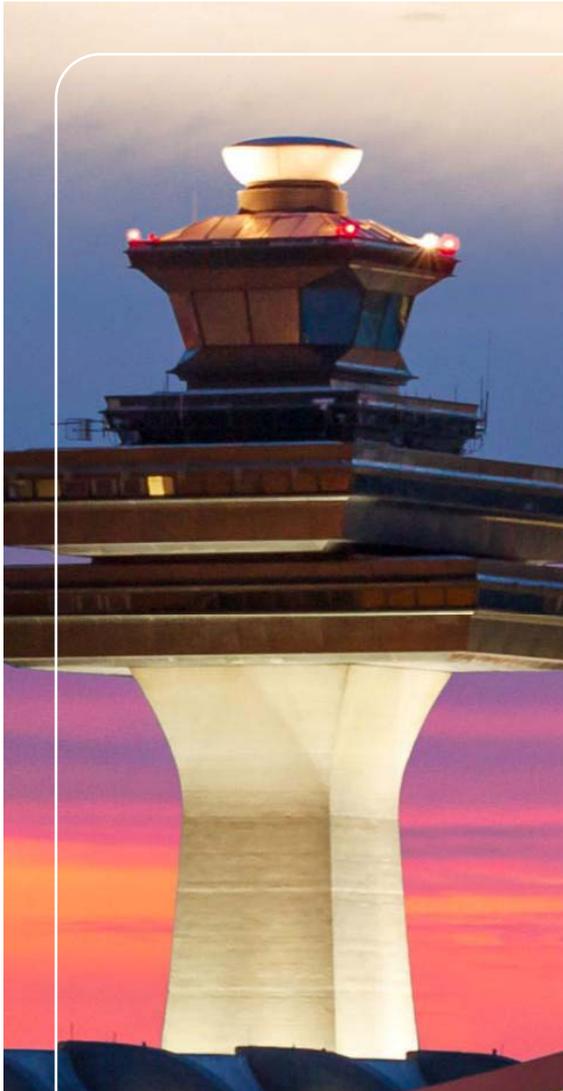


2012 Economic Impact Study



METROPOLITAN WASHINGTON
AIRPORTS AUTHORITY





Executive Summary



METROPOLITAN WASHINGTON
AIRPORTS AUTHORITY

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EXECUTIVE SUMMARY

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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 governors 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 42.2 million, up 3.5 percent from 2009. Of these passengers, 38 percent or approximately 8 million were visitors 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 2012 Airports 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-modal transportation services with the region's two major airports connecting this networked economy to the world.

This integrated multi-modal 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-modal 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 project).

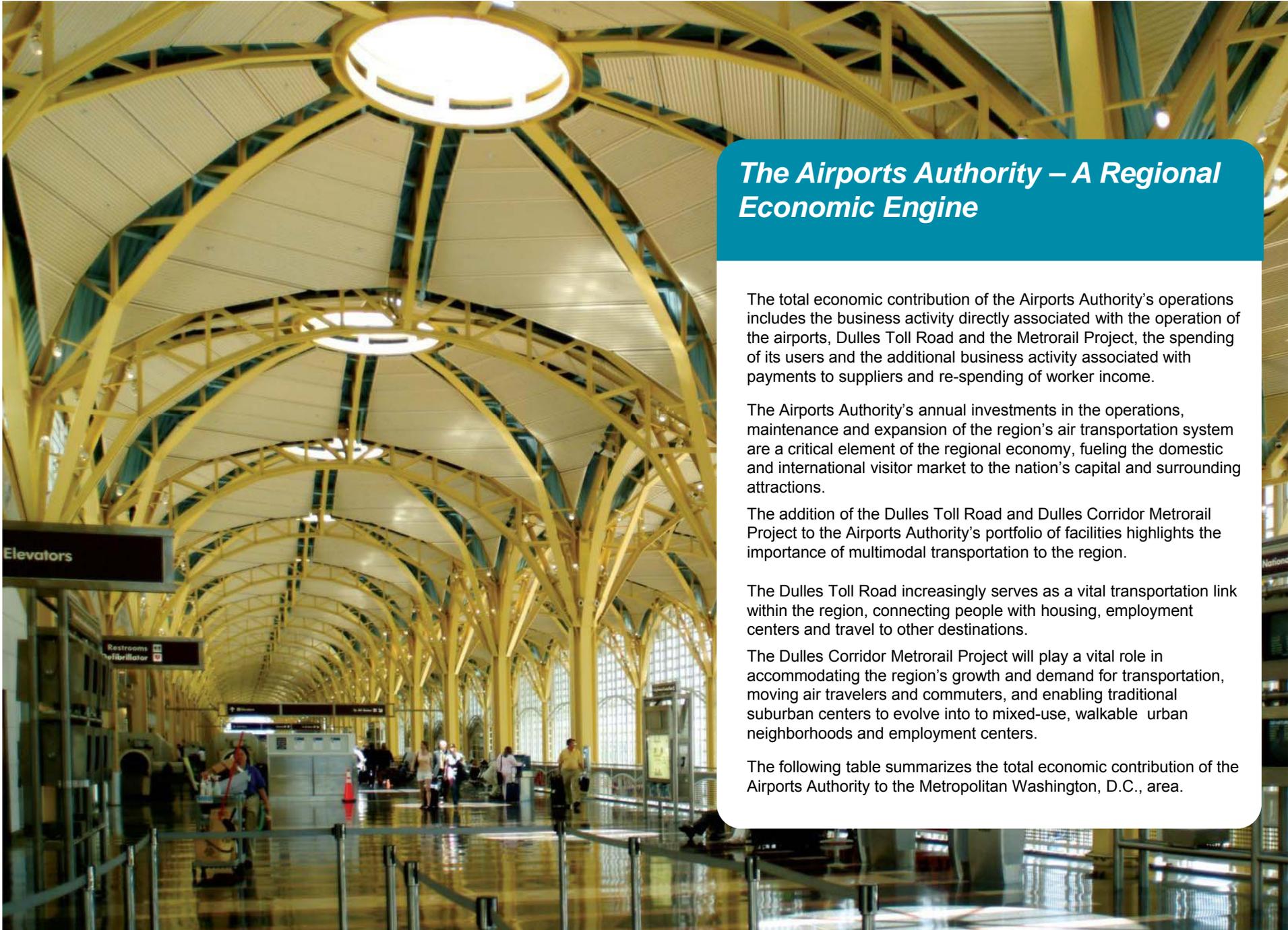
Airport facilities provide space for retail tenants, government agencies and other employers that collectively employ 26,078 people on site (excluding Airports Authority staff and flight crews). Combined with Airports Authority staff, on-site airport employment is 27,537 people.

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 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 are 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 (\$ Millions)	Direct Jobs	Total Jobs	Direct Payroll (\$ Millions)	Total Payroll (\$ Millions)
Aviation (On-Airport Operations)	\$386.3	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
Total ¹	\$988.70	227,709	387,068	\$7,699.5	\$15,362.6

¹Economic 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*
- *Total direct, indirect and induced aviation impacts are 49,032 jobs and \$2.4 billion in annual 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*
- *Combined direct economic activity (business revenues) is \$19.8 billion including aviation, capital programs, operations and maintenance expenditures and visitor industry spending*



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

Direct Jobs	Dulles International	Reagan National	Total ¹	Total Direct, Indirect & Induced Jobs	Dulles International	Reagan National	Total
Capital Program	1,620	896	2,516	Capital Program	2,580	1,427	4,008
On-Site Employment	19,371	8,166	27,537	On-Site Employment	34,492	14,540	49,032
Operations & Maintenance Spending	2,103	2,095	4,198	Operations & Maintenance Spending	3,219	3,206	6,426
Visitor Spending	111,202	61,871	173,073	Visitor Spending	187,922	104,557	292,478
Airport Dependent/ Freight	10,219	-	10,219	Airport Dependent/ Freight	19,493	-	19,493
Direct Jobs	144,515	73,028	217,542	Total Jobs	247,706	123,730	371,436
Direct Labor Income (\$ Millions)	Dulles International	Reagan National	Total	Total Direct, Indirect & Induced Labor Income (\$ Millions)	Dulles International	Reagan National	Total
Capital Program	\$95.4	\$54.1	\$149.5	Capital Program	\$147.7	\$83.5	\$231.3
On-Site Employment	\$1,079.7	\$429.3	\$1,508.9	On-Site Employment	\$1,719.3	\$683.6	\$2,402.9
Operations & Maintenance Spending	\$122.8	\$122.4	\$245.2	Operations & Maintenance Spending	\$181.7	\$181.0	\$362.7
Visitor Spending	\$2,984.4	\$1,660.5	\$4,644.9	Visitor Spending	\$6,712.9	\$3,734.9	\$10,447.8
Airport Dependent/ Freight	\$700.0	\$-	\$700.0	Airport Dependent/ Freight	\$1,188.4	\$-	\$1,188.4
Direct Labor Income	\$4,982.4	\$2,266.2	\$7,248.6	Total Labor Income	\$9,950.0	\$4,683.1	\$14,633.1

¹Totals 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 \$11.2 million in labor income*
- *Operations and maintenance spending: 410 direct jobs and \$18.4 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 mixed-use, walkable urban neighborhoods and employment centers

Summary of Economic Impacts

Jobs ¹		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	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

¹Job 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.

Source: Airports Authority; WBA Research; DestinationDC; Metropolitan Washington Council of Governments; IMPLAN Group, LLC, 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 Impacts¹		\$7,699.5	\$4,427.9	\$3,235.3	\$15,362.4

¹Totals 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 International	Reagan National	Dulles Toll Road	Dulles Corridor Metrorail Project	Total Impact ^{1,2}
VIRGINIA					
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
Total – Virginia	146,122	48,916	557	6,802	202,397
DISTRICT OF COLUMBIA					
Total - District of Columbia	68,345	54,076	400	1,040	123,862
MARYLAND					
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
Total - Maryland	33,239	20,738	78	6,755	60,808
TOTAL IMPACT – JOBS					
	247,706	123,730	1,035	14,597	387,068

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

² 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, LLC, Willdan, 2013.

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

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

¹Total impact includes direct, indirect and induced labor income (wages)

Source: Airports Authority; WBA Research; DestinationDC; Metropolitan Washington Council of Governments; IMPLAN Group, LLC; 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 jobs¹** and **\$4.40 billion in wages**.

Visitor Industry Spending (\$ Millions) ²	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
Total	5,016.9	5,795.5	1,712.6	12,525.0

¹Based 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.

²Allocation 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, LLC; 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 ¹	\$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
Total Tax Revenues	\$3,171.4

¹Includes personal income, real property, sales, and corporate earnings taxes as calculated by IMPLAN Group, Inc.

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



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

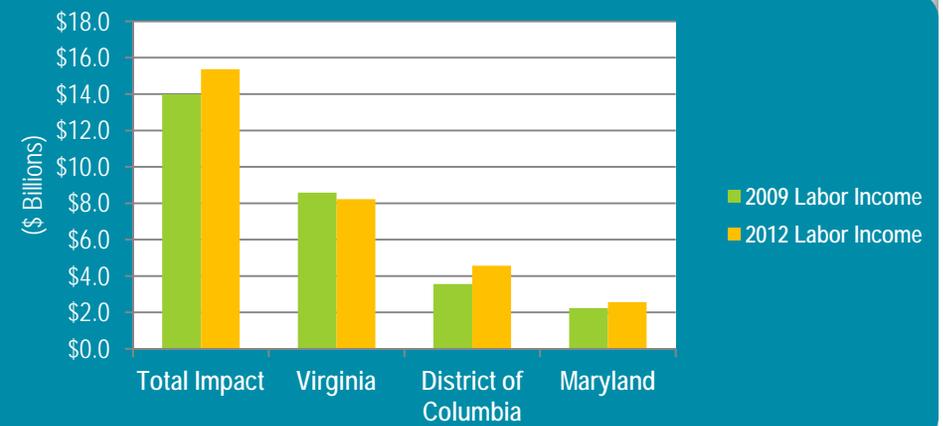
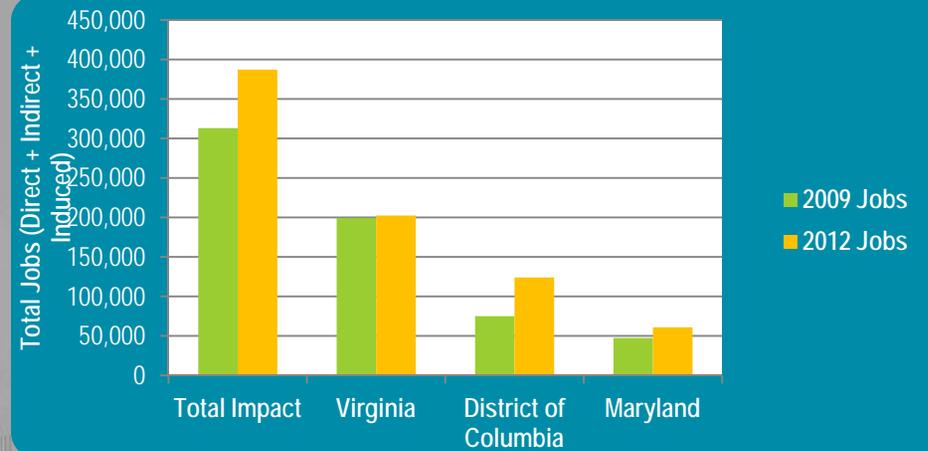
	Dulles International	Reagan National	Dulles Toll Road	Dulles Corridor Metrorail Project	Total Impact ¹
VIRGINIA					
Alexandria City	\$52.2	\$30.8	\$0.1	\$1.1	\$84.3
Arlington County	\$127.2	\$91.8	\$0.1	\$1.2	\$220.3
Clarke County	\$9.7	\$1.1	\$0.0	\$0.0	\$10.8
Fairfax County	\$111.8	\$27.0	\$1.0	\$12.0	\$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
Subtotal - Virginia	\$612.9	\$205.2	\$2.3	\$28.5	\$848.9
District of Columbia					
DISTRICT OF COLUMBIA	\$378.0	\$299.1	\$2.2	\$5.8	\$685.1
Maryland					
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
All Other Maryland	\$63.2	\$24.3	\$0.2	\$14.6	\$102.3
Subtotal - Maryland	\$208.5	\$130.1	\$0.5	\$42.4	\$381.4
Total Impacts	\$1,199.4	\$634.4	\$5.0	\$76.7	\$1,915.5

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

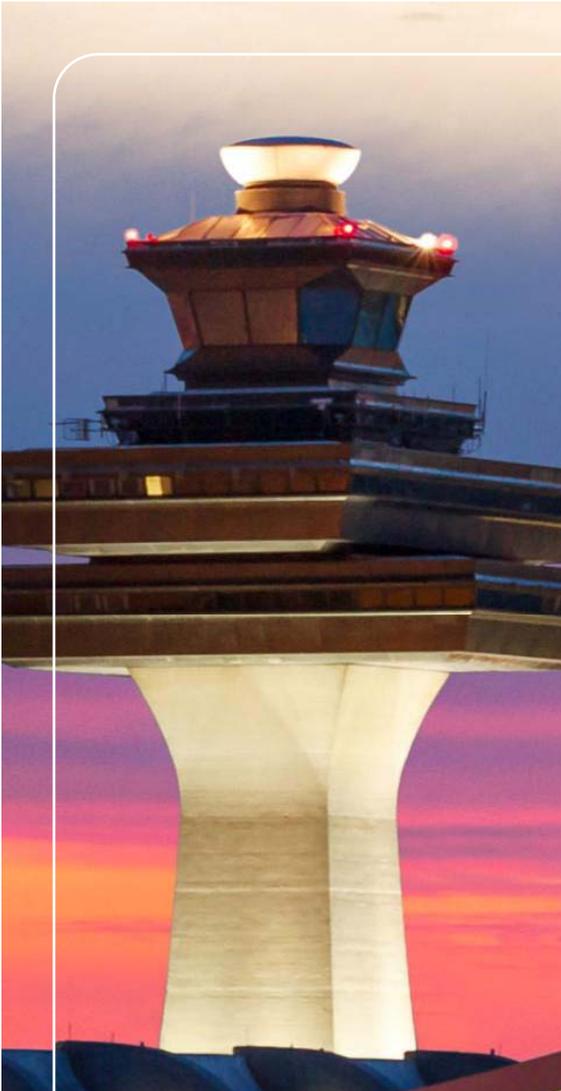
Source: Airports Authority; WBA Research; DestinationDC; Metropolitan Washington Council of Governments; IMPLAN Group, Inc., Willdan, 2013.

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.¹



¹The 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)

May 21, 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, as well as the Airports Authority's Capital Program expenditures associated with airport and Toll Road 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 system¹. 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.

¹ IMPLAN (IMpacts for PLANing) Version 3.1.1001.12, copyright 2013, IMPLAN Group, LLC, 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		
Arlington County		
Clarke County		
Fairfax City		
Fairfax County		Montgomery County
City of Falls Church	Washington, DC	Prince George's County
Fauquier County		All Other Maryland
Loudoun Country		
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 (\$ Millions)
Aviation (On-Airport Operations)	\$113.1
Dulles Toll Road	\$11.1
Dulles Corridor Metrorail Project	\$439.1
Total	\$563.3

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 (\$ Millions)
Aviation (On-Airport Operations)	\$179.2
Dulles Toll Road	\$16.5
Dulles Corridor Metrorail Project	\$33.7
Total	\$229.4

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 employees² in a structure that includes central administration, airports management and operations, police and fire departments, Dulles Toll Road and Dulles Corridor Metrorail Project.

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

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

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%
Total Payroll	\$206.6	100%

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 locally³ 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).

³ 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	
Total	34,492	14,540	49,032		Total	\$1,719.3	\$771.7	\$2,491.0	
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	
Total	30,694	8,851	39,545		Total	\$1,529.9	\$469.4	\$1,999.3	
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	
Total	1,012	1,427	2,439		Total	\$50.1	\$75.0	\$125.1	
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	
Total	2,786	4,262	7,048		Total	\$139.3	\$227.3	\$366.6	

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
Total	2,580	1,427	4,008				Total	\$147.7	\$83.5	\$231.3
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
Total	1,353	586	1,940				Total	\$70.0	\$30.3	\$100.3
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
Total	630	570	1,200				Total	\$39.8	\$36.0	\$75.7
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
Total	597	272	869				Total	\$38.0	\$17.3	\$55.3

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 services⁴ (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
Total	\$19.6	\$8.4	\$151.3	\$179.2

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).

⁴ 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 DC⁵), 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).

⁵ 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
Total	\$5,016.9	\$5,795.5	\$1,712.6	\$12,525.0

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
Total	187,922	104,557	292,478						Total	\$6,712.9	\$3,734.9	\$10,447.8
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
Total	101,301	37,797	139,099						Total	\$3,618.7	\$1,350.2	\$4,968.8
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
Total	65,332	51,297	116,629						Total	\$2,333.8	\$1,832.4	\$4,166.2
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
Total	21,288	15,463	36,751						Total	\$760.4	\$552.3	\$1,312.8

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 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 nationwide.

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

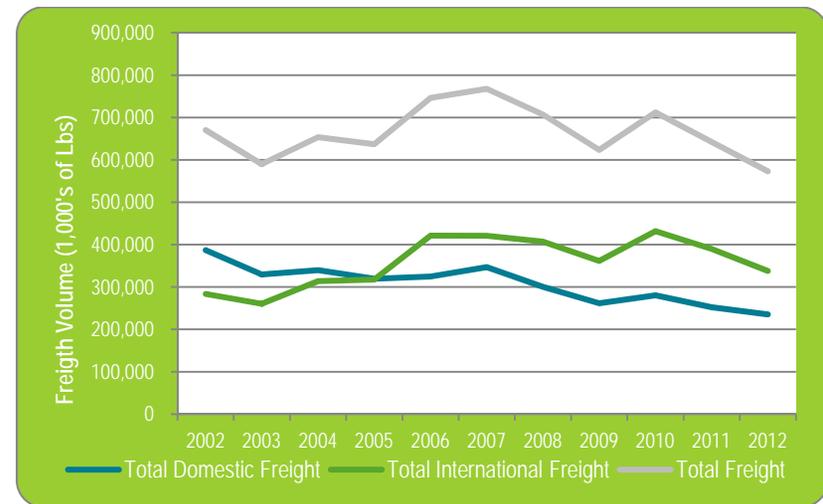


Figure 2: Mail and Freight Volume – Reagan National

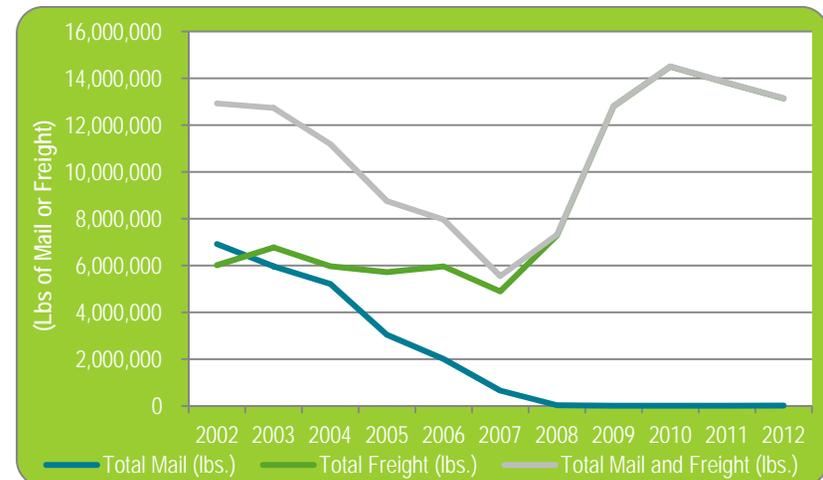


Table 13: Total Freight (1,000 lbs) Comparison: 2009 - 2012

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%
Total	636,124	586,032	-50,092	-7.9%

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 only⁶.

⁶ 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
Total	19,493		Total		\$1,188.4
VIRGINIA					
Direct	5,990		Direct		\$355.3
Indirect	2,986		Indirect		\$171.0
Induced	2,108		Induced		\$104.7
Total	11,084		Total		\$631.0
DISTRICT OF COLUMBIA					
Direct	349		Direct		\$21.1
Indirect	186		Indirect		\$13.1
Induced	51		Induced		\$2.9
Total	586		Total		\$37.2
MARYLAND					
Direct	3,880		Direct		\$323.5
Indirect	1,878		Indirect		\$98.7
Induced	2,065		Induced		\$97.9
Total	7,823		Total		\$520.2

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/ Freight	TOTAL IMPACTS Total	Impact Type	Capital	Direct Jobs	O&M Spending	Visitor Spending	Airport Depend-ent/ Freight	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 OF COLUMBIA														
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&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
Total	1,427	14,540	3,206	104,557	123,730		Total	\$83.5	\$683.6	\$181.0	\$3,734.9	\$4,683.1
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
Total	586	8,851	1,682	37,797	123,730		Total	\$30.3	\$469.4	\$94.9	\$1,350.2	\$1,944.8
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
Total	570	1,427	783	51,297	54,076		Total	\$36.0	\$75.0	\$44.2	\$1,832.4	\$1,987.5
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
Total	272	4,262	742	15,463	20,738		Total	\$17.3	\$139.3	\$41.9	\$552.3	\$750.8

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 \$1.5 million in that same year (Table 17). In total, 46 jobs and \$2.4 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 \$27.9 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 \$48.2 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			TOTAL IMPACTS				DIRECT EMPLOYMENT		
Impact Type	Jobs	Labor Income (\$ Millions)					Impact Type	Jobs	Labor Income (\$ Millions)
Direct	246	\$11.2					Direct	30	\$1.5
Indirect	57	\$3.5					Indirect	7	\$0.4
Induced	76	\$3.3					Induced	9	\$0.4
Total	379	\$18.0					Total	46	\$2.4
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 (\$ Millions)		
Impact Type	Total	TOTAL IMPACTS		Impact Type	Total
Direct	410			Direct	\$18.4
Indirect	77			Indirect	\$4.3
Induced	123			Induced	\$5.2
Total	609			Total	\$27.9
VIRGINIA					
Direct	214			Direct	\$9.6
Indirect	40			Indirect	\$2.3
Induced	64			Induced	\$2.7
Total	319			Total	\$14.6
DISTRICT OF COLUMBIA					
Direct	165			Direct	\$7.4
Indirect	31			Indirect	\$1.7
Induced	49			Induced	\$2.1
Total	246			Total	\$11.2
MARYLAND					
Direct	30			Direct	\$1.3
Indirect	6			Indirect	\$0.3
Induced	9			Induced	\$0.4
Total	44			Total	\$2.0

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

Table 20: Total 2012 Dulles Toll Road Economic Impacts

TOTAL 2012 DULLES TOLL ROAD ECONOMIC IMPACTS: Capital Program Spending + Direct Employment + Operations & Maintenance Spending				
Jobs			Labor Income (\$ Millions)	
Impact Type	Total	TOTAL IMPACTS	Impact Type	Total
Direct	686		Direct	\$31.1
Indirect	140		Indirect	\$8.2
Induced	208		Induced	\$8.9
Total	1,035		Total	\$48.2
VIRGINIA				
Direct	369		Direct	\$16.5
Indirect	76		Indirect	\$4.5
Induced	112		Induced	\$4.7
Total	557		Total	\$25.7
DISTRICT OF COLUMBIA				
Direct	266		Direct	\$11.8
Indirect	54		Indirect	\$3.2
Induced	81		Induced	\$3.4
Total	400		Total	\$18.3
MARYLAND				
Direct	51		Direct	\$2.8
Indirect	10		Indirect	\$0.6
Induced	15		Induced	\$0.8
Total	77		Total	\$4.1

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 (\$ Millions)		TOTAL IMPACTS	Jobs		Labor Income (\$ 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	
Total	13,290	Total	\$619.5		Total	28	Total	\$3.0	
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	
Total	6,171	Total	\$282.9		Total	25	Total	\$2.6	
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	
Total	949	Total	\$53.4		Total	-	Total	\$0.0	
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	
Total	6,171	Total	\$282.9		Total	3	Total	\$0.4	

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
Total	1,279			Total	\$58.8
VIRGINIA					
Direct	396			Direct	\$17.8
Indirect	88			Indirect	\$4.9
Induced	122			Induced	\$5.2
Total	607			Total	\$27.9
DISTRICT OF COLUMBIA					
Direct	60			Direct	\$2.7
Indirect	13			Indirect	\$0.7
Induced	18			Induced	\$0.8
Total	91			Total	\$4.2
MARYLAND					
Direct	379			Direct	\$17.0
Indirect	84			Indirect	\$4.7
Induced	117			Induced	\$4.9
Total	581			Total	\$26.7

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: Capital Program Spending + Direct Employment + Operations & Maintenance Spending					
Jobs			Labor Income (\$ 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
Total	14,597			Total	\$681.3
VIRGINIA					
Direct	4,418			Direct	\$193.5
Indirect	1,012			Indirect	\$62.1
Induced	1,372			Induced	\$57.8
Total	6,802			Total	\$313.4
DISTRICT OF COLUMBIA					
Direct	676			Direct	\$35.5
Indirect	155			Indirect	\$11.7
Induced	210			Induced	\$10.7
Total	1,040			Total	\$57.9
MARYLAND					
Direct	4,386			Direct	\$190.9
Indirect	1,005			Indirect	\$61.7
Induced	1,362			Induced	\$57.4
Total	6,755			Total	\$310.0

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	
Total	247,706	123,730	1,035	14,597	387,068	
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	
Total	146,122	48,916	557	6,802	202,397	
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	
Total	68,345	54,076	400	1,040	123,862	
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	
Total	33,239	20,738	78	6,755	60,809	

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	
Total	\$9,950.0	\$4,683.1	\$48.2	\$681.3	\$15,362.6	
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	
Total	\$5,944.9	\$1,944.8	\$25.7	\$313.4	\$8,228.8	
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	
Total	\$2,505.2	\$1,987.5	\$18.3	\$57.9	\$4,568.9	
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	
Total	\$1,500.0	\$750.8	\$4.1	\$310.0	\$2,564.9	

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 report⁷, 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).

⁷ 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
VIRGINIA					
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
Subtotal - Virginia	\$93.17	\$31.19	\$0.36	\$4.34	\$129.05
District of Columbia					
	\$14.53	\$11.50	\$0.09	\$0.22	\$26.34
Maryland					
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
All Other Maryland	\$11.26	\$4.34	\$0.03	\$2.61	\$18.24
Subtotal - Maryland	\$37.17	\$23.19	\$0.09	\$7.55	\$68.00
Total Impacts					
	\$144.87	\$65.88	\$0.53	\$12.11	\$223.39

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 & 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
VIRGINIA					
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
Subtotal - Virginia	\$223.65	\$74.87	\$0.85	\$10.41	\$309.79
District of Columbia					
	\$286.33	\$226.55	\$1.68	\$4.36	\$518.91
Maryland					
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
All Other Maryland	\$24.65	\$9.50	\$0.07	\$5.71	\$39.92
Subtotal - Maryland	\$81.37	\$50.77	\$0.19	\$16.54	\$148.85
Total Impacts					
	\$591.35	\$352.18	\$2.72	\$31.30	\$977.55

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
VIRGINIA					
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
Subtotal - Virginia	\$289.95	\$97.06	\$1.11	\$13.50	\$401.62
District of Columbia					
	\$18.46	\$14.61	\$0.11	\$0.28	\$33.46
Maryland					
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
All Other Maryland	\$26.46	\$10.19	\$0.07	\$6.13	\$42.86
Subtotal - Maryland	\$87.35	\$54.50	\$0.20	\$17.75	\$159.80
Total Impacts					
	\$395.76	\$166.17	\$1.42	\$31.53	\$594.87

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
VIRGINIA					
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 Country	\$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
Subtotal - Virginia	\$6.132	\$2.053	\$0.023	\$0.285	\$8.494
District of Columbia					
	\$58.685	\$46.433	\$0.344	\$0.893	\$106.355
Maryland					
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
All Other Maryland	\$0.794	\$0.306	\$0.002	\$0.184	\$1.285
Subtotal - Maryland	\$2.620	\$1.635	\$0.006	\$0.532	\$4.793
Total Impacts					
	\$67.437	\$50.121	\$0.373	\$1.711	\$119.642

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.



RENAISSANCE PLANNING GROUP

