail Project functions in 2012.

## Airports Authority's Aviation Impacts

### Direct On-Airport Employment

Based on 2012 population reports for Dulles International and Reagan National, the number of full-time and part-time employees at

other on-airport businesses and agencies totaled 18,672 for Dulles International, 7,406 for Reagan National in addition to 1,459 Airports Authority employees (including full-time and part-time employees as well as consolidated functions serving both airports). Including Airports Authority employees, Dulles International created 19,371 jobs and Reagan National created 8,166 jobs (27,537 total jobs).

Airlines and aviation supporting services are the single largest employers at the airports, accounting for 39.1 percent of employment at Dulles International and 24.7 percent of employment at Reagan National. Retail and concessionaire employers account for 18.3 percent of employment at Dulles International and 12 percent of employment at Reagan National (Table 5).

The federal government, including the Transportation Security Administration (TSA), the Federal Aviation Administration (FAA) and the Customs and Border Patrol (CBP), is a large on-airport employer accounting for 11.3 percent and 15.0 percent of employment at Dulles International and Reagan National airports, respectively. The number of flight crew based at Dulles International totaled 4,538, while 2,456 crew members were based at Reagan National.



Table 5: Airports Authority Aviation Impacts – Direct On-Site Employees by Type

| Direct On-Site Employment by Type, 2012 | Dulles International |              |               |             | Reagan National |              |               |               | TOTAL         |
|---|----------------------|--------------|---------------|-------------|-----------------|--------------|---------------|---------------|---------------|
|   | FT                   | PT           | Total         | % of Total  | FT              | PT           | Total         | % of Total    |               |
| Airlines                                | 2,615                | 665          | <b>3,280</b>  | 16.9%       | 1,019           | 429          | <b>1,448</b>  | 17.7%         | <b>4,728</b>  |
| Aviation supporting activities          | 3,428                | 883          | <b>4,311</b>  | 22.3%       | 466             | 134          | <b>600</b>    | 7.3%          | <b>4,911</b>  |
| Retail and Concessionaries              | 2,581                | 981          | <b>3,562</b>  | 18.4%       | 792             | 198          | <b>990</b>    | 12.1%         | <b>4,552</b>  |
| Rental Car                              | 1,149                | 60           | <b>1,209</b>  | 6.2%        | 185             | 757          | <b>942</b>    | 11.5%         | <b>2,151</b>  |
| Federal Government                      | 2,199                | 0            | <b>2,199</b>  | 11.4%       | 913             | 326          | <b>1,239</b>  | 15.2%         | <b>3,438</b>  |
| Airports Authority                      | 624                  | 75           | <b>699</b>    | 3.6%        | 746             | 14           | <b>760</b>    | 9.3%          | <b>1,459</b>  |
| Other /1                                | 3,373                | 738          | <b>4,111</b>  | 21.2%       | 1,170           | 1,017        | <b>2,187</b>  | 26.8%         | <b>6,298</b>  |
| <b>Subtotal (Excluding Flight Crew)</b> | <b>15,969</b>        | <b>3,402</b> | <b>19,371</b> | <b>100%</b> | <b>5,291</b>    | <b>2,875</b> | <b>8,166</b>  | <b>100.0%</b> | <b>27,537</b> |
| Flight Crew                             | 4,538                |              | <b>4,538</b>  |             | 2,456           |              | <b>2,456</b>  |               | <b>6,994</b>  |
| <b>Total (Including Flight Crew)</b>    |                      |              | <b>23,909</b> |             |                 |              | <b>10,622</b> |               | <b>34,531</b> |

1/ Other includes Maintenance & Construction, Security and Other Public Agencies

Source: Airports Authority 2012 Population Reports; Willdan, 2013.

The Airports Authority's direct employment activity supports vendors and their employees, generating substantial indirect and induced economic activity throughout the region as these wages are spent back into the economy.

The payroll of Airports Authority employees dedicated to all functions (including Toll and Metrorail employees) residing in the region totaled \$206.6 million, allocated as: 60 percent to Virginia residents; 5 percent to District of Columbia residents; and 30 percent to Maryland residents. The balance of Airports Authority's total payroll, or \$11.3 million, was paid to employees commuting to work from outside of the study area (Table 6).

**Table 6: Airports Authority Payroll by Employee Jurisdiction of Residence, 2012**

| Airports Authority Employees | Total Annual Payroll (\$ Millions) | Percent of Total |
|------------------------------|------------------------------------|------------------|
| Virginia Residents           | \$123.1                            | 60%              |
| DC Residents                 | \$9.6                              | 5%               |
| Maryland Residents           | \$62.7                             | 30%              |
| All Other Places             | \$11.3                             | 5%               |
| <b>Total Payroll</b>         | <b>\$206.6</b>                     | <b>100%</b>      |

Source: Airports Authority; Willdan, 2013.

In addition to payroll data for direct Airports Authority employees, labor income estimates for all other on-airport employees was calculated by IMPLAN based on the region's average labor income per employee for the relevant industries (and verified by supplemental airport tenant survey data reported by WBA Research). Labor income paid by the other direct on-airport employers was estimated at \$1.13 billion in 2012. This does not

include the payroll of flight crews based at Dulles International or Reagan National (treated as leakage outside of the study area).

Employees residing within Virginia, the District of Columbia and Maryland spend part of their income locally<sup>3</sup> at a variety of businesses including retail stores, transportation, health care, education providers and entertainment venues. This spending supports additional jobs in the region. The total combined jobs and labor income generated from spending by the Airports Authority and other on-airport employers in the study area are displayed in Table 7.

### Economic Impacts – Direct Employment: Dulles International Airport

In addition to the 19,371 on-site jobs at Dulles International, the purchase of goods and services by the Airports Authority and other Dulles International employers supported an additional 7,512 indirect jobs in the Metropolitan Washington region. Household spending by Dulles International employees and employees of indirectly affected businesses operating in the region supported another 7,609 jobs in the region. The total number of jobs in the study area supported by operations of Dulles International facilities is 34,492 with an associated \$1.719 billion in labor income (Table 7).

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<sup>3</sup> The IMPLAN modeling system adjusts total labor income to reflect consumer expenditures within the study area (accounting for "leakage") based on US Consumer Expenditure Data, Journey to Work data and other factors.

### **Economic Impacts – Direct Employment: Reagan National Airport**

The Airports Authority and associated Reagan National employers supported 8,166 direct on-airport jobs (including the Airports Authority's Consolidated Functions) and 3,167 indirect jobs. Household spending by Reagan National employees and employees of indirectly affected businesses operating in the region supported another 3,207 jobs in the region. The total impact of Reagan National operations in the study area economy was 14,540 jobs and \$771.7 million in labor income (Table 7).

### **Economic Impacts – Direct Employment: Dulles International + Reagan National Airports**

Taking into account the multiplier effect, the total impact of operating both Dulles International and Reagan National airports (including the Airports Authority's consolidated functions) was 49,032 jobs and \$2.491 billion in labor income (Table 7).



Table 7: Economic Impacts – Direct On-Airport Employment, 2012

| 2012 ECONOMIC IMPACTS – DIRECT ON-AIRPORT EMPLOYMENT |                      |                 |               |               |                            |                      |                 |                  |  |
|--|----------------------|-----------------|---------------|---------------|----------------------------|----------------------|-----------------|------------------|--|
| Jobs   |                      |                 |               |               | Labor Income (\$ Millions) |                      |                 |                  |  |
| Impact Type  | Dulles International | Reagan National | Total         | TOTAL IMPACTS | Impact Type                | Dulles International | Reagan National | Total            |  |
| Direct   | 19,371               | 8,166           | 27,537        |               | Direct                     | \$1,079.7            | \$484.6         | \$1,564.2        |  |
| Indirect   | 7,512                | 3,167           | 10,679        |               | Indirect                   | \$368.7              | \$165.5         | \$534.1          |  |
| Induced  | 7,609                | 3,207           | 10,816        |               | Induced                    | \$271.0              | \$121.6         | \$392.6          |  |
| <b>Total</b>   | <b>34,492</b>        | <b>14,540</b>   | <b>49,032</b> |               | <b>Total</b>               | <b>\$1,719.3</b>     | <b>\$771.7</b>  | <b>\$2,491.0</b> |  |
| VIRGINIA   |                      |                 |               |               |                            |                      |                 |                  |  |
| Direct   | 17,238               | 4,971           | 22,209        |               | Direct                     | \$960.7              | \$294.7         | \$1,255.5        |  |
| Indirect   | 6,685                | 1,928           | 8,613         |               | Indirect                   | \$328.0              | \$100.6         | \$428.7          |  |
| Induced  | 6,771                | 1,952           | 8,723         |               | Induced                    | \$241.2              | \$74.0          | \$315.1          |  |
| <b>Total</b>   | <b>30,694</b>        | <b>8,851</b>    | <b>39,545</b> |               | <b>Total</b>               | <b>\$1,529.9</b>     | <b>\$469.4</b>  | <b>\$1,999.3</b> |  |
| DISTRICT OF COLUMBIA                                 |                      |                 |               |               |                            |                      |                 |                  |  |
| Direct   | 568                  | 802             | 1,370         |               | Direct                     | \$31.5               | \$47.1          | \$78.5           |  |
| Indirect   | 220                  | 311             | 531           |               | Indirect                   | \$10.7               | \$16.1          | \$26.8           |  |
| Induced  | 223                  | 315             | 538           |               | Induced                    | \$7.9                | \$11.8          | \$19.7           |  |
| <b>Total</b>   | <b>1,012</b>         | <b>1,427</b>    | <b>2,439</b>  |               | <b>Total</b>               | <b>\$50.1</b>        | <b>\$75.0</b>   | <b>\$125.1</b>   |  |
| MARYLAND   |                      |                 |               |               |                            |                      |                 |                  |  |
| Direct   | 1,565                | 2,394           | 3,958         |               | Direct                     | \$87.5               | \$142.7         | \$230.2          |  |
| Indirect   | 607                  | 928             | 1,535         |               | Indirect                   | \$29.9               | \$48.7          | \$78.6           |  |
| Induced  | 615                  | 940             | 1,555         |               | Induced                    | \$22.0               | \$35.8          | \$57.8           |  |
| <b>Total</b>   | <b>2,786</b>         | <b>4,262</b>    | <b>7,048</b>  |               | <b>Total</b>               | <b>\$139.3</b>       | <b>\$227.3</b>  | <b>\$366.6</b>   |  |

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

### Aviation Capital Program Spending Impacts

Capital program spending consists of expenditures on new construction of facilities and structures and spending for rehabilitating existing structures. The Airports Authority expended \$72.8 million at Dulles International in 2012 on the construction of new facilities and structures and rehabilitating existing structures. At

Reagan National, net capital spending on construction, rehabilitation of structures, architectural and engineering services and other equipment in 2012 totaled \$40.3 million. The Airports Authority's combined investment activities generated a total of 4,008 direct, indirect and induced jobs and \$231.3 million in associated labor income (Table 8).

Table 8: Economic Impacts – Airports Authority's Capital Program Spending, 2012

| 2012 ECONOMIC IMPACTS – AIRPORTS AUTHORITY'S CAPITAL PROGRAM SPENDING |                      |                 |              |                            |              |                      |                 |                |
|---|----------------------|-----------------|--------------|----------------------------|--------------|----------------------|-----------------|----------------|
| Jobs  |                      |                 |              | Labor Income (\$ Millions) |              |                      |                 |                |
| Impact Type   | Dulles International | Reagan National | Total        | TOTAL IMPACTS              | Impact Type  | Dulles International | Reagan National | Total          |
| Direct  | 1,620                | 896             | 2,516        |                            | Direct       | \$95.4               | \$54.1          | \$149.5        |
| Indirect  | 372                  | 206             | 578          |                            | Indirect     | \$24.6               | \$13.8          | \$38.4         |
| Induced   | 589                  | 326             | 914          |                            | Induced      | \$27.7               | \$15.7          | \$43.4         |
| <b>Total</b>  | <b>2,580</b>         | <b>1,427</b>    | <b>4,008</b> |                            | <b>Total</b> | <b>\$147.7</b>       | <b>\$83.5</b>   | <b>\$231.3</b> |
| VIRGINIA  |                      |                 |              |                            |              |                      |                 |                |
| Direct  | 850                  | 368             | 1,217        |                            | Direct       | \$44.9               | \$19.4          | \$64.3         |
| Indirect  | 195                  | 84              | 280          |                            | Indirect     | \$12.1               | \$5.2           | \$17.3         |
| Induced   | 309                  | 134             | 442          |                            | Induced      | \$13.0               | \$5.6           | \$18.6         |
| <b>Total</b>  | <b>1,353</b>         | <b>586</b>      | <b>1,940</b> |                            | <b>Total</b> | <b>\$70.0</b>        | <b>\$30.3</b>   | <b>\$100.3</b> |
| DISTRICT OF COLUMBIA  |                      |                 |              |                            |              |                      |                 |                |
| Direct  | 395                  | 358             | 753          |                            | Direct       | \$25.9               | \$23.5          | \$49.4         |
| Indirect  | 91                   | 82              | 173          |                            | Indirect     | \$6.3                | \$5.7           | \$12.1         |
| Induced   | 144                  | 130             | 274          |                            | Induced      | \$7.5                | \$6.8           | \$14.2         |
| <b>Total</b>  | <b>630</b>           | <b>570</b>      | <b>1,200</b> |                            | <b>Total</b> | <b>\$39.8</b>        | <b>\$36.0</b>   | <b>\$75.7</b>  |
| MARYLAND  |                      |                 |              |                            |              |                      |                 |                |
| Direct  | 375                  | 170             | 545          |                            | Direct       | \$24.6               | \$11.2          | \$35.8         |
| Indirect  | 86                   | 39              | 125          |                            | Indirect     | \$6.2                | \$2.8           | \$9.1          |
| Induced   | 136                  | 62              | 198          |                            | Induced      | \$7.2                | \$3.3           | \$10.5         |
| <b>Total</b>  | <b>597</b>           | <b>272</b>      | <b>869</b>   |                            | <b>Total</b> | <b>\$38.0</b>        | <b>\$17.3</b>   | <b>\$55.3</b>  |

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

### **Aviation Operations & Maintenance Spending Impacts**

Operations and maintenance spending consist of ongoing annual expenditures for goods and services for all on-airport and associated facilities and structures.

Based on vendor zip code data, the Airports Authority paid businesses located within the study area a total of \$179.2 million for maintenance, goods and services<sup>4</sup> (Table 9).

At the disaggregated operating level, Dulles International spent \$65.9 million in 2012 on the maintenance of facilities and structures; Reagan National spent \$38.0 million; and the Airports Authority's Consolidated Functions spent \$75.3 million.

**Table 9: Aviation Operations & Maintenance Spending, 2012 (\$ Millions)**

| Airports Authority Function | Maintenance Expenditures | Goods Expenditures | Services Expenditures | Total Expenditures |
|-----------------------------|--------------------------|--------------------|-----------------------|--------------------|
| Dulles International        | \$12.9                   | \$1.3              | \$51.7                | \$65.9             |
| Reagan National             | \$6.3                    | \$4.7              | \$27.0                | \$38.0             |
| Consolidated Functions      | \$0.3                    | \$2.4              | \$72.6                | \$75.3             |
| <b>Total</b>                | <b>\$19.6</b>            | <b>\$8.4</b>       | <b>\$151.3</b>        | <b>\$179.2</b>     |

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

In 2012, the Airports Authority's combined operations and maintenance spending generated a total of 6,426 direct, indirect and induced jobs and \$362.7 million in associated labor income (Table 10).

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<sup>4</sup> Payments to vendors located outside the study area are excluded from the economic impact calculations.



Table 10: Economic Impacts – Airports Authority Operations & Maintenance Spending

| TOTAL 2012 ECONOMIC IMPACTS – AIRPORTS AUTHORITY OPERATIONS & MAINTENANCE SPENDING |                      |                 |       |                            |             |                      |                 |         |
|--|----------------------|-----------------|-------|----------------------------|-------------|----------------------|-----------------|---------|
| Jobs   |                      |                 |       | Labor Income (\$ Millions) |             |                      |                 |         |
| Impact Type  | Dulles International | Reagan National | Total | TOTAL IMPACTS              | Impact Type | Dulles International | Reagan National | Total   |
| Direct   | 2,426                | 1,772           | 4,198 |                            | Direct      | \$141.7              | \$103.5         | \$245.2 |
| Indirect   | 468                  | 342             | 810   |                            | Indirect    | \$29.3               | \$21.4          | \$50.8  |
| Induced  | 819                  | 598             | 1,418 |                            | Induced     | \$38.6               | \$28.2          | \$66.8  |
| Total  | 3,714                | 2,712           | 6,426 |                            | Total       | \$209.7              | \$153.1         | \$362.7 |
| VIRGINIA   |                      |                 |       |                            |             |                      |                 |         |
| Direct   | 1,103                | 1,099           | 2,202 |                            | Direct      | \$64.4               | \$64.2          | \$128.6 |
| Indirect   | 213                  | 212             | 425   |                            | Indirect    | \$13.3               | \$13.3          | \$26.6  |
| Induced  | 373                  | 371             | 744   |                            | Induced     | \$17.5               | \$17.5          | \$35.0  |
| Total  | 1,689                | 1,682           | 3,370 |                            | Total       | \$95.3               | \$94.9          | \$190.3 |
| DISTRICT OF COLUMBIA   |                      |                 |       |                            |             |                      |                 |         |
| Direct   | 513                  | 511             | 1,025 |                            | Direct      | \$30.0               | \$29.9          | \$59.9  |
| Indirect   | 99                   | 99              | 198   |                            | Indirect    | \$6.2                | \$6.2           | \$12.4  |
| Induced  | 173                  | 173             | 346   |                            | Induced     | \$8.2                | \$8.1           | \$16.3  |
| Total  | 786                  | 783             | 1,569 |                            | Total       | \$44.4               | \$44.2          | \$88.6  |
| MARYLAND   |                      |                 |       |                            |             |                      |                 |         |
| Direct   | 487                  | 485             | 971   |                            | Direct      | \$28.4               | \$28.3          | \$56.7  |
| Indirect   | 94                   | 93              | 187   |                            | Indirect    | \$5.9                | \$5.9           | \$11.7  |
| Induced  | 164                  | 164             | 328   |                            | Induced     | \$7.7                | \$7.7           | \$15.4  |
| Total  | 745                  | 742             | 1,487 |                            | Total       | \$42.0               | \$41.9          | \$83.9  |

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

## Visitor Spending Impacts

Visitor spending by Dulles International and Reagan National airports' passengers generates significant employment activity in the Washington metropolitan area's economy.

The Airports Authority served 42.2 million domestic and international passengers in 2012, an increase of 0.7 percent from 2011. Based on the 2012 airport user survey data reported by WBA Research, visitors departing through Dulles International and Reagan National airports spent \$12.52 billion on lodging, food, car rentals, entertainment, retail and ground transportation in the study area (Table 11).

Based on IMPLAN data (adjusted to reflect local employment generation data reported by Destination DC<sup>5</sup>), passengers traveling through Dulles International and Reagan National airports supported approximately 173,073 direct visitor industry jobs in the study area in 2012 (Table 12).

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<sup>5</sup> To allow for rational comparison to 2009 visitor industry employment trends, the 2012 study adjusted employment generation assumptions generated by IMPLAN. According to 2012 Destination DC Annual Visitor Statistics, \$72,368 in annual visitor spending created one visitor industry sector job. The 2009 study assumed \$56,429 of visitor spending per job; 2012 IMPLAN data calculated approximately \$110,000 of visitor spending per job. The detailed calculations and assumptions supporting the economic impacts of visitor spending are located in the Technical Appendix to this report.

Table 11: Visitor Spending by Location of Visitor Lodging, 2012

| Visitor Spending Category | Virginia Visitors | District of Columbia Visitors | Maryland Visitors | Total /1          |
|---------------------------|-------------------|-------------------------------|-------------------|-------------------|
| Lodging                   | \$2,156.7         | \$2,249.0                     | \$683.7           | \$5,089.4         |
| Food                      | \$623.3           | \$711.3                       | \$204.4           | \$1,539.0         |
| Rental Car                | \$933.4           | \$1,275.8                     | \$362.3           | \$2,571.5         |
| Entertainment             | \$419.0           | \$499.7                       | \$148.1           | \$1,066.8         |
| Retail                    | \$502.9           | \$706.2                       | \$204.0           | \$1,413.1         |
| Taxi                      | \$381.6           | \$353.5                       | \$110.2           | \$845.3           |
| <b>Total</b>              | <b>\$5,016.9</b>  | <b>\$5,795.5</b>              | <b>\$1,712.6</b>  | <b>\$12,525.0</b> |

1/ Allocation of visitors by jurisdiction is based on the location of airport passenger lodging according to the Metropolitan Washington Airports Authority Airport User Survey 2012 reported by WBA Research. Visitor industry jobs created by visitor spending are allocated throughout the study area to reflect location of employee residence as estimated by the Metropolitan Washington Council of Governments Air Quality Conformity Model data.

Source: WBA Research; Destination DC; Metropolitan Washington Council of Governments; IMPLAN Group, LLC; Willdan, 2013.

Together, these visitor industry jobs generated a total of 292,478 direct, indirect and induced jobs and \$10.5 billion in associated labor income in 2012 in the study area (Table 12).

Table 12: Economic Impacts – Visitor Spending, 2012

| 2012 ECONOMIC IMPACTS – VISITOR SPENDING |                      |                 |                |                            |              |                      |                  |                   |
|--|----------------------|-----------------|----------------|----------------------------|--------------|----------------------|------------------|-------------------|
| Jobs                                     |                      |                 |                | Labor Income (\$ Millions) |              |                      |                  |                   |
| Impact Type                              | Dulles International | Reagan National | Total          | TOTAL IMPACTS              | Impact Type  | Dulles International | Reagan National  | Total             |
| Direct                                   | 111,202              | 61,871          | 173,073        |                            | Direct       | \$2,984.4            | \$1,660.5        | \$4,644.9         |
| Indirect                                 | 40,580               | 22,578          | 63,159         |                            | Indirect     | \$2,182.6            | \$1,214.4        | \$3,396.9         |
| Induced                                  | 36,139               | 20,107          | 56,247         |                            | Induced      | \$1,545.8            | \$860.1          | \$2,405.9         |
| <b>Total</b>                             | <b>187,922</b>       | <b>104,557</b>  | <b>292,478</b> |                            | <b>Total</b> | <b>\$6,712.9</b>     | <b>\$3,734.9</b> | <b>\$10,447.8</b> |
| VIRGINIA                                 |                      |                 |                |                            |              |                      |                  |                   |
| Direct                                   | 59,945               | 22,366          | 82,311         |                            | Direct       | \$1,608.8            | \$600.3          | \$2,209.1         |
| Indirect                                 | 21,875               | 8,162           | 30,038         |                            | Indirect     | \$1,176.5            | \$439.0          | \$1,615.5         |
| Induced                                  | 19,481               | 7,269           | 26,750         |                            | Induced      | \$833.3              | \$310.9          | \$1,144.2         |
| <b>Total</b>                             | <b>101,301</b>       | <b>37,797</b>   | <b>139,099</b> |                            | <b>Total</b> | <b>\$3,618.7</b>     | <b>\$1,350.2</b> | <b>\$4,968.8</b>  |
| DISTRICT OF COLUMBIA                     |                      |                 |                |                            |              |                      |                  |                   |
| Direct                                   | 38,660               | 30,354          | 69,014         |                            | Direct       | \$1,037.6            | \$814.7          | \$1,852.2         |
| Indirect                                 | 14,108               | 11,077          | 25,185         |                            | Indirect     | \$758.8              | \$595.8          | \$1,354.6         |
| Induced                                  | 12,564               | 9,865           | 22,429         |                            | Induced      | \$537.4              | \$422.0          | \$959.4           |
| <b>Total</b>                             | <b>65,332</b>        | <b>51,297</b>   | <b>116,629</b> |                            | <b>Total</b> | <b>\$2,333.8</b>     | <b>\$1,832.4</b> | <b>\$4,166.2</b>  |
| MARYLAND                                 |                      |                 |                |                            |              |                      |                  |                   |
| Direct                                   | 12,597               | 9,150           | 21,747         |                            | Direct       | \$338.1              | \$245.6          | \$583.6           |
| Indirect                                 | 4,597                | 3,339           | 7,936          |                            | Indirect     | \$247.2              | \$179.6          | \$426.8           |
| Induced                                  | 4,094                | 2,974           | 7,068          |                            | Induced      | \$175.1              | \$127.2          | \$302.3           |
| <b>Total</b>                             | <b>21,288</b>        | <b>15,463</b>   | <b>36,751</b>  |                            | <b>Total</b> | <b>\$760.4</b>       | <b>\$552.3</b>   | <b>\$1,312.8</b>  |

Source: Airports Authority; WBA Research; DestinationDC; Renaissance Planning Group; Metropolitan Washington Council of Governments; IMPLAN Group, LLC; Willdan, 2013.



### Airport Dependent Industries (Freight) Impacts

“Airport-dependent industries” are defined as manufacturers and agricultural industries for which having access to air transport for the export of goods can make a critical difference in their ability to compete in the global marketplace. Because of the high-value time-sensitive nature of their shipments, these industries find it useful to locate near airports and depend heavily on the aviation services to operate. Many of these industries or firms might not exist in the region but for the presence of the airport.

Overall, the national projections being reported by the FAA show an upward trend moving forward. The FAA is estimating an increase in total projected system growth of about 2.8 percent per year through 2033.

As illustrated in Figure 1 and Table 13, growth in domestic and international air freight and mail shipments at Dulles International has exhibited volatility since 2001. Since 2009, the airport has seen a decline in air freight and mail shipments with 2012 ending down 8.1 percent. In 2012, the FAA reported domestic cargo declining 0.75 percent.

In total, combined mail and freight shipments at Reagan National increased 2.6 percent from 2009 through 2012, indicating stabilization after a substantial decrease during the national recession in 2007 and 2008 ( Figure 2 and Table 13).

Figure 1: Domestic & International Freight Volume – Dulles International

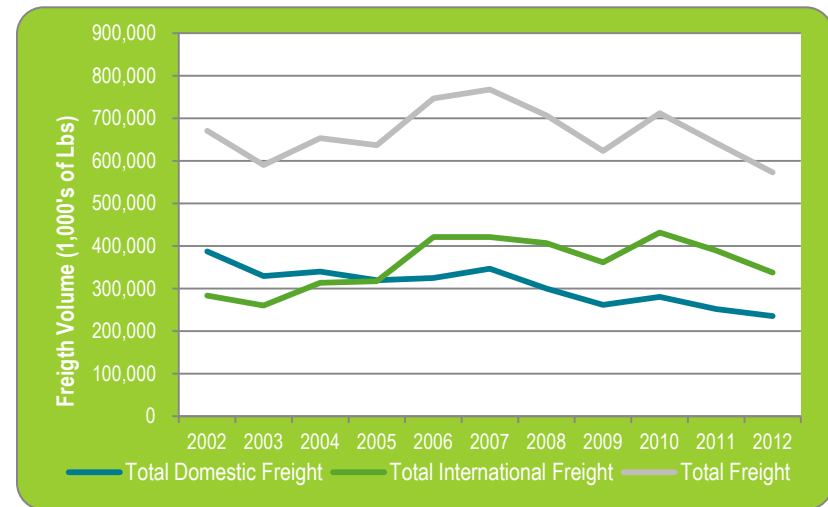
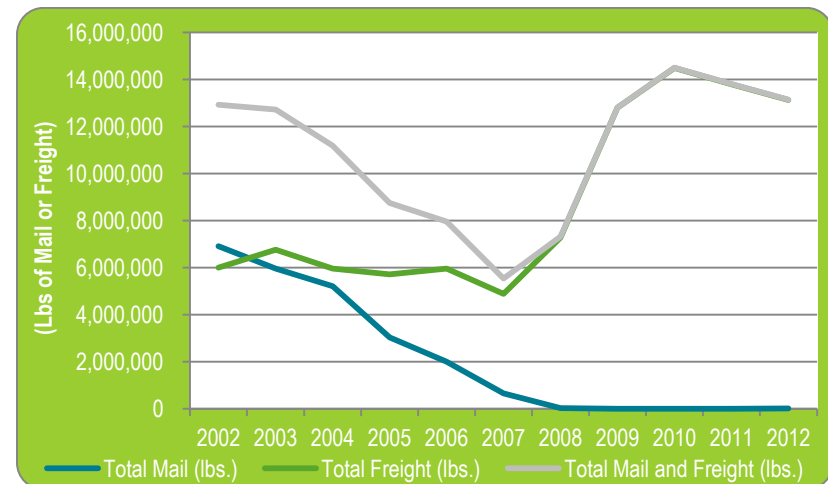


Figure 2: Mail and Freight Volume – Reagan National



**Table 13: Total Freight (1,000 lbs) Comparison: 2009 - 2012**

| Airport              | 2009           | 2012           | 2009 - 2012    |              |
|----------------------|----------------|----------------|----------------|--------------|
|                      |                |                | Net Change     | % Change     |
| Dulles International | 623,323        | 572,894        | -50,429        | -8.1%        |
| Reagan National      | 12,801         | 13,139         | 338            | 2.6%         |
| <b>Total</b>         | <b>636,124</b> | <b>586,032</b> | <b>-50,092</b> | <b>-7.9%</b> |

Source: Airports Authority Statistics, 2013.

According to data from U.S. Census extrapolated by the World Institute for Strategic Economic Research (WISERTrade), total U.S. exports shipped through Dulles International and Reagan National were valued at \$4.7 billion in 2012. Because more than 98.0 percent of the total freight and mail shipped through the Airports Authority airports is shipped through Dulles International, the airport-dependent industry impacts are estimated for Dulles International only<sup>6</sup>.

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<sup>6</sup> Census data does not provide a breakdown of shipments through Dulles International and Reagan National airports. However, according to data from the Airports Authority, approximately 98.0 percent of the total freight and mail shipped through the Airports Authority airports is shipped through Dulles International. The percentage of exports shipped through Dulles International is probably higher, therefore it can be inferred that most of the shipments in the U.S. Census data are for exports shipped through Dulles International.

Assessing the Airports Authority's economic contribution and its role as an engine for exporting goods manufactured in the surrounding states and the Washington metropolitan area requires three assumptions that are listed below.

- (1) The proportion of domestic to international cargo is the same across commodities/industries. Domestic and international cargo shipments in the course of a year include the same types and proportions of commodities. For calendar year 2012, the Airports Authority reported that approximately 337.7 million pounds of cargo other than mail departed by aircraft for international destinations, and 572.9 million pounds departed for international and domestic destinations combined. Therefore, the ratio of total tonnage to international exports is 1.70; that is, for every ton of international exports, 0.70 metric tons are shipped to domestic U.S. markets. As noted above, in 2012, the total value of exports shipped through Dulles International was approximately \$4.7 billion. Thus, applying the ratio of total tonnage to international exports estimated above, then the total value of international and domestic shipments from Dulles International in 2012 is estimated at \$8.04 billion. Note that these shipments related to commodity shipments only (excluding mail shipments).
- (2) The percentage of each commodity's shipments originating in each state is the same as the percentage of total exports originating in each state as a proportion of total shipments originating in the U.S. In 2012, the share of exports shipped through Dulles International originating in the District of

Columbia, Maryland, and Virginia is 1, 18, and 27 percent, respectively. Therefore, it is assumed that approximately 1 percent of every commodity shipped through Dulles International originates in the District of Columbia; approximately 18 percent of every commodity shipped through Dulles International originates in Maryland, and so on.

(3) The share of exports produced within the Washington metropolitan area is proportional to the area's share of total output produced within the District of Columbia, Maryland, and Virginia. This assumption is necessary because the origin of movement export series is not available by sub-state from the Bureau of the Census. The following example illustrates how this assumption works. It is estimated that the Washington metropolitan area accounts for 88 percent of the total pharmaceutical products produced in Virginia, the District of Columbia and Maryland. Therefore, it is assumed that the Washington metropolitan area accounts for 88 percent of all pharmaceutical products shipped through Dulles International airport.

Further details on these assumptions, as well as the calculations derived from these assumptions, are detailed in the Technical Appendix to this report.

### Air Freight Industry Impacts

As outlined above, air cargo shipments through Dulles International and the producers that depend on these services are a substantial generator of jobs and economic activity in the region. Carriers at Dulles International and Reagan National handled approximately \$4.7 billion in air freight destined for foreign markets in 2012. Dulles International accounts for 98 percent of the cargo flow. When the estimated value of domestic air cargo is added to the export market value, air freight handled by carriers at Dulles International has a value of more than \$8.04 billion. Producers in the states of Virginia, Maryland, and the District of Columbia account for a large proportion of that value and benefit from the Airports Authority's operations and investments.

Although precise information on the sales and location of the shippers handling the air cargo originating in and outside the region is not available because of the proprietary and confidential nature of private firm contracts and pricing, it is clear that this volume of activity supports the presence of a substantial freight forwarding and handling business in the region. This is particularly evident in Loudoun and Fairfax counties whose shipping customers are served through Dulles International.

Based on these inputs, the Airports Authority's air freight industry operations generated 19,493 direct, indirect and induced jobs and \$1.2 billion in associated labor income in 2012 (Table 14).

Table 14: Economic Impacts – Airport Dependent Activity, 2012

| 2012 ECONOMIC IMPACTS – AIRPORT DEPENDENT ACTIVITY |               |               |                            |                  |
|--|---------------|---------------|----------------------------|------------------|
| Jobs   |               |               | Labor Income (\$ Millions) |                  |
| Impact Type  | Total         | TOTAL IMPACTS | Impact Type                | Total            |
| Direct   | 10,219        |               | Direct                     | \$700.0          |
| Indirect   | 5,050         |               | Indirect                   | \$283.9          |
| Induced  | 4,224         |               | Induced                    | \$206.5          |
| <b>Total</b>                                       | <b>19,493</b> |               | <b>Total</b>               | <b>\$1,188.4</b> |
| VIRGINIA   |               |               |                            |                  |
| Direct   | 5,990         |               | Direct                     | \$355.3          |
| Indirect   | 2,986         |               | Indirect                   | \$171.0          |
| Induced  | 2,108         |               | Induced                    | \$104.7          |
| <b>Total</b>                                       | <b>11,084</b> |               | <b>Total</b>               | <b>\$631.0</b>   |
| DISTRICT OF COLUMBIA                               |               |               |                            |                  |
| Direct   | 349           |               | Direct                     | \$21.1           |
| Indirect   | 186           |               | Indirect                   | \$13.1           |
| Induced  | 51            |               | Induced                    | \$2.9            |
| <b>Total</b>                                       | <b>586</b>    |               | <b>Total</b>               | <b>\$37.2</b>    |
| MARYLAND   |               |               |                            |                  |
| Direct   | 3,880         |               | Direct                     | \$323.5          |
| Indirect   | 1,878         |               | Indirect                   | \$98.7           |
| Induced  | 2,065         |               | Induced                    | \$97.9           |
| <b>Total</b>                                       | <b>7,823</b>  |               | <b>Total</b>               | <b>\$520.2</b>   |

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.



### ***Total Impacts – Dulles International Airport***

The total economic impacts of Dulles International Airport include direct on-airport employment, capital program spending, airport operations and maintenance spending, visitor spending, freight transportation and airport dependent exporters. In 2012, including the multiplier effect, Dulles International supported 247,706 direct, indirect and induced jobs and \$9.9 billion in associated labor income (Table 15).

### ***Total Impacts – Reagan National Airport***

The total economic impacts of Reagan National Airport include direct on-airport employment, capital program spending, airport operations and maintenance spending and visitor spending. In 2012, including the multiplier effect, Reagan National supported 123,730 direct, indirect and induced jobs and nearly \$4.7 billion in associated labor income (Table 16).

Table 15: Total Economic Impacts – Dulles International Airport, 2012

| TOTAL 2012 ECONOMIC IMPACTS – DULLES INTERNATIONAL AIRPORT |                 |             |                |                  |                                |                        |                            |         |             |              |                  |                                |                        |  |
|--|-----------------|-------------|----------------|------------------|--------------------------------|------------------------|----------------------------|---------|-------------|--------------|------------------|--------------------------------|------------------------|--|
| Jobs   |                 |             |                |                  |                                |                        | Labor Income (\$ Millions) |         |             |              |                  |                                |                        |  |
| Impact Type  | Capital Program | Direct Jobs | O&M Spending/1 | Visitor Spending | Airport Depend-ent/<br>Freight | TOTAL IMPACTS<br>Total | Impact Type                | Capital | Direct Jobs | O&M Spending | Visitor Spending | Airport Depend-ent/<br>Freight | TOTAL IMPACTS<br>Total |  |
|  |                 |             |                |                  |                                |                        |                            |         |             |              |                  |                                |                        |  |
| Direct   | 1,620           | 19,371      | 2,103          | 111,202          | 10,219                         | 144,515                | Direct                     | \$95.4  | \$1,079.7   | \$122.8      | \$2,984.4        | \$700.0                        | \$4,982.4              |  |
| Indirect   | 372             | 7,512       | 406            | 40,580           | 5,050                          | 53,920                 | Indirect                   | 24.6    | 368.7       | 25.4         | 2,182.6          | 282.9                          | 2,884.2                |  |
| Induced  | 589             | 7,609       | 710            | 36,139           | 4,224                          | 49,271                 | Induced                    | 27.7    | 271.0       | 33.5         | 1,545.8          | 205.5                          | 2,083.5                |  |
| Total  | 2,580           | 34,492      | 3,219          | 187,922          | 19,493                         | 247,706                | Total                      | \$147.7 | \$1,719.3   | \$181.7      | \$6,712.9        | \$1,188.4                      | \$9,950.0              |  |
| VIRGINIA   |                 |             |                |                  |                                |                        |                            |         |             |              |                  |                                |                        |  |
| Direct   | 850             | 17,238      | 1,103          | 59,945           | 5,990                          | 85,126                 | Direct                     | \$44.9  | \$960.7     | \$64.4       | \$1,608.8        | \$355.3                        | \$3,034.2              |  |
| Indirect   | 195             | 6,685       | 213            | 21,875           | 2,986                          | 31,955                 | Indirect                   | 12.1    | 328.0       | 13.3         | 1,176.5          | 171.0                          | \$1,701.0              |  |
| Induced  | 309             | 6,771       | 373            | 19,481           | 2,108                          | 29,041                 | Induced                    | 13.0    | 241.2       | 17.5         | 833.3            | 104.7                          | \$1,209.7              |  |
| Total  | 1,353           | 30,694      | 1,689          | 101,301          | 11,084                         | 146,122                | Total                      | \$70.0  | \$1,529.9   | \$95.3       | \$3,618.7        | \$631.0                        | \$5,944.9              |  |
| DISTRICT OFCOLUMBIA  |                 |             |                |                  |                                |                        |                            |         |             |              |                  |                                |                        |  |
| Direct   | 395             | 568         | 513            | 38,660           | 349                            | 40,486                 | Direct                     | \$25.9  | \$31.5      | \$30.0       | \$1,037.6        | \$21.1                         | \$1,146.1              |  |
| Indirect   | 91              | 220         | 99             | 14,108           | 185.9                          | 14,704                 | Indirect                   | 6.3     | 10.7        | 6.2          | 758.8            | 13.1                           | \$795.2                |  |
| Induced  | 144             | 223         | 173            | 12,564           | 50.6                           | 13,155                 | Induced                    | 7.5     | 7.9         | 8.2          | 537.4            | 2.9                            | \$563.9                |  |
| Total  | 630             | 1,012       | 786            | 65,332           | 586                            | 68,345                 | Total                      | \$39.8  | \$50.1      | \$44.4       | \$2,333.8        | \$37.2                         | \$2,505.2              |  |
| MARYLAND   |                 |             |                |                  |                                |                        |                            |         |             |              |                  |                                |                        |  |
| Direct   | 375             | 1,565       | 487            | 12,597           | 3880                           | 18,903                 | Direct                     | \$24.6  | \$87.5      | \$28.4       | \$338.1          | \$323.5                        | \$802.1                |  |
| Indirect   | 86              | 607         | 94             | 4,597            | 1878                           | 7,261                  | Indirect                   | 6.2     | 29.9        | 5.9          | 247.2            | 98.7                           | \$387.9                |  |
| Induced  | 136             | 615         | 164            | 4,094            | 2065                           | 7,074                  | Induced                    | 7.2     | 22.0        | 7.7          | 175.1            | 97.9                           | \$309.9                |  |
| Total  | 597             | 2,786       | 745            | 21,288           | 7,823                          | 33,239                 | Total                      | \$38.0  | \$139.3     | \$42.0       | \$760.4          | \$520.2                        | \$1,500.0              |  |

1/ O&amp;M Spending is operations and maintenance spending.

Source: Airports Authority; WBA Research; DestinationDC; Renaissance Planning Group; WISERTrade; Metropolitan Washington Council of Governments; IMPLAN Group, LLC; Willdan, 2013.

Table 16: Total Economic Impacts – Reagan National Airport and Consolidated Functions, 2012

| TOTAL 2012 ECONOMIC IMPACTS – REAGAN NATIONAL AIRPORT AND CONSOLIDATED FUNCTIONS |                 |               |                |                  |                |                            |              |                 |                |                |                  |                  |
|--|-----------------|---------------|----------------|------------------|----------------|----------------------------|--------------|-----------------|----------------|----------------|------------------|------------------|
| Jobs   |                 |               |                |                  |                | Labor Income (\$ Millions) |              |                 |                |                |                  |                  |
| Impact Type  | Capital Program | Direct Jobs   | O&M Spending/1 | Visitor Spending | Total          | TOTAL IMPACTS              | Impact Type  | Capital Program | Direct Jobs    | O&M Spending   | Visitor Spending | Total            |
| Direct   | 896             | 8,166         | 2,095          | 61,871           | 73,028         |                            | Direct       | \$54.1          | \$429.3        | \$122.4        | \$1,660.5        | \$2,266.2        |
| Indirect   | 206             | 3,167         | 404            | 22,578           | 26,355         |                            | Indirect     | \$13.8          | \$146.6        | \$25.3         | \$1,214.4        | \$1,400.1        |
| Induced  | 326             | 3,207         | 707            | 20,107           | 24,348         |                            | Induced      | \$15.7          | \$107.8        | \$33.3         | \$860.1          | \$1,016.8        |
| <b>Total</b>   | <b>1,427</b>    | <b>14,540</b> | <b>3,206</b>   | <b>104,557</b>   | <b>123,730</b> |                            | <b>Total</b> | <b>\$83.5</b>   | <b>\$683.6</b> | <b>\$181.0</b> | <b>\$3,734.9</b> | <b>\$4,683.1</b> |
| VIRGINIA   |                 |               |                |                  |                |                            |              |                 |                |                |                  |                  |
| Direct   | 368             | 4,971         | 1,099          | 22,366           | 73,028         |                            | Direct       | \$19.4          | \$294.7        | \$64.2         | \$600.3          | \$978.6          |
| Indirect   | 84              | 1,928         | 212            | 8,162            | 26,355         |                            | Indirect     | \$5.2           | \$100.6        | \$13.3         | \$439.0          | \$558.1          |
| Induced  | 134             | 1,952         | 371            | 7,269            | 24,348         |                            | Induced      | \$5.6           | \$74.0         | \$17.5         | \$310.9          | \$408.0          |
| <b>Total</b>   | <b>586</b>      | <b>8,851</b>  | <b>1,682</b>   | <b>37,797</b>    | <b>123,730</b> |                            | <b>Total</b> | <b>\$30.3</b>   | <b>\$469.4</b> | <b>\$94.9</b>  | <b>\$1,350.2</b> | <b>\$1,944.8</b> |
| DISTRICT OF COLUMBIA   |                 |               |                |                  |                |                            |              |                 |                |                |                  |                  |
| Direct   | 358             | 802           | 511            | 30,354           | 32,025         |                            | Direct       | \$23.5          | \$47.1         | \$29.9         | \$814.7          | \$915.1          |
| Indirect   | 82              | 311           | 99             | 11,077           | 11,569         |                            | Indirect     | \$5.7           | \$16.1         | \$6.2          | \$595.8          | \$623.8          |
| Induced  | 130             | 315           | 173            | 9,865            | 10,482         |                            | Induced      | \$6.8           | \$11.8         | \$8.1          | \$422.0          | \$448.7          |
| <b>Total</b>   | <b>570</b>      | <b>1,427</b>  | <b>783</b>     | <b>51,297</b>    | <b>54,076</b>  |                            | <b>Total</b> | <b>\$36.0</b>   | <b>\$75.0</b>  | <b>\$44.2</b>  | <b>\$1,832.4</b> | <b>\$1,987.5</b> |
| MARYLAND   |                 |               |                |                  |                |                            |              |                 |                |                |                  |                  |
| Direct   | 170             | 2,394         | 485            | 9,150            | 12,199         |                            | Direct       | \$11.2          | \$87.5         | \$28.3         | \$245.6          | \$372.5          |
| Indirect   | 39              | 928           | 93             | 3,339            | 4,400          |                            | Indirect     | \$2.8           | \$29.9         | \$5.9          | \$179.6          | \$218.2          |
| Induced  | 62              | 940           | 164            | 2,974            | 4,139          |                            | Induced      | \$3.3           | \$22.0         | \$7.7          | \$127.2          | \$160.1          |
| <b>Total</b>   | <b>272</b>      | <b>4,262</b>  | <b>742</b>     | <b>15,463</b>    | <b>20,738</b>  |                            | <b>Total</b> | <b>\$17.3</b>   | <b>\$139.3</b> | <b>\$41.9</b>  | <b>\$552.3</b>   | <b>\$750.8</b>   |

1/ O&M Spending is operations and maintenance spending.

Source: Airports Authority; WBA Research; DestinationDC; Renaissance Planning Group; Metropolitan Washington Council of Governments; IMPLAN Group, LLC; Willdan, 2013..

## Dulles Toll Road Impacts

The Dulles Toll Road (Virginia Route 267) is an eight lane, 14-mile highway in Northern Virginia. The western end of the Dulles Toll Road is connected to the Dulles Greenway, a privately owned 14-mile toll road that further connects Washington Dulles International airport with Leesburg, Virginia. The eastern end of the Dulles Toll Road directly connects to the Capital Beltway (Interstate 495) and connects to Interstate 66 via the Dulles Connector Road (east of the Capital Beltway).

The Toll Road is located on federal land operated by the Airports Authority and runs parallel to the Dulles Airport Access Highway, whose median includes the current and future locations of four Dulles Corridor Metrorail stations. The Airports Authority operates and maintains roadway facilities to provide customer access to and from the airport; public transit vehicle connections between the Dulles Airport Access Highway and the Dulles Toll Road; and direct access to local communities via the Toll Road.

The Airports Authority's purpose in operating the Toll Road includes financing the construction of the Dulles Corridor Metrorail using Toll Road revenue to support the sale of bonds and maintaining and operating the road.

### *Dulles Toll Road Capital Program Spending Impacts*

Capital expenditures are scheduled to meet a long-term plan for the efficient upkeep and operation of the roadway. In 2012, these expenditures amounted to \$11.1 million (Table 17). In turn, these

expenditures generated 379 total jobs and \$21.4 million in labor income (Table 18).

### *Dulles Toll Road Direct Employment Impacts*

In 2012, the Airports Authority Toll Road staff numbers 30 people to directly manage the various contracts and operations of the Dulles Toll Road. Payroll expenditures totaled an estimated \$1.6 million in that same year (Table 17). In total, 46 jobs and \$1.0 million in labor income was generated (Table 18).

### *Dulles Toll Road Operations & Maintenance Impacts*

Non-payroll operations and maintenance expenditures for the Dulles Toll Road in 2012 totaled an estimated \$16.5 million (Table 17). This spending generated 609 total jobs and \$34.6 million in labor income (Table 19).

**Table 17: Dulles Toll Road Capital & Operations Expenditures, 2012 (\$ Millions)**

| Expenditure Type | Capital | Operations & Maintenance /1 | Payroll | Total  |
|------------------|---------|-----------------------------|---------|--------|
| Dulles Toll Road | \$11.1  | \$16.5                      | \$1.6   | \$29.2 |

1/ Operations & Maintenance budget included goods, services, and maintenance expenditures.  
Source: Airports Authority; Willdan, 2013.

Based on these combined direct impacts, taking into account the multiplier effect, total 2012 capital program spending, direct employment and operations and maintenance spending related to the Dulles Toll Road generated a total of 1,035 jobs and \$57.1 million in labor income (Table 20).



Table 18: Economic Impacts – Dulles Toll Road: Capital Program Spending & Direct Employment, 2012

| 2012 ECONOMIC IMPACTS – DULLES TOLL ROAD: CAPITAL PROGRAM SPENDING & DIRECT EMPLOYMENT |      |                            |               |  |                   |      |                            |  |
|--|------|----------------------------|---------------|--|-------------------|------|----------------------------|--|
| CAPITAL PROGRAM SPENDING   |      |                            |               |  | DIRECT EMPLOYMENT |      |                            |  |
| Impact Type  | Jobs | Labor Income (\$ Millions) | TOTAL IMPACTS |  | Impact Type       | Jobs | Labor Income (\$ Millions) |  |
| Direct   | 246  | \$13.1                     |               |  | Direct            | 30   | \$0.0                      |  |
| Indirect   | 57   | \$4.4                      |               |  | Indirect          | 7    | \$0.5                      |  |
| Induced  | 76   | \$4.0                      |               |  | Induced           | 9    | \$0.5                      |  |
| Total  | 379  | \$21.4                     |               |  | Total             | 46   | \$1.0                      |  |
| VIRGINIA   |      |                            |               |  |                   |      |                            |  |
| Direct   | 129  | \$5.6                      |               |  | Direct            | 26   | \$1.3                      |  |
| Indirect   | 30   | \$1.8                      |               |  | Indirect          | 6    | \$0.4                      |  |
| Induced  | 40   | \$1.7                      |               |  | Induced           | 8    | \$0.3                      |  |
| Total  | 198  | \$9.1                      |               |  | Total             | 40   | \$2.0                      |  |
| DISTRICT OF COLUMBIA   |      |                            |               |  |                   |      |                            |  |
| Direct   | 99   | \$4.3                      |               |  | Direct            | 1.0  | \$0.1                      |  |
| Indirect   | 23   | \$1.4                      |               |  | Indirect          | 0.2  | \$0.0                      |  |
| Induced  | 31   | \$1.3                      |               |  | Induced           | 0.3  | \$0.0                      |  |
| Total  | 153  | \$7.0                      |               |  | Total             | 1.5  | \$0.1                      |  |
| MARYLAND   |      |                            |               |  |                   |      |                            |  |
| Direct   | 18   | \$1.3                      |               |  | Direct            | 3    | \$0.2                      |  |
| Indirect   | 4    | \$0.2                      |               |  | Indirect          | 1    | \$0.0                      |  |
| Induced  | 6    | \$0.4                      |               |  | Induced           | 1    | \$0.1                      |  |
| Total  | 28   | \$1.9                      |               |  | Total             | 5    | \$0.2                      |  |

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

Table 19: Economic Impacts – Dulles Toll Road Operations & Maintenance Spending, 2012

| 2012 ECONOMIC IMPACTS – DULLES TOLL ROAD OPERATIONS & MAINTENANCE SPENDING |            |               |                               |               |
|--|------------|---------------|-------------------------------|---------------|
| Jobs   |            |               | Labor Income<br>(\$ Millions) |               |
| Impact Type  | Total      | TOTAL IMPACTS | Impact Type                   | Total         |
| Direct   | 410        |               | Direct                        | \$22.8        |
| Indirect   | 77         |               | Indirect                      | \$5.4         |
| Induced  | 123        |               | Induced                       | \$6.4         |
| <b>Total</b>   | <b>609</b> |               | <b>Total</b>                  | <b>\$34.6</b> |
| VIRGINIA   |            |               |                               |               |
| Direct   | 214        |               | Direct                        | \$9.6         |
| Indirect   | 40         |               | Indirect                      | \$2.3         |
| Induced  | 64         |               | Induced                       | \$2.7         |
| <b>Total</b>   | <b>319</b> |               | <b>Total</b>                  | <b>\$14.6</b> |
| DISTRICT OF COLUMBIA   |            |               |                               |               |
| Direct   | 165        |               | Direct                        | \$7.4         |
| Indirect   | 31         |               | Indirect                      | \$1.7         |
| Induced  | 49         |               | Induced                       | \$2.1         |
| <b>Total</b>   | <b>246</b> |               | <b>Total</b>                  | <b>\$11.2</b> |
| MARYLAND   |            |               |                               |               |
| Direct   | 30         |               | Direct                        | \$1.3         |
| Indirect   | 6          |               | Indirect                      | \$0.3         |
| Induced  | 9          |               | Induced                       | \$0.4         |
| <b>Total</b>   | <b>44</b>  |               | <b>Total</b>                  | <b>\$2.0</b>  |

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

Table 20: Total 2012 Dulles Toll Road Economic Impacts

| TOTAL 2012 DULLES TOLL ROAD ECONOMIC IMPACTS:<br><i>Capital Program Spending + Direct Employment + Operations &amp; Maintenance Spending</i> |              |               |                               |               |
|--|--------------|---------------|-------------------------------|---------------|
| Jobs   |              |               | Labor Income<br>(\$ Millions) |               |
| Impact Type  | Total        | TOTAL IMPACTS | Impact Type                   | Total         |
| Direct   | 686          |               | Direct                        | \$35.9        |
| Indirect   | 140          |               | Indirect                      | \$10.3        |
| Induced  | 208          |               | Induced                       | \$10.8        |
| <b>Total</b>   | <b>1,035</b> |               | <b>Total</b>                  | <b>\$57.1</b> |
| VIRGINIA   |              |               |                               |               |
| Direct   | 369          |               | Direct                        | \$16.5        |
| Indirect   | 76           |               | Indirect                      | \$4.5         |
| Induced  | 112          |               | Induced                       | \$4.7         |
| <b>Total</b>   | <b>557</b>   |               | <b>Total</b>                  | <b>\$25.7</b> |
| DISTRICT OF COLUMBIA   |              |               |                               |               |
| Direct   | 266          |               | Direct                        | \$11.8        |
| Indirect   | 54           |               | Indirect                      | \$3.2         |
| Induced  | 81           |               | Induced                       | \$3.4         |
| <b>Total</b>   | <b>400</b>   |               | <b>Total</b>                  | <b>\$18.3</b> |
| MARYLAND   |              |               |                               |               |
| Direct   | 51           |               | Direct                        | \$2.8         |
| Indirect   | 10           |               | Indirect                      | \$0.6         |
| Induced  | 15           |               | Induced                       | \$0.8         |
| <b>Total</b>   | <b>77</b>    |               | <b>Total</b>                  | <b>\$4.1</b>  |

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

## Dulles Corridor Metrorail Project Capital & Operations Impacts

Construction of Phase 1 of the Dulles Corridor Metrorail Project continued throughout 2012. Five stations have been constructed in this phase of the 23-mile extension from Metro's Orange Line in Falls Church, Virginia, to Wiehle Avenue in Reston, Virginia. Phase 2 will complete the project with six new stations that will continue from Wiehle Avenue through Dulles International airport and into Ashburn in Loudoun County. The Dulles Corridor Metrorail Project is a significant catalyst for economic development along its route and will provide new transportation options for commuters, in addition to providing a fast and efficient new option for passengers using Dulles International airport.

### Dulles Corridor Metrorail Project Capital Program Spending Impacts

In 2012, the Airports Authority spent \$439.1 million on construction of the Dulles Corridor Metrorail Project (Table 21).

### Dulles Corridor Metrorail Project Direct Employment Impacts

The Airports Authority spent an additional \$2.4 million on payroll for 18 staff members, who are assigned to the Dulles Corridor Metrorail Project (Table 21).

## Dulles Corridor Metrorail Operations & Maintenance Impacts

According to operating data provided by the Airports Authority, total 2012 operations and maintenance expenditures related to the Dulles Corridor Metrorail Project totaled \$33.7 million (Table 21).

**Table 21: Summary of Dulles Corridor Metrorail Direct Impacts, 2012 (\$ Millions)**

| Capital   | Operations & Maintenance /1 | Payroll | Total   |
|---|-----------------------------|---------|---------|
| \$439.1   | \$33.7                      | \$100.4 | \$573.2 |
| 1/ Operations & Maintenance budget included goods, services and maintenance expenditures. |                             |         |         |

Source: Airports Authority; Willdan, 2013.

The component results for 2012 capital program spending, direct employment, and operations and maintenance spending are presented in the following Table 22 and Table 23.

Based on these combined direct impacts, taking into account the multiplier effect, 2012 capital program spending, direct employment and operations and maintenance spending by the Airports Authority related to the Dulles Corridor Metrorail Project totaled 14,597 direct, indirect and induced jobs and \$681.3 million in associated labor income (Table 24).



Table 22: Economic Impacts – Dulles Corridor Metrorail Construction: Capital Program Spending & Direct Employment, 2012

| 2012 ECONOMIC IMPACTS – DULLES CORRIDOR METRORAIL CONSTRUCTION: |               |                               |                |               |                   |           |                               |              |
|---|---------------|-------------------------------|----------------|---------------|-------------------|-----------|-------------------------------|--------------|
| CAPITAL PROGRAM SPENDING  |               |                               |                |               | DIRECT EMPLOYMENT |           |                               |              |
| Jobs  |               | Labor Income<br>(\$ Millions) |                | TOTAL IMPACTS | Jobs              |           | Labor Income<br>(\$ Millions) |              |
| Impact Type   | Total         | Impact Type                   | Total          |               | Impact Type       | Total     | Impact Type                   | Total        |
| Direct  | 8,628         | Direct                        | \$379.8        |               | Direct            | 18        | Direct                        | \$2.5        |
| Indirect  | 1,982         | Indirect                      | \$124.8        |               | Indirect          | 4         | Indirect                      | \$0.3        |
| Induced   | 2,681         | Induced                       | \$114.9        |               | Induced           | 6         | Induced                       | \$0.2        |
| <b>Total</b>  | <b>13,290</b> | <b>Total</b>                  | <b>\$619.5</b> |               | <b>Total</b>      | <b>28</b> | <b>Total</b>                  | <b>\$3.0</b> |
| VIRGINIA  |               |                               |                |               |                   |           |                               |              |
| Direct  | 4,006         | Direct                        | \$173.5        |               | Direct            | 16        | Direct                        | \$2.2        |
| Indirect  | 920           | Indirect                      | \$56.9         |               | Indirect          | 4         | Indirect                      | \$0.2        |
| Induced   | 1,245         | Induced                       | \$52.5         |               | Induced           | 5         | Induced                       | \$0.2        |
| <b>Total</b>  | <b>6,171</b>  | <b>Total</b>                  | <b>\$282.9</b> |               | <b>Total</b>      | <b>25</b> | <b>Total</b>                  | <b>\$2.6</b> |
| DISTRICT OF COLUMBIA  |               |                               |                |               |                   |           |                               |              |
| Direct  | 616           | Direct                        | \$32.8         |               | Direct            | -         | Direct                        | \$0.0        |
| Indirect  | 141           | Indirect                      | \$10.9         |               | Indirect          | -         | Indirect                      | \$0.0        |
| Induced   | 191           | Induced                       | \$10.0         |               | Induced           | -         | Induced                       | \$0.0        |
| <b>Total</b>  | <b>949</b>    | <b>Total</b>                  | <b>\$53.4</b>  |               | <b>Total</b>      | <b>-</b>  | <b>Total</b>                  | <b>\$0.0</b> |
| MARYLAND  |               |                               |                |               |                   |           |                               |              |
| Direct  | 4,006         | Direct                        | \$173.5        |               | Direct            | 2         | Direct                        | \$0.4        |
| Indirect  | 920           | Indirect                      | \$56.9         |               | Indirect          | 0         | Indirect                      | \$0.0        |
| Induced   | 1,245         | Induced                       | \$52.5         |               | Induced           | 1         | Induced                       | \$0.0        |
| <b>Total</b>  | <b>6,171</b>  | <b>Total</b>                  | <b>\$282.9</b> |               | <b>Total</b>      | <b>3</b>  | <b>Total</b>                  | <b>\$0.4</b> |

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

Table 23: Economic Impacts -- Dulles Corridor Metrorail Operations & Maintenance Spending, 2012

| 2012 ECONOMIC IMPACTS – DULLES CORRIDOR METRORAIL OPERATIONS & MAINTENANCE SPENDING |              |               |                            |               |  |
|---|--------------|---------------|----------------------------|---------------|--|
| Jobs  |              |               | Labor Income (\$ Millions) |               |  |
| Impact Type   | Total        | TOTAL IMPACTS | Impact Type                | Total         |  |
| Direct  | 835          |               | Direct                     | \$37.5        |  |
| Indirect  | 186          |               | Indirect                   | \$10.4        |  |
| Induced   | 258          |               | Induced                    | \$10.9        |  |
| <b>Total</b>  | <b>1,279</b> |               | <b>Total</b>               | <b>\$58.8</b> |  |
| VIRGINIA  |              |               |                            |               |  |
| Direct  | 396          |               | Direct                     | \$17.8        |  |
| Indirect  | 88           |               | Indirect                   | \$4.9         |  |
| Induced   | 122          |               | Induced                    | \$5.2         |  |
| <b>Total</b>  | <b>607</b>   |               | <b>Total</b>               | <b>\$27.9</b> |  |
| DISTRICT OF COLUMBIA  |              |               |                            |               |  |
| Direct  | 60           |               | Direct                     | \$2.7         |  |
| Indirect  | 13           |               | Indirect                   | \$0.7         |  |
| Induced   | 18           |               | Induced                    | \$0.8         |  |
| <b>Total</b>  | <b>91</b>    |               | <b>Total</b>               | <b>\$4.2</b>  |  |
| MARYLAND  |              |               |                            |               |  |
| Direct  | 379          |               | Direct                     | \$17.0        |  |
| Indirect  | 84           |               | Indirect                   | \$4.7         |  |
| Induced   | 117          |               | Induced                    | \$4.9         |  |
| <b>Total</b>  | <b>581</b>   |               | <b>Total</b>               | <b>\$26.7</b> |  |

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

Table 24: Total 2012 Dulles Corridor Metrorail Project Economic Impacts

| TOTAL 2012 ECONOMIC IMPACTS – DULLES CORRIDOR METRORAIL PROJECT:<br><i>Capital Program Spending + Direct Employment + Operations &amp; Maintenance Spending</i> |               |               |                               |                |  |
|---|---------------|---------------|-------------------------------|----------------|--|
| Jobs  |               |               | Labor Income<br>(\$ Millions) |                |  |
| Impact Type   | Total         | TOTAL IMPACTS | Impact Type                   | Total          |  |
| Direct  | 9,481         |               | Direct                        | \$419.8        |  |
| Indirect  | 2,172         |               | Indirect                      | \$135.5        |  |
| Induced   | 2,944         |               | Induced                       | \$126.0        |  |
| <b>Total</b>  | <b>14,597</b> |               | <b>Total</b>                  | <b>\$681.3</b> |  |
| VIRGINIA  |               |               |                               |                |  |
| Direct  | 4,418         |               | Direct                        | \$193.5        |  |
| Indirect  | 1,012         |               | Indirect                      | \$62.1         |  |
| Induced   | 1,372         |               | Induced                       | \$57.8         |  |
| <b>Total</b>  | <b>6,802</b>  |               | <b>Total</b>                  | <b>\$313.4</b> |  |
| DISTRICT OF COLUMBIA  |               |               |                               |                |  |
| Direct  | 676           |               | Direct                        | \$35.5         |  |
| Indirect  | 155           |               | Indirect                      | \$11.7         |  |
| Induced   | 210           |               | Induced                       | \$10.7         |  |
| <b>Total</b>  | <b>1,040</b>  |               | <b>Total</b>                  | <b>\$57.9</b>  |  |
| MARYLAND  |               |               |                               |                |  |
| Direct  | 4,386         |               | Direct                        | \$190.9        |  |
| Indirect  | 1,005         |               | Indirect                      | \$61.7         |  |
| Induced   | 1,362         |               | Induced                       | \$57.4         |  |
| <b>Total</b>  | <b>6,755</b>  |               | <b>Total</b>                  | <b>\$310.0</b> |  |

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

Table 25: Total 2012 Airports Authority Economic Impacts – Jobs

| TOTAL 2012 AIRPORTS AUTHORITY ECONOMIC IMPACT - JOBS |                         |                   |                     |                              |                |
|--|-------------------------|-------------------|---------------------|------------------------------|----------------|
| Impact Type  | Dulles International /1 | Reagan National/2 | Dulles Toll Road /3 | Dulles Corridor Metrorail /4 | TOTAL IMPACTS  |
| TOTAL IMPACTS  |                         |                   |                     |                              |                |
| Direct   | 144,515                 | 73,028            | 686                 | 9,481                        | 227,709        |
| Indirect   | 53,920                  | 26,355            | 141                 | 2,172                        | 82,588         |
| Induced  | 49,271                  | 24,348            | 209                 | 2,944                        | 76,771         |
| <b>Total</b>   | <b>247,706</b>          | <b>123,730</b>    | <b>1,035</b>        | <b>14,597</b>                | <b>387,068</b> |
| VIRGINIA   |                         |                   |                     |                              |                |
| Direct   | 85,126                  | 28,804            | 369                 | 4,418                        | 118,717        |
| Indirect   | 31,955                  | 10,386            | 76                  | 1,012                        | 43,429         |
| Induced  | 29,041                  | 9,726             | 112                 | 1,372                        | 40,252         |
| <b>Total</b>   | <b>146,122</b>          | <b>48,916</b>     | <b>557</b>          | <b>6,802</b>                 | <b>202,397</b> |
| DISTRICT OF COLUMBIA                                 |                         |                   |                     |                              |                |
| Direct   | 40,486                  | 32,025            | 266                 | 676                          | 73,452         |
| Indirect   | 14,704                  | 11,569            | 54                  | 155                          | 26,482         |
| Induced  | 13,155                  | 10,482            | 81                  | 210                          | 23,928         |
| <b>Total</b>   | <b>68,345</b>           | <b>54,076</b>     | <b>400</b>          | <b>1,040</b>                 | <b>123,862</b> |
| MARYLAND   |                         |                   |                     |                              |                |
| Direct   | 18,903                  | 12,199            | 51                  | 4,386                        | 35,538         |
| Indirect   | 7,261                   | 4,400             | 11                  | 1,005                        | 12,677         |
| Induced  | 7,074                   | 4,139             | 16                  | 1,362                        | 12,591         |
| <b>Total</b>   | <b>33,239</b>           | <b>20,738</b>     | <b>78</b>           | <b>6,755</b>                 | <b>60,809</b>  |

1/ Includes Direct Payroll, Operations & Maintenance Spending on Goods & Services, Capital Investment, & Related Visitor Spending

2/ Ibid,

3/ Includes Operations & Maintenance and 2012 Capital Investment Spending

4/ Ibid.

Source: Airports Authority; WBA Research; DestinationDC; Renaissance Planning Group; WISERTrade; Metropolitan Washington Council of Governments; IMPLAN Group, LLC; Willdan, 2013.



Table 26: Total 2012 Airports Authority Economic Impacts – Labor Income (\$ Millions)

| TOTAL 2012 AIRPORTS AUTHORITY ECONOMIC IMPACTS – LABOR INCOME (\$ Millions) |                         |                    |                     |                              |                   |
|---|-------------------------|--------------------|---------------------|------------------------------|-------------------|
| Impact Type   | Dulles International /1 | Reagan National /2 | Dulles Toll Road /3 | Dulles Corridor Metrorail /4 | TOTAL IMPACT      |
| TOTAL IMPACTS   |                         |                    |                     |                              |                   |
| Direct  | \$4,982.4               | \$2,266.2          | \$31.1              | \$419.8                      | \$7,699.5         |
| Indirect  | \$2,884.2               | \$1,400.1          | \$8.2               | \$135.5                      | \$4,427.9         |
| Induced   | \$2,083.5               | \$1,016.8          | \$8.9               | \$126.0                      | \$3,235.3         |
| <b>Total</b>  | <b>\$9,950.0</b>        | <b>\$4,683.1</b>   | <b>\$48.2</b>       | <b>\$681.3</b>               | <b>\$15,362.6</b> |
| VIRGINIA  |                         |                    |                     |                              |                   |
| Direct  | \$3,034.2               | \$978.6            | \$16.5              | \$193.5                      | \$4,222.8         |
| Indirect  | \$1,701.0               | \$558.1            | \$4.5               | \$62.1                       | \$2,325.7         |
| Induced   | \$1,209.7               | \$408.0            | \$4.7               | \$57.8                       | \$1,680.3         |
| <b>Total</b>  | <b>\$5,944.9</b>        | <b>\$1,944.8</b>   | <b>\$25.7</b>       | <b>\$313.4</b>               | <b>\$8,228.8</b>  |
| DISTRICT OF COLUMBIA  |                         |                    |                     |                              |                   |
| Direct  | \$1,146.1               | \$915.1            | \$11.8              | \$35.5                       | \$2,108.4         |
| Indirect  | \$795.2                 | \$623.8            | \$3.2               | \$11.7                       | \$1,433.8         |
| Induced   | \$563.9                 | \$448.7            | \$3.4               | \$10.7                       | \$1,026.7         |
| <b>Total</b>  | <b>\$2,505.2</b>        | <b>\$1,987.5</b>   | <b>\$18.3</b>       | <b>\$57.9</b>                | <b>\$4,568.9</b>  |
| MARYLAND  |                         |                    |                     |                              |                   |
| Direct  | \$802.1                 | \$372.5            | \$2.8               | \$190.9                      | \$1,368.3         |
| Indirect  | \$387.9                 | \$218.2            | \$0.6               | \$61.7                       | \$668.3           |
| Induced   | \$309.9                 | \$160.1            | \$0.8               | \$57.4                       | \$528.3           |
| <b>Total</b>  | <b>\$1,500.0</b>        | <b>\$750.8</b>     | <b>\$4.1</b>        | <b>\$310.0</b>               | <b>\$2,564.9</b>  |

1/ Includes direct employment, capital program spending, operations and maintenance spending on goods and services, visitor spending and airport-dependent industries employment.

2/ Includes direct employment, capital program spending, operations and maintenance spending on goods and services and visitor spending.

3/ Includes direct employment, capital program spending and operations and maintenance spending.

4/ Includes direct employment, capital program spending and operations and maintenance spending.

Source: Airports Authority; WBA Research; DestinationDC; Renaissance Planning Group; WISERTrade; Metropolitan Washington Council of Governments; IMPLAN Group, LLC; Willdan, 2013.

## Tax Impacts

The Airports Authority's direct employment, capital spending and operations and maintenance spending generates substantial state and local taxes throughout the regional economy. Based on the direct economic activities detailed in the introduction to this report<sup>7</sup>, the following order-of-magnitude estimates indicate that the Airports Authority's operations contributed approximately \$1.9 billion in personal income, real property, sales and corporate earnings taxes in 2012 (Table 27 through Table 30).

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<sup>7</sup> As calculated by the IMPLAN Group, LLC economic model.

Table 27: Total Personal Income Tax Impacts, 2012

| Total Personal Income Taxes, 2012 (\$ Millions) | Dulles International | Reagan National | Dulles Toll Road | Dulles Corridor Metrorail Project | Total /1        |
|---|----------------------|-----------------|------------------|-----------------------------------|-----------------|
| <b>VIRGINIA</b>                                 |                      |                 |                  |                                   |                 |
| Alexandria City                                 | \$7.94               | \$4.68          | \$0.01           | \$0.17                            | \$12.81         |
| Arlington County                                | \$19.33              | \$13.95         | \$0.02           | \$0.19                            | \$33.48         |
| Clarke County                                   | \$1.47               | \$0.17          | \$0.00           | \$0.00                            | \$1.64          |
| Fairfax County                                  | \$16.99              | \$4.10          | \$0.15           | \$1.82                            | \$23.05         |
| Fairfax City                                    | \$6.71               | \$1.15          | \$0.00           | \$0.03                            | \$7.89          |
| City of Falls Church                            | \$2.01               | \$0.34          | \$0.00           | \$0.03                            | \$2.38          |
| Fauquier County                                 | \$2.13               | \$0.29          | \$0.01           | \$0.07                            | \$2.50          |
| Loudoun County                                  | \$11.92              | \$1.89          | \$0.04           | \$0.46                            | \$14.31         |
| Manassas City                                   | \$4.97               | \$0.86          | \$0.00           | \$0.03                            | \$5.87          |
| Manassas Park City                              | \$0.99               | \$0.16          | \$0.00           | \$0.01                            | \$1.16          |
| Prince William County                           | \$4.63               | \$1.31          | \$0.06           | \$0.63                            | \$6.63          |
| All Other Virginia                              | \$14.09              | \$2.28          | \$0.07           | \$0.89                            | \$17.33         |
| <b>Subtotal - Virginia</b>                      | <b>\$93.17</b>       | <b>\$31.19</b>  | <b>\$0.36</b>    | <b>\$4.34</b>                     | <b>\$129.05</b> |
| <b>District of Columbia</b>                     |                      |                 |                  |                                   |                 |
|   | <b>\$14.53</b>       | <b>\$11.50</b>  | <b>\$0.09</b>    | <b>\$0.22</b>                     | <b>\$26.34</b>  |
| <b>Maryland</b>                                 |                      |                 |                  |                                   |                 |
| Montgomery County                               | \$15.40              | \$8.60          | \$0.02           | \$1.86                            | \$25.88         |
| Prince George's County                          | \$10.51              | \$10.25         | \$0.03           | \$3.09                            | \$23.88         |
| <b>All Other Maryland</b>                       | <b>\$11.26</b>       | <b>\$4.34</b>   | <b>\$0.03</b>    | <b>\$2.61</b>                     | <b>\$18.24</b>  |
| <b>Subtotal - Maryland</b>                      | <b>\$37.17</b>       | <b>\$23.19</b>  | <b>\$0.09</b>    | <b>\$7.55</b>                     | <b>\$68.00</b>  |
| <b>Total Impacts</b>                            |                      |                 |                  |                                   |                 |
|   | <b>\$144.87</b>      | <b>\$65.88</b>  | <b>\$0.53</b>    | <b>\$12.11</b>                    | <b>\$223.39</b> |

1/ Total estimated personal income taxes from direct Airports Authority and on-airport tenant employment and annual spending related to capital program, operations and maintenance, airport passenger visitor spending and airport-dependent industries.

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

Table 28: Total State &amp; Local Sales Tax Impacts, 2012

| Total State & Local Sales Taxes, 2012 (\$ Millions) | Dulles International | Reagan National | Dulles Toll Road | Dulles Corridor Metrorail Project | Total /1        |
|---|----------------------|-----------------|------------------|-----------------------------------|-----------------|
| <b>VIRGINIA</b>                                     |                      |                 |                  |                                   |                 |
| Alexandria City                                     | \$19.06              | \$11.24         | \$0.03           | \$0.41                            | \$30.75         |
| Arlington County                                    | \$46.40              | \$33.49         | \$0.04           | \$0.45                            | \$80.38         |
| Clarke County                                       | \$3.54               | \$0.41          | \$-              | \$-                               | \$3.95          |
| Fairfax County                                      | \$40.78              | \$9.84          | \$0.35           | \$4.37                            | \$55.34         |
| Fairfax City  | \$16.10              | \$2.76          | \$0.01           | \$0.07                            | \$18.94         |
| City of Falls Church                                | \$4.82               | \$0.82          | \$0.01           | \$0.08                            | \$5.72          |
| Fauquier County                                     | \$5.11               | \$0.69          | \$0.01           | \$0.18                            | \$6.00          |
| Loudoun County                                      | \$28.61              | \$4.55          | \$0.09           | \$1.10                            | \$34.35         |
| Manassas City                                       | \$11.94              | \$2.05          | \$0.01           | \$0.08                            | \$14.08         |
| Manassas Park City                                  | \$2.37               | \$0.38          | \$0.00           | \$0.02                            | \$2.78          |
| Prince William County                               | \$11.11              | \$3.14          | \$0.13           | \$1.52                            | \$15.91         |
| All Other Virginia                                  | \$33.82              | \$5.48          | \$0.17           | \$2.13                            | \$41.60         |
| <b>Subtotal - Virginia</b>                          | <b>\$223.65</b>      | <b>\$74.87</b>  | <b>\$0.85</b>    | <b>\$10.41</b>                    | <b>\$309.79</b> |
| <b>District of Columbia</b>                         |                      |                 |                  |                                   |                 |
|   | <b>\$286.33</b>      | <b>\$226.55</b> | <b>\$1.68</b>    | <b>\$4.36</b>                     | <b>\$518.91</b> |
| <b>Maryland</b>                                     |                      |                 |                  |                                   |                 |
| Montgomery County                                   | \$33.71              | \$18.83         | \$0.04           | \$4.06                            | \$56.65         |
| Prince George's County                              | \$23.01              | \$22.44         | \$0.08           | \$6.76                            | \$52.28         |
| <b>All Other Maryland</b>                           | <b>\$24.65</b>       | <b>\$9.50</b>   | <b>\$0.07</b>    | <b>\$5.71</b>                     | <b>\$39.92</b>  |
| <b>Subtotal - Maryland</b>                          | <b>\$81.37</b>       | <b>\$50.77</b>  | <b>\$0.19</b>    | <b>\$16.54</b>                    | <b>\$148.85</b> |
| <b>Total Impacts</b>                                |                      |                 |                  |                                   |                 |
|   | <b>\$591.35</b>      | <b>\$352.18</b> | <b>\$2.72</b>    | <b>\$31.30</b>                    | <b>\$977.55</b> |

1/ Total estimated state and local sales taxes from direct Airports Authority and on-airport tenant employment and annual spending related to capital program, operations and maintenance, airport passenger visitor spending and airport-dependent industries. Total taxes are presented with the caveat that an unknown portion of total state and local taxes are remitted back to the state by localities as determined by individual jurisdictional tax rates.

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.

Table 29: Total Real Property Tax Impacts, 2012

| Total Real Property Taxes, 2012 (\$ Millions) | Dulles International | Reagan National | Dulles Toll Road | Dulles Corridor Metrorail Project | Total /1        |
|---|----------------------|-----------------|------------------|-----------------------------------|-----------------|
| <b>VIRGINIA</b>                               |                      |                 |                  |                                   |                 |
| Alexandria City                               | \$24.71              | \$14.58         | \$0.04           | \$0.53                            | \$39.86         |
| Arlington County                              | \$60.16              | \$43.42         | \$0.05           | \$0.58                            | \$104.20        |
| Clarke County                                 | \$4.58               | \$0.54          | \$0.0            | \$0.0                             | \$5.12          |
| Fairfax County                                | \$52.87              | \$12.75         | \$0.45           | \$5.67                            | \$71.74         |
| Fairfax City                                  | \$20.88              | \$3.58          | \$0.01           | \$0.09                            | \$24.56         |
| City of Falls Church                          | \$6.24               | \$1.06          | \$0.01           | \$0.11                            | \$7.42          |
| Fauquier County                               | \$6.63               | \$0.90          | \$0.02           | \$0.23                            | \$7.77          |
| Loudoun County                                | \$37.09              | \$5.90          | \$0.12           | \$1.43                            | \$44.54         |
| Manassas City                                 | \$15.48              | \$2.66          | \$0.01           | \$0.11                            | \$18.26         |
| Manassas Park City                            | \$3.07               | \$0.50          | \$0.00           | \$0.03                            | \$3.60          |
| Prince William County                         | \$14.40              | \$4.08          | \$0.17           | \$1.98                            | \$20.62         |
| All Other Virginia                            | \$43.84              | \$7.11          | \$0.22           | \$2.76                            | \$53.93         |
| <b>Subtotal - Virginia</b>                    | <b>\$289.95</b>      | <b>\$97.06</b>  | <b>\$1.11</b>    | <b>\$13.50</b>                    | <b>\$401.62</b> |
| <b>District of Columbia</b>                   |                      |                 |                  |                                   |                 |
|   | <b>\$18.46</b>       | <b>\$14.61</b>  | <b>\$0.11</b>    | <b>\$0.28</b>                     | <b>\$33.46</b>  |
| <b>Maryland</b>                               |                      |                 |                  |                                   |                 |
| Montgomery County                             | \$36.19              | \$20.22         | \$0.05           | \$4.36                            | \$60.81         |
| Prince George's County                        | \$24.70              | \$24.08         | \$0.08           | \$7.26                            | \$56.13         |
| <b>All Other Maryland</b>                     | <b>\$26.46</b>       | <b>\$10.19</b>  | <b>\$0.07</b>    | <b>\$6.13</b>                     | <b>\$42.86</b>  |
| <b>Subtotal - Maryland</b>                    | <b>\$87.35</b>       | <b>\$54.50</b>  | <b>\$0.20</b>    | <b>\$17.75</b>                    | <b>\$159.80</b> |
| <b>Total Impacts</b>                          |                      |                 |                  |                                   |                 |
|   | <b>\$395.76</b>      | <b>\$166.17</b> | <b>\$1.42</b>    | <b>\$31.53</b>                    | <b>\$594.87</b> |

1/ Total estimated property taxes from direct Airports Authority and on-airport tenant employment and annual spending related to capital program, operations and maintenance, airport passenger visitor spending and airport-dependent industries.

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.



Table 30: Total Corporate Earnings Tax Impacts, 2012

| Total Corporate Earnings Taxes (\$ Millions) | Dulles International | Reagan National | Dulles Toll Road | Dulles Corridor Metrorail Project | Total /1         |
|--|----------------------|-----------------|------------------|-----------------------------------|------------------|
| <b>VIRGINIA</b>                              |                      |                 |                  |                                   |                  |
| Alexandria City                              | \$0.523              | \$0.308         | \$0.001          | \$0.011                           | \$0.843          |
| Arlington County                             | \$1.272              | \$0.918         | \$0.001          | \$0.012                           | \$2.204          |
| Clarke County                                | \$0.097              | \$0.011         | \$-              | \$-                               | \$0.108          |
| Fairfax County                               | \$1.118              | \$0.270         | \$0.010          | \$0.120                           | \$1.517          |
| Fairfax City                                 | \$0.442              | \$0.076         | \$0.000          | \$0.002                           | \$0.519          |
| City of Falls Church                         | \$0.132              | \$0.022         | \$0.000          | \$0.002                           | \$0.157          |
| Fauquier County                              | \$0.140              | \$0.019         | \$0.000          | \$0.005                           | \$0.164          |
| Loudoun County                               | \$0.784              | \$0.125         | \$0.003          | \$0.030                           | \$0.942          |
| Manassas City                                | \$0.327              | \$0.056         | \$0.000          | \$0.002                           | \$0.386          |
| Manassas Park City                           | \$0.065              | \$0.011         | \$0.000          | \$0.001                           | \$0.076          |
| Prince William County                        | \$0.305              | \$0.086         | \$0.004          | \$0.042                           | \$0.436          |
| All Other Virginia                           | \$0.927              | \$0.150         | \$0.005          | \$0.058                           | \$1.140          |
| <b>Subtotal - Virginia</b>                   | <b>\$6.132</b>       | <b>\$2.053</b>  | <b>\$0.023</b>   | <b>\$0.285</b>                    | <b>\$8.494</b>   |
| <b>District of Columbia</b>                  |                      |                 |                  |                                   |                  |
|  | \$58.685             | \$46.433        | \$0.344          | \$0.893                           | \$106.355        |
| <b>Maryland</b>                              |                      |                 |                  |                                   |                  |
| Montgomery County                            | \$1.085              | \$0.606         | \$0.001          | \$0.131                           | \$1.824          |
| Prince George's County                       | \$0.741              | \$0.722         | \$0.002          | \$0.218                           | \$1.683          |
| <b>All Other Maryland</b>                    | <b>\$0.794</b>       | <b>\$0.306</b>  | <b>\$0.002</b>   | <b>\$0.184</b>                    | <b>\$1.285</b>   |
| <b>Subtotal - Maryland</b>                   | <b>\$2.620</b>       | <b>\$1.635</b>  | <b>\$0.006</b>   | <b>\$0.532</b>                    | <b>\$4.793</b>   |
| <b>Total Impacts</b>                         |                      |                 |                  |                                   |                  |
|  | <b>\$67.437</b>      | <b>\$50.121</b> | <b>\$0.373</b>   | <b>\$1.711</b>                    | <b>\$119.642</b> |

1/ Total estimated corporate earnings taxes from direct Airports Authority and on-airport tenant employment and annual spending related to capital program, operations and maintenance, airport passenger visitor spending and airport-dependent industries.

Source: Airports Authority; IMPLAN Group, LLC; Willdan, 2013.



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