Executive Summary

The Metropolitan Airports Commission engaged InterVISTAS Consulting LLC (InterVISTAS) to conduct an economic impact study to account for the operations of the Minneapolis-St. Paul International Airport (MSP) as of June 2012. The purpose of this study is to document the economic contribution of the airport, its airlines and their partner businesses to the community and the greater Minneapolis-St. Paul area.

Airports make substantial contributions to regional economies. They facilitate the movement of people, goods, and services throughout the nation and the world, allowing the economy to operate more efficiently. As the head of the Federal Aviation Administration’s Air Traffic Organization noted, “In today’s ever-changing and innovative world, aviation provides a vital link to economic opportunities at home and abroad. In the wake of global economic and financial uncertainties, runways have become the new main streets for cities and towns to get down to business and soar once more.” Aviation is also critical for local and regional tourism. Air transportation is a major means of bringing in tourists and their related spending on food, hotel, entertainment, and other items. Airports are also centers of significant economic activity themselves, as the locus of activity directly associated with passenger and cargo air travel.

Minneapolis-St. Paul International Airport enables domestic and international travel for local residents and visitors to the region. Through its cargo operations, MSP facilitates the trade and movement of time-sensitive products. As a center for employment in the region, MSP is also the origin of secondary spending and economic effects.

These various economic impacts are described below.

Economic Impact Defined

_Economic impact_ is a measure of the spending and employment associated with a sector of the economy, a specific project, or a change in government policy or regulation.

Economic impact is most commonly measured in several ways, including:

1. _Employment_ - person years (expressed in terms of “full time equivalents,” or FTEs) of employment generated. Because many jobs may be only part-time or seasonal, the number of jobs is greater than the number of person years of employment.

2. _Earnings_ – includes wages, salaries, and benefits associated with employment tied to the airport.

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1 Employment, earning (wage), GDP and economic output impacts are based on 2012 operations. Taxation impacts are based on the 2011 calendar year and are estimated separately, as are the sales tax impacts of visitor spending. See Section 7 of the full report for complete details tax impacts.

2 U.S. Department of Transportation, Federal Aviation Administration, _The Economic Impact of Civil Aviation on the U.S. Economy_, August 2011, Washington, D.C.

3 One person year is equivalent to 1,800 hours of work. Person years are the same as FTEs.
3. **Economic output** - the dollar value of industrial output produced. Sometimes referred to as “economic activity,” it reflects the spending (e.g., capital improvement plus revenue) by firms, organizations and individuals. In the case of organizations that do not generate revenue (e.g., government-provided air traffic control services), annual operating expenses are counted.

4. **Value-added or Gross Domestic Product (GDP)** - a measure of the money value of final goods and services produced as a result of economic activity. This measure is net of the value of intermediate goods and services used up to produce the final goods and services.

The three major components of economic impact are classified as direct, indirect and induced impacts. These classifications are used as a base for the estimation of total economic impact of an airport. Each of these three components requires different tools of analysis. Employment impact analysis determines the economic impact in terms of jobs created and salaries and wages paid out. In the case of the airport, the direct, indirect, induced and total number of person years of employment created at the airport is examined to produce a snapshot of airport operations.

- **Direct aviation sector impacts** account for the economic activity of the target sector itself. Direct employment impacts are measured by counting those individuals who work in a particular sector of the economy. In the case of an airport, all of those people who work in an aviation-related capacity either on-site or off-site would be considered direct employment (e.g. customer service, airline crew based at Minneapolis-St. Paul, ground handling, cleaning maintenance and airport staff members, etc.).

- **Indirect impacts** are the “downstream” impacts that result because of the direct impacts. For an airport, indirect impacts are the consequence of economic activities of the off-site firms that serve airport users. Indirect employment includes the portion of employment in supplier industries which are dependent on sales to the air transport sector. An example would be food wholesalers that supply food for catering on flights.

- **Induced impacts** are economic impacts created by the spending of wages, salaries and profits earned in the course of the direct and indirect economic activities. Induced employment is employment generated from expenditures by individuals employed indirectly or directly. For instance, if an airline maintenance firm employee decides to re-model his/her home, this would result in additional (induced) employment hours in the general economy. The home renovation project would support hours of induced employment in the construction industry, the construction materials industry, etc.

- **Direct visitor spending impacts** from visitors to a region that arrive and depart via the airport, rather than by other means, is considered a relevant economic impact. This includes spending on lodging, meals, entertainment, car rentals and retail. Direct employment associated with those industries is this counted as part of the economic impacts of the airport.

- **Total impacts** are the sum of direct, indirect and induced effects.
Figure ES-1 summarizes the various elements that account for the economic impact of an airport.

Figure ES-1: Economic Impact Overview - Airports

The focus of this study is on the economic impact of MSP on the Minneapolis-St. Paul regional economy and not the entire state of Minnesota. The core of that region is the seven counties of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington. This is the area where most of the economic activity directly associated with the airport’s operations is located and where the vast majority of employees reside. Thus, this report captures the economic effect of those who work at any of the firms or organizations surveyed, even if they live in outlying counties. However, it does not capture the economic effects associated with employees of airlines working in outlying communities (e.g., Duluth or Hibbing), even if they work for Delta Air Lines, the principal tenant at MSP. Similarly, the report does capture the impact of visitor spending to the extent that it occurs in the metropolitan area, but not any spending that occurred elsewhere in the state.

Methodology. InterVISTAS conducted this study during the summer and early fall of 2012. To calculate the direct effects, the study team surveyed all employers associated with economic activity at MSP (e.g., airlines, government agencies and ground handling firms) to determine the total number of individuals employed in directly-related occupations, as well as the total amount of earnings (wages) paid to those individuals. This included firms located both on-site at the airport and those located off-site. InterVISTAS estimated the indirect and induced effects using economic multipliers that are derived from models produced by the U.S. Bureau of Economic Analysis (BEA) on how U.S. and regional economies operate. To derive estimates of the economic impact of domestic and international visitor spending in the region, InterVISTAS commissioned an in-terminal survey of passengers at MSP. This survey was conducted in the summer of 2012. The estimates associated with each group of visitors are statistically reliable at a 95% confidence interval. These estimates were then applied to the 2012 MSP passenger traffic figures to deduce the total impact of visitor spending in the region. See Section 2 for a more detailed description of the study’s methodology.
Total Economic Impacts of Ongoing Operations at MSP

In total, ongoing operations at MSP generated an estimated 74,800 jobs, $2.9 billion in earnings, $5.6 billion in GDP, and $9.9 billion in economic output.

Including multiplier impacts, MSP operations and visitor spending generated over 74,800 jobs (66,300 person years of employment), close to $2.9 billion in earnings, $5.6 billion in GDP and approximately $9.9 billion in economic output. (Unless otherwise specified, all dollar figures cited are expressed in 2012 dollars.) The total direct impacts of MSP alone amount to over 44,300 jobs (equivalent to 39,200 person years of employment), $1.7 billion in earnings, generating close to $3.1 billion in GDP and approximately $5.6 billion in economic output. Total impacts are calculated by adding together the direct operations impacts, direct spending impacts, indirect impacts and induced impacts. The total economic impacts of ongoing operations at MSP on the regional economy are summarized in Table ES-1.

Table ES-1: Summary of Total Ongoing Economic Impacts of MSP in the Metropolitan Area

<table>
<thead>
<tr>
<th>Type of Impact</th>
<th>Employment (Jobs)</th>
<th>Employment (Person Years)</th>
<th>Earnings ($ Billions)</th>
<th>GDP ($ Billions)</th>
<th>Economic Output ($ Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Impacts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSP Operations</td>
<td>19,800</td>
<td>17,500</td>
<td>1.2</td>
<td>2.0</td>
<td>3.7</td>
</tr>
<tr>
<td>Visitor Spending</td>
<td>24,500</td>
<td>21,700</td>
<td>0.5</td>
<td>1.1</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Total Direct Impacts</strong></td>
<td><strong>44,300</strong></td>
<td><strong>39,200</strong></td>
<td><strong>1.7</strong></td>
<td><strong>3.1</strong></td>
<td><strong>5.6</strong></td>
</tr>
<tr>
<td>Indirect*</td>
<td>13,400</td>
<td>11,900</td>
<td>0.6</td>
<td>1.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Induced*</td>
<td>17,100</td>
<td>15,200</td>
<td>0.6</td>
<td>1.3</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Grand Total Impacts</strong></td>
<td><strong>74,800</strong></td>
<td><strong>66,300</strong></td>
<td><strong>2.9</strong></td>
<td><strong>5.6</strong></td>
<td><strong>9.9</strong></td>
</tr>
</tbody>
</table>

Note: * To avoid possibly double-counting impacts, these figures show only the indirect and induced impacts associated with ongoing MSP airport operations and do not include any indirect and induced impacts estimates from visitor spending. The indirect and induced effects of visitor spending include spending on aviation, which are already measured in the multiplier impacts of the airport. Consequently, the grand total impacts shown are conservative. Further explanation is provided in Section 6.5 of the full report.
Direct Economic Impacts of MSP Operations

Direct economic impact measures the employment and economic impact directly associated with the airport. This includes employment from organizations such as airlines, ground handling, airport operations, airport concessionaires, and air traffic control firms. Direct economic impacts are calculated based on employment data provided by employers.

The direct impacts of ongoing operations at MSP included:

- 19,800 direct jobs in the Minneapolis-St. Paul region, representing 17,500 direct person years of employment.

- The direct economic impact of this employment on the regional economy is:
  - $1.2 billion in earnings.
  - $2.0 billion in gross domestic product (GDP);
  - $3.7 billion in economic output.

The employment survey administered to employees at MSP and related businesses also revealed some interesting characteristics:

- 97% of jobs at MSP and related businesses are permanent (non-seasonal) and 89% of these are full-time jobs.
- Employees at MSP and other businesses linked to the airport earned over $1.2 billion in earnings, yielding an average annual wage of approximately $66,270 per person year of employment.
- Contract employees and firms providing services to MSP and related firms contributed close to 700 additional jobs, based on survey results.

Table ES-2 summarizes the residency of employees directly associated with MSP. Over half of the 19,800 employees directly associated with the operations of the airport live in Hennepin and Ramsey counties. Roughly 34% of the total direct employees are residents of St. Paul and Minneapolis (19% in St. Paul and 15% in Minneapolis). Additionally, roughly 20% of the employees associated with the airport reside in Dakota County. Overall, the seven-county region is home to roughly 90% of the total employees associated with the airport.
Spending by visitors arriving via MSP amounted to $1.9 billion and generated 24,500 direct jobs, $0.5 billion in direct earnings and $1.1 billion in GDP.

Table ES-2: Residency of Direct Employees at MSP

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Direct Jobs</th>
<th>Percent of Direct Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hennepin County</td>
<td>6,500</td>
<td>33%</td>
</tr>
<tr>
<td>(City of Minneapolis only)</td>
<td>(2,900)</td>
<td>(15%)</td>
</tr>
<tr>
<td>Ramsey County</td>
<td>4,700</td>
<td>24%</td>
</tr>
<tr>
<td>(City of St. Paul only)</td>
<td>(3,800)</td>
<td>(19%)</td>
</tr>
<tr>
<td>Dakota County</td>
<td>4,000</td>
<td>20%</td>
</tr>
<tr>
<td>Washington County</td>
<td>1,200</td>
<td>6%</td>
</tr>
<tr>
<td>Scott County</td>
<td>700</td>
<td>3%</td>
</tr>
<tr>
<td>Anoka County</td>
<td>600</td>
<td>3%</td>
</tr>
<tr>
<td>Carver County</td>
<td>200</td>
<td>1%</td>
</tr>
<tr>
<td>Other Minnesota*</td>
<td>1,500</td>
<td>8%</td>
</tr>
<tr>
<td>Other U.S.**</td>
<td>400</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total Employment</strong></td>
<td><strong>19,800</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Survey of employers by InterVISTAS.

Notes:
* “Other Minnesota” includes employees who reside in other cities and counties outside the seven-county region highlighted in the table.
** “Other U.S.” includes employees whose work is directly related to MSP, but who reside in Wisconsin.

Direct Economic Impact of Visitor Spending

Spending by visitors to the region also contributes substantially to the economic impact attributable to the airport, albeit less directly. The economic impact of visitor spending depends on the amount the visitors spend, the length of stay, and the different categories of spending – mostly in the hospitality sector. Spending on hotels, restaurants, retail, and entertainment support jobs and further spending in the region.
International visitors tend to spend more than domestic visitors and also tend to stay longer. The in-terminal survey of travelers conducted revealed that domestic visitors spent roughly $425 per trip and stayed 2 nights on average. The same survey revealed that international visitors spent approximately $720 per trip and stayed 5 nights on average. Using data obtained from the in-terminal survey and passenger traffic statistics at MSP, it is estimated that the total spending of visitors arriving via MSP is $1.9 billion per annum.

The U.S. BEA’s employment impact multipliers are used to estimate the direct employment generated by each dollar of visitor spending, as well as earnings and GDP.

This study found that the direct visitor spending impacts of MSP on the region in 2012 included:

- 24,500 direct jobs in the Minneapolis-St. Paul region, representing 21,700 direct person years of employment.
- The direct economic impact of this employment on the regional economy is:
  - $0.5 billion in earnings, and
  - $1.1 billion in gross domestic product (GDP).

The survey was not able to distinguish any separate amount that these visitors may have also spent elsewhere in Minnesota outside the metropolitan region. Consequently, these estimates should also be considered conservative in terms of the potential total economic impact of visitors.

### Indirect and Induced Economic Impacts

Indirect and induced impacts are those stimulated by the direct employment and activities at the airport (e.g., businesses that supply goods and services to the airport and spending by airport employees). These impacts are estimated using economic multipliers that are derived from intricate models of how the U.S. and regional economies operate.

This study found that the indirect and induced impacts of ongoing operations at MSP in 2012 included:

- 30,500 jobs in the Minneapolis-St. Paul region, representing 27,100 person years of employment.
- The indirect and induced economic impact of this employment on the regional economy is:
  - $1.2 billion in earnings
  - $2.5 billion in gross domestic product (GDP), and
  - $4.3 billion in economic output.
As noted under Table ES-1, to avoid possible double-counting, this study excluded any consideration of possible indirect and induced effects of visitor spending. Those effects are confounded with the multiplier impacts of the airport. Industries that supply and provide services to the tourism industry (which generates indirect impacts) include airlines. Similarly, the expenditures by individuals involved in the tourism industry (which generates the induced impacts) include the expenditures of airline employees. Consequently, our estimates of the total indirect and induced effects associated with the airport’s operations should be considered conservative.

**Economic Impacts of Capital Expenditures at MSP in 2012**

There are also economic impacts associated with the airport’s capital expenditures. Using economic multipliers, the economic impacts of the airport’s capital expenditures in 2012 were estimated. The economic effects of an airport’s capital development are considered separate from an airport’s ongoing operations because the capital spending can vary significantly over time on a project-by-project basis.

According to the Metropolitan Airports Commission, in 2012, MSP spent approximately $100 million dollars in capital expenditures. The spending generated 730 direct jobs and $30 million in direct earnings. The total economic impact of the airport’s 2012 capital expenditures is summarized in Table ES-3.

**MSP’s capital expenditures in 2012 generated 730 direct jobs and $30 million in direct earnings.**
Table ES-3: Total Economic Impact of MSP’s Capital Expenditures in 2012

<table>
<thead>
<tr>
<th>Type of Impact</th>
<th>Employment (Jobs)</th>
<th>Employment (Person Years)</th>
<th>Earnings ($ Millions)</th>
<th>GDP ($ Millions)</th>
<th>Economic Output ($ Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>730</td>
<td>650</td>
<td>30</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Indirect</td>
<td>340</td>
<td>300</td>
<td>20</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Induced</td>
<td>470</td>
<td>420</td>
<td>20</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td><strong>Total Impacts</strong></td>
<td><strong>1,540</strong></td>
<td><strong>1,370</strong></td>
<td><strong>70</strong></td>
<td><strong>110</strong></td>
<td><strong>220</strong></td>
</tr>
</tbody>
</table>

Combined Economic Impacts of MSP Operations, Visitor Spending and Capital Expenditures in 2012

Table ES-4 provides a summary of all the economic impacts associated with the MSP operations, visitor spending and capital spending in 2012.

Table ES-4: Combined Economic Impacts of MSP Operations, Visitor Spending & Capital Expenditures in 2012

<table>
<thead>
<tr>
<th>Type of Impact</th>
<th>Employment (Jobs)</th>
<th>Employment (Person Years)</th>
<th>Earnings ($ Billions)</th>
<th>GDP ($ Billions)</th>
<th>Economic Output ($ Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Direct Impacts</td>
<td>45,030</td>
<td>39,850</td>
<td>1.73</td>
<td>3.15</td>
<td>5.70</td>
</tr>
<tr>
<td>Total Indirect Impacts</td>
<td>13,740</td>
<td>12,200</td>
<td>0.62</td>
<td>1.23</td>
<td>2.16</td>
</tr>
<tr>
<td>Total Induced Impacts</td>
<td>17,570</td>
<td>15,620</td>
<td>0.62</td>
<td>1.33</td>
<td>2.26</td>
</tr>
<tr>
<td><strong>Grand Total Impacts</strong></td>
<td><strong>76,340</strong></td>
<td><strong>67,670</strong></td>
<td><strong>2.97</strong></td>
<td><strong>5.71</strong></td>
<td><strong>10.12</strong></td>
</tr>
</tbody>
</table>
Ongoing operations at MSP generated $611 million in government tax revenues.

Significant Tax Contributions

Ongoing economic activity at the airport contributes significant tax revenues to public authorities in the region.

- In 2011, total tax contributions from MSP-related employment to all levels of government were close to $611 million.⁴ (See Figure ES-2)
  - The federal government was the largest recipient of tax revenue, receiving just over $358 million (59% of total tax revenue).
  - The government of the State of Minnesota received close to $243 million in tax revenue (40% of total tax revenue).
  - Local governments (the counties in the metro area and various area cities) collected roughly $10 million in tax revenue (1% of total tax revenue).
- Approximately 27% of taxes were paid by air travelers, while 73% of taxes were paid by MSP employers and their employees.

Figure ES-2: Estimated Annual Tax Revenues to Each Level of Government

<table>
<thead>
<tr>
<th>Level of Government</th>
<th>Tax Revenue</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>$358 Million</td>
<td>59%</td>
</tr>
<tr>
<td>State</td>
<td>$243 Million</td>
<td>40%</td>
</tr>
<tr>
<td>Local</td>
<td>$10 Million</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total: $611 Million</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

⁴ Tax impacts are estimated separately from economic impacts, as the tax revenues generated by airport operations are different from the economic output of the airport. Tax impacts estimate income and payroll taxes and sales taxes on visitor spending, while economic output measures the spending of firms and individuals. Tax impacts are based on the 2011 calendar year.
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1 Introduction

The Metropolitan Airports Commission (MAC) engaged InterVISTAS Consulting LLC (InterVISTAS) to conduct an economic impact study of the Minneapolis-St. Paul International Airport (MSP).

Airports make substantial contributions to regional economies. Airports facilitate the movement of people, goods, and services throughout the nation and the world, allowing the economy to operate more efficiently. As the head of the Federal Aviation Administration’s Air Traffic Organization noted, “In today’s ever-changing and innovative world, aviation provides a vital link to economic opportunities at home and abroad. In the wake of global economic and financial uncertainties, runways have become the new main streets for cities and towns to get down to business and soar once more.”\(^5\) Aviation is a critical driver of local and regional tourism. Air transportation is a major means of bringing in tourists who spend money on food, lodging, retail, entertainment, and other items. Airports are also centers of significant economic activity themselves, as the location of activity directly associated with passenger and cargo air travel.

MSP contributes directly to the state and national Gross Domestic Product (GDP) and to employment in the Minneapolis-St. Paul region through its business and commercial activities and operations. More importantly, it also acts as an economic catalyst, facilitating the growth of regional businesses and industrial sectors. MSP enables domestic and international travel for local residents and visitors to the region. Through its cargo operations, MSP facilitates the trade and movement of time-sensitive products. The economic contribution of the airport to the community is termed its economic impact. This study examines the various aspects of that economic impact on the region’s economy.

1.1 Minneapolis-St. Paul International Airport

The Metropolitan Airports Commission operates one of the largest aviation systems in the United States, consisting of the Minneapolis-St. Paul International Airport and six reliever airports in the metropolitan area. See Figure 1-1 for a map of all the Metropolitan Airports Commission’s airport locations in the Minneapolis-St. Paul (Twin Cities) metropolitan area. This official metropolitan statistical area includes 11 counties in Minnesota and two in Wisconsin. The core metropolitan area includes seven counties surrounding the Twin Cities: Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington.

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\(^5\) U.S. Department of Transportation, Federal Aviation Administration, The Economic Impact of Civil Aviation on the U.S. Economy, August 2011, Washington, D.C.
Figure 1-1: MAC Airports in the Seven-County Metropolitan Area

Source: Metropolitan Airports Commission, 2011 Annual Report to the Legislature

MSP is the primary commercial service airport in Minnesota. MSP generates revenues from airport users, aviation grants, bonds, and passenger facility charges. MSP does not receive an appropriation from the State of Minnesota’s General Fund, nor has it levied local property taxes since 1969.6

In 1996, the Minnesota Legislature directed MSP to implement the 2010 Long-Term Comprehensive Plan. Since then, MSP carried out $3.2 billion in airport improvements at the present airport site. Virtually every aspect of MSP was transformed, with a major expansion of the Terminal 1-Lindbergh, a new Terminal 2-Humphrey, a new fourth runway, expanded roadways and parking, two automated airport trams, and development of a metropolitan light rail system connecting both MSP terminals to the Mall of America and downtown Minneapolis.

In 2012, MSP served 33.2 million passengers and accommodated over 425,000 landings and takeoffs. MSP was the 12th busiest airfield in the U.S. and ranked 15th in North America for number of travelers annually. According to MSP forecasts, total enplaned passengers are expected to

increase by more than 73%, while total aircraft operations (landings and takeoffs) are expected to grow by 40% by the year 2030. Continued airport improvements will be required in order to manage forecasted aircraft circulation.

MSP’s airfield is approximately 3,400 acres in size and consists of two parallel runways, one north-south runway and one crosswind runway (four runways total). MSP has two terminals: Terminal 1-Lindbergh and Terminal 2-Humphrey.

Figure 1-2 shows the change in passenger traffic at MSP from 2001 to 2012. Passenger totals include all revenue and non-revenue passengers that used traditional major air carrier services, regional air carriers or charter companies. A total of 33.2 million passengers arrived at and departed from MSP in 2012, which represents a minor increase over the 2011 level but a 12% decrease from the peak passenger volume level of 37.6 million in 2005.

![Figure 1-2: Total Passenger Traffic at MSP, 2001 - 2012](image)

Note: Total air passenger traffic includes all enplaned & deplaned passengers, as well as both revenue & non-revenue passengers.

Figure 1-3 shows the change in total aircraft operations (landings and takeoffs) at MSP. On average, roughly a half-million aircraft operations occur at MSP every year. In 2012, MSP handled over 425,000 operations. Most occur during daytime hours; however, to accommodate cargo business and flight schedule changes, some overnight operations are necessary.

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7 2030 MSP Long Term Comprehensive Plan
In July 2012, total direct non-stop scheduled services to MSP included over 429,000 seats per week (a traditional industry measure of capacity). These scheduled services included direct non-stop flights from MSP to 138 U.S. cities, 8 Canadian cities and 4 European cities. Since 2005, the capacity of total scheduled services at MSP decreased by 19%. Table 1-1 shows the change in available non-stop seat capacity from July 2005 to July 2012. Similar weeks in July were chosen for comparison purposes, as July is a popular month for seasonal travel at MSP.

Table 1-1: Direct Non-stop Scheduled Flights Arriving at MSP – July 2005 vs. July 2012

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>495,164</td>
<td>402,606</td>
<td>-19%</td>
</tr>
<tr>
<td>Canada</td>
<td>22,792</td>
<td>14,606</td>
<td>-36%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>5,670</td>
<td>5,257</td>
<td>-7%</td>
</tr>
<tr>
<td>Japan</td>
<td>4,030</td>
<td>1,887</td>
<td>-53%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1,890</td>
<td>1,722</td>
<td>-9%</td>
</tr>
<tr>
<td>France</td>
<td>N/A</td>
<td>1,701</td>
<td>N/A</td>
</tr>
<tr>
<td>Iceland</td>
<td>1,323</td>
<td>1,281</td>
<td>-3%</td>
</tr>
<tr>
<td>Mexico</td>
<td>310</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>531,179</strong></td>
<td><strong>429,060</strong></td>
<td><strong>-19%</strong></td>
</tr>
</tbody>
</table>

Delta Air Lines (Delta) is the largest air carrier at MSP. In 2012, Delta and its regional partners operated roughly 470 flights per day from MSP to more than 118 destinations worldwide. Including those associated with its regional partners, Delta’s market share of MSP passengers in 2012 was over 76%. Figure 1-4 shows the 2012 MSP revenue passenger market share by airline.

![Figure 1-4: MSP Revenue Passenger Market Share by Airline, 2012](image)

Source: Metropolitan Airports Commission Year End Statistic Reports – 2012

1.2 Industry and Economy

The Minneapolis-St. Paul metropolitan area is the most populous urban area in the state of Minnesota. The area is often referred to as the “Twin Cities” for its two largest cities, Minneapolis, with the largest population, and St. Paul, the state capital. The Minneapolis-St. Paul metropolitan area refers to the seven-county area, which is under the jurisdiction of the Metropolitan Council.9

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8 Data pulled for Delta Air Lines from OAG for a single day (9 July 2012).

9 The U.S. Census Bureau defines the Minneapolis-St. Paul-Bloomington Metropolitan Statistical Area (MSA) as a region that includes 11 counties in Minnesota and two in neighboring Wisconsin; this MSA had a recorded population of 3.3 million in 2010. This report will focus on impacts to the seven-county area entirely within Minnesota. That being said, any reference to U.S. Bureau of Economic Analysis data in this section will encompass the larger Minneapolis-St. Paul-Bloomington MSA.
The Twin Cities region grew by 208,000 people and 96,000 households between 2000 and 2010. The population of the seven-county Minneapolis-St. Paul area sits at approximately 2.9 million,\(^{10}\) while the larger 11-county Metropolitan Statistical Area (MSA) of Minneapolis-St. Paul-Bloomington has a population of roughly 3.3 million.\(^{11}\) Roughly 54% of Minnesotans (5.3 million) live in the seven-county region.\(^{12}\)

The Twin Cities population is well educated, with 38% of adults holding bachelor’s degrees. The Twin Cities’ population is the fifth most educated among the 25 largest MSAs. Located in the heart of the metropolitan area, the University of Minnesota is ranked among the nation’s top 20 public universities.\(^{13}\)

Average income per resident was $47,000 in 2010, which represents an average annual income increase of 2.5% per year from 2000 to 2010. In addition, the Twin Cities ranks second among the largest MSAs for middle income households, with 43% of households reporting an income between $40,000 and $99,000.\(^{14}\)

The Minneapolis-St. Paul region has a strong, diversified economy. The Twin Cities has the nation’s 13th largest metropolitan economy, with a reported Gross Metro Product of nearly $2.0 billion (in 2010).\(^{15}\) Of the 20 Fortune 500 companies located in Minnesota, 19 are headquartered in the Minneapolis-St. Paul region.\(^{16}\)

1.3 What is Economic Impact?

*Economic impact* is a measure of the spending and employment associated with a sector of the economy, a specific project, or a change in government policy or regulation.

_Economic impact_ is most commonly measured in several ways, including:

1. **Employment** – both jobs and full-time equivalent (FTE) employment generated. Because many jobs may be only part-time or seasonal, the number of jobs is greater than the number of person years of employment.

2. **Earnings** – includes wages, salaries, and benefits associated with employment tied to the airport.

3. **Economic output** - the dollar value of industrial output produced. Sometimes referred to as “economic activity,” it reflects the spending (i.e., capital improvement plus revenue) by firms, organizations and individuals. In the case of organizations that do not generate revenue (e.g., government-provided air traffic control services), annual operating expenses are counted.

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\(^{10}\) Metropolitan Council, *2012 Regional Economic Indicators* - 2010 U.S. Census

\(^{11}\) U.S. Census Bureau, *Annual Estimates of the Population of Metropolitan and Metropolitan Statistical Areas: April 1, 2010 to July 1, 2011*

\(^{12}\) U.S. Census Bureau, State & County Quick Facts, 2010.

\(^{13}\) U.S. Census Bureau, State & County Quick Facts, 2010.

\(^{14}\) U.S. Census Bureau, State & County Quick Facts, 2010.

\(^{15}\) Metropolitan Council, *2012 Regional Economic Indicators* – Bureau of Economic Analysis, Regional Economic Accounts

\(^{16}\) Metropolitan Council, *2012 Regional Economic Indicators* – Fortune Magazine
4. **Value-added or Gross Domestic Product (GDP)** - a measure of the money value of final goods and services produced as a result of economic activity. This measure is net of the value of intermediate goods and services used up to produce the final goods and services.

The three major components of economic impact are classified as *direct, indirect* and *induced* impacts. These classifications are used as a base for the estimation of total economic impact of an airport. Each of these three components requires different tools of analysis. Employment impact analysis determines the economic impact in terms of jobs created and salaries and wages paid out. In the case of the airport, the direct, indirect, induced and total number of person years of employment created at the airport is examined to produce a snapshot of airport operations.

- **Direct aviation sector impacts** account for the economic activity of the target sector itself. Direct employment impacts are measured by counting those individuals who work in a particular sector of the economy. In the case of an airport, all of those people who work in an aviation-related capacity either on-site or off-site would be considered direct employment (e.g. customer service, airline crew based at Minneapolis-St. Paul, ground handling, cleaning, maintenance and airport staff members, etc.).

- **Indirect impacts** are those that result because of the direct impacts. For an airport, indirect impacts are the consequence of economic activities of the off-site firms that serve airport users. Indirect employment includes the portion of employment in supplier industries which are dependent on sales to the air transport sector. An example would be food wholesalers that supply food for catering on flights.

- **Induced impacts** are economic impacts created by the spending of wages, salaries and profits earned in the course of the direct and indirect economic activities. Induced employment is employment generated from expenditures by individuals employed indirectly or directly. For instance, if an airline maintenance firm employee decides to re-model his/her home, this would result in additional (induced) employment hours in the general economy. The home renovation project would support hours of induced employment in the construction industry, the construction materials industry, etc. Induced impact is often called the household-spending effect.

- **Direct visitor spending impacts** from visitors to a region that arrive and depart via the airport, rather than by other means, is considered a relevant economic impact. This includes visitor spending on lodging, meals, entertainment, transportation and retail. The direct employment associated with these categories of spending are counted as part of the economic impact of the airport.

- **Total impacts** are the sum of direct, indirect and induced effects.

*Figure 1-5* illustrates the various elements that account for the economic impact of an airport.
Figure 1-5: Economic Impact Overview – Airports

- Airline Operations
- Airport Tenants
- Air Traffic Control
- Customs & Security
- Airport Operations
- General Aviation Operations
- Concessions
- Other

Direct Impacts

Indirect Impacts

Induced Impacts

Re-spending of earnings by employees and businesses

Local Tax Impacts

Total Impacts

Direct Visitor Spending

Passenger Spending in Region:
- Lodging
- Meals
- Recreation
- Car Rentals
- Other

Impacts associated with down-stream suppliers industries
2 Methodology

2.1 Overview

InterVISTAS conducted this economic impact study during the summer and early fall of 2012. The study is based on employment data collected from survey respondents up to June 2012.

To calculate the direct employment impacts, the study team surveyed all the employers associated with the operation of MSP (e.g., airlines, ground handling firms, caterers, etc.) in order to determine the number of individuals employed in directly related occupations, as well as the amount of wages paid out to those individuals. The firms surveyed as part of this study are located both on the airport site (on-site) and off the airport site (off-site). The employment survey was used to classify the total employment and average wages paid out by business type. In turn, this data was used to calculate the associated tax impacts (government revenue) generated by the airport’s operations.

InterVISTAS estimated the indirect and induced effects using economic multipliers derived from models of how the U.S. and regional economies operate. InterVISTAS utilizes a proprietary model in order to conduct multiplier analysis and estimate indirect and induced impacts.

To derive estimates of the impact of non-local domestic and international visitors arriving and departing from MSP, InterVISTAS commissioned an on-site in-terminal survey during the summer of 2012.

Wherever possible, the results of this study were validated and measured against recognized and reliable external sources.

2.2 Estimating Current Economic Impact

Direct employment related to ongoing operations at MSP is measured first. Employment figures are generally more understandable by the public than more abstract measures, such as economic output or GDP. Employment figures also have the advantage of being a more accurate measure, both because firms are more likely to provide data on employment rather than information on revenues, earnings and other monetary amounts, and because there is less chance of double counting economic activity. For example, revenues reported by an air carrier would double count revenues received by caterers. The caterer's revenue is an expense for the airline.

The study team then assessed the indirect and induced (or “multiplier”) employment supported by MSP’s operations, as well as economic activity in terms of economic output and GDP using U.S. Bureau of Economic Analysis multipliers. The tax revenues generated annually by operations at MSP are also estimated.

2.3 Surveying Direct Employment

Employment attributable to ongoing MSP operations was measured by surveying 209 tenants and related businesses economically linked to the airport. The surveyed firms include on-site airport tenants (e.g. airlines), off-site firms associated with airport operations (e.g., courier companies) and hotels in the surrounding region. Specifics of the survey methodology are contained in the Appendices, including a description of the sampling techniques in Appendix A. Telephone and
email follow-ups were conducted to increase the response rate. In total, 80% of the businesses and organizations contacted responded to the survey, representing nearly 80% of total person years of employment covered by the survey. A summary is provided in Figure 2-1. In total, 71 survey responses were received from MSP on-site tenants, which amount to an 83% response rate for this employment category. Appendix A shows a breakdown of survey responses by firm type.

The employment information for ground transportation firms was collected and analyzed in a slightly different manner than the other employment types. Ground transportation firms include taxi, shuttle, limo and private vehicle service providers that operate to and from MSP. An employment estimate for associated ground transportation firms was calculated based on data collected by the Metropolitan Airports Commission and provided to InterVISTAS. See Appendix B for a description of how the employment impacts for ground transportation firms were determined.

**Figure 2-1: Response Rate (Employers and Person Years)**

<table>
<thead>
<tr>
<th>Survey Response</th>
<th>Total PY of Employment Covered by Survey Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% Responding</td>
<td>20% Responding</td>
</tr>
<tr>
<td>80% Non-Responding</td>
<td>80% Non-Responding</td>
</tr>
</tbody>
</table>

### 2.4 Inferring Employment

For non-responding firms, employment was conservatively estimated using a proven and accepted methodology. This methodology includes referencing the survey results of similar firms or using credible external sources like the U.S. Bureau of Labor Statistics.

There may be firms that were not surveyed because it was not known that they existed. An estimate of employment for these non-surveyed firms was not provided because there was no basis for an assessment. If there were any omissions, it is expected that the volume of missed employment would be minimal (See Appendix C and Appendix D).
2.5 Estimating Indirect and Induced Impacts with Economic Multipliers

Measurement of indirect and induced economic activity is difficult. While it may be possible to conduct a survey of downstream employers, the survey would need to cover thousands of firms in order to completely cover indirect employment. For induced employment, the entire economy would need to be scrutinized. In addition to the time and financial resources needed to conduct such surveys, the quality of responses would be suspect.

As an alternative to costly and inaccurate surveys, indirect and induced effects are typically measured using economic multipliers. Multipliers are derived from models of the general economy. They come in a variety of forms and differ greatly in definition and application.

InterVISTAS purchased the multipliers used for this study from U.S. Bureau of Economic Analysis (BEA). Those multipliers are based on BEA’s most recent Regional Input-Output Modeling System (RIMS II). RIMS II is based on a highly detailed accounting of national and regional economic structures or relationships. The model tracks how the goods and services produced by industry are used by other industries and final users. RIMS II adjusts these national relationships to account for regional supply conditions.

The specific multipliers selected for this study effectively model the economy of the seven-county core metro area -- Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington counties. This region – rather than other potential geographic areas, such as the entire State of Minnesota -- was selected based on the concentration of airport- and airline-related employers in the area, the economic relationship among those firms and organizations, and the residency of the vast majority of employees.

In addition, the use of multiplier analysis is limited by a number of factors, these being:

- the accuracy of the structure and parameters of the underlying model;
- the level of unemployment in the economy;
- the assumption of constant returns to scale in production;
- the assumption that the economy's structure is static over time; and
- the assumption that there are no displacement effects.

Appendix E includes additional information on the selection of these specific multipliers.

2.6 Study Time Frame

The employment survey was conducted between July and September 2012 and the results reflect employment as of June 2012.

2.7 Jobs versus Person Years of Employment

Traditionally, one measures employment by the number of jobs. However, when part-time and/or seasonal workers are used, this can be a misleading measure resulting in an overstatement of economic impact. Whenever possible, employment impacts are measured both in terms of the
number of jobs and the number of full-time equivalent jobs or person years of employment. In our model, we convert hours worked by part-time and/or seasonal employees into person years.

2.8 In-Terminal Survey of Travelers

Using the survey, the non-local visitors in the sample were classified as domestic or international and business or leisure travelers. The spending estimates were then applied to the 2012 MSP passenger traffic data, in order to determine the economic impact of non-local visitor spending on the regional economy surrounding MSP. The spending estimates per category of non-local visitors are statistically reliable to a 95% confidence interval.

17 One person year is equivalent to 1,800 hours of work. Person years are the same as FTEs.
3 Direct Economic Impacts

3.1 Introduction

This section describes the total employment, in both jobs and person years (or FTEs), and estimated payroll attributable to employers directly related to ongoing operations at MSP.

This section also reports employment due to ongoing operations at MSP in more detail. Jobs are broken down by:
- Full-time versus part-time and seasonal employment; and
- Employment by trade.

MSP supports:
- 19,800 direct jobs
- 17,500 direct person years of employment
- $1.2 billion in direct earnings

3.2 Jobs and Person Years

Direct employment related to ongoing operations at MSP amounts to 19,800 jobs. After adjusting for part-time and seasonal employment, the 19,800 jobs equate to 17,500 person years of employment. 18

3.3 Earnings

Employees at MSP and related firms receive approximately $1.2 billion in earnings, yielding an average of $66,270 per person year of employment. Employment figures are summarized in Table 3-1 for wages, as well as jobs and person years.

Table 3-1: Direct Employment and Earnings at MSP

<table>
<thead>
<tr>
<th>Type of Impact</th>
<th>Employment (Jobs)</th>
<th>Employment (Person Years)</th>
<th>Earnings ($ Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Employment</td>
<td>19,800</td>
<td>17,500</td>
<td>1.2</td>
</tr>
</tbody>
</table>

3.4 Full-time versus Part-Time, Seasonal and Contract Employment

A total of 19,800 direct jobs are attributable to MSP operations and other airport-related businesses in 2012. Of these jobs, 17,200 jobs (or 87%) are derived from on-site firms located at the airport; the remaining 2,600 jobs (13%) are derived from off-site firms with a certain percentage of operations tied to the airport. Approximately 97% of the 19,800 jobs are permanent jobs, and 89%

18 Of this total (17,500 person years), 3,500 person years (20% of total direct employment) was inferred for firms that did not respond to the survey. See Appendix D for details.
of these permanent jobs are full-time positions. This demonstrates that MSP and its related businesses are a source of stable, year-round employment. The breakdown of MSP direct jobs and person years by full-time and part-time positions is presented in Figure 3-1.

Figure 3-1: Full-Time Versus Part-Time Permanent Employment

Based on information provided by our survey of employers, seasonal employment represented only 3% of jobs and 1% of person-year employment.

Some employers contract out services to individuals and other firms. An estimated 700 jobs, equivalent to 500 person years of employment, are from contract individuals and/or firms. See Appendix F for further details on how contract employment was calculated.

3.5 Direct Jobs by Type of Employer

MSP is a source of employment for individuals with a broad range of skills. Most businesses require a combination of management, clerical and trades employees. The various job types associated with MSP can be categorized into the following sectors:

- **Airline and Aircraft-Servicing** encompasses not only on-site airline employees (e.g. ticket agents, pilots, etc.), but also the fixed based operators that support airline operations at MSP (e.g. aircraft ground handlers, fueling companies, aircraft maintenance providers, etc.). These firms can be located either on-site or off-site.

- **Airport Support Services** includes the employment that supports the operation of the airport itself. This category consists of firms with employees located on-site at the airport (e.g., retail concessionaires, security service providers, airline catering companies, airport management, etc.).

- **Freight Transportation Services** include all those employees involved in the business of cargo transportation. This category includes courier companies, cargo airlines, freight forwarders, trucking companies and cargo agents.
- **Passenger Ground Transportation Services** includes employment associated with car rental companies, taxi operators and non-taxi operators (e.g., shuttles and limos) that operate to and from MSP.

- **Other** employers include construction and consulting companies that provide ongoing services to MSP, as well as large and small hotels in the region that accommodate visitors to the region and airline staff staying over.

Airline positions account for 48% of MSP’s direct employment base with nearly 9,600 jobs. Airline and aircraft-servicing positions combined account for 56% of total direct employment (11,100 jobs). Nearly 4,600 direct jobs (23%) attributed to operations at MSP are airport support positions (e.g., MSP employers and related businesses at the airport). Approximately 2,100 individuals are employed by passenger ground transportation companies servicing the airport (11% of direct employment). An estimated 6% (close to 1,200 jobs) of the 19,800 total direct jobs are in the freight transportation services sector. Accommodations providers make up 4% (700 jobs), while construction and consulting firms account for the remaining 1% of direct jobs associated with MSP (roughly 100 jobs). Figure 3-2 summarizes the number of direct jobs by category associated with operations at MSP.

![Figure 3-2: Direct Jobs at MSP, by Category of Employer](image)

3.6 Residency of Direct Employees

Surveys from and interviews with airport commission staff and employers associated with the airport (e.g., retail concessionaires, caterers and airlines) confirmed that the majority of the employees associated with MSP reside in the surrounding seven-county region.

Hennepin and Ramsey County are home to the largest percentage of employees, due to the large proportion that reside in the Twin Cities. Of the 4,700 employees who reside in Ramsey County, 3,800 live in St. Paul. Furthermore, of the 6,500 employees who live in Hennepin County, roughly
2,900 live in Minneapolis. Additionally, roughly 20% of the employees associated with the airport reside in Dakota County. Overall, the seven-county region is home to roughly 90% of the total employees associated with the airport. Table 3-2 outlines the residency distribution of employees directly associated with MSP.

Table 3-2: Residency of Direct Employees at MSP

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Direct Jobs</th>
<th>Percent of Direct Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hennepin County</td>
<td>6,500</td>
<td>33%</td>
</tr>
<tr>
<td>(City of Minneapolis only)</td>
<td>(2,900)</td>
<td>(15%)</td>
</tr>
<tr>
<td>Ramsey County</td>
<td>4,700</td>
<td>24%</td>
</tr>
<tr>
<td>(City of St. Paul only)</td>
<td>(3,800)</td>
<td>(19%)</td>
</tr>
<tr>
<td>Dakota County</td>
<td>4,000</td>
<td>20%</td>
</tr>
<tr>
<td>Washington County</td>
<td>1,200</td>
<td>6%</td>
</tr>
<tr>
<td>Scott County</td>
<td>700</td>
<td>3%</td>
</tr>
<tr>
<td>Anoka County</td>
<td>600</td>
<td>3%</td>
</tr>
<tr>
<td>Carver County</td>
<td>200</td>
<td>1%</td>
</tr>
<tr>
<td>Other Minnesota*</td>
<td>1,500</td>
<td>8%</td>
</tr>
<tr>
<td>Other U.S.**</td>
<td>400</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total Employment</strong></td>
<td><strong>19,800</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Survey of employers by InterVISTAS.

Notes:

* “Other Minnesota” includes employees who reside in other cities and counties outside the seven-county region highlighted in the table.

** “Other U.S.” includes employees whose work is directly related to MSP, but who reside in Wisconsin.
4 Indirect and Induced Employment and Earnings

4.1 Introduction
The previous section summarizes how direct employment relates to ongoing operations at MSP. These direct employment results were both measured and presented in great detail. However, the employment impact of the airport does not end there; other sectors of the economy are dependent on these employers’ businesses. Indirect employment is generated by suppliers to the airport. Additionally, when direct (and indirect) employees spend their earnings, they also generate further economic effects. These employment effects are referred to as induced employment. Total employment effects are the sum of direct, indirect, and induced effects.

4.2 Indirect Employment
Indirect employment is employment in industries that supply or provide services to this industry. Based on an analysis of the results of our survey of employers and the application of the regional economic multipliers, we estimate that the total indirect person years of employment related to MSP’s operations equaled 11,900. That is, 11,900 person years of employment are indirectly generated in industries that supply the businesses of MSP. Economic earnings associated with the total indirect employment are estimated to be $0.6 billion per annum.

4.3 Induced Employment
Induced employment is created because of expenditures by individuals employed both directly and indirectly by the airport’s businesses. It is the demand for goods and services generated by wage earnings from economic activity at the airport. Induced employment attributable to MSP is estimated at 15,200 person years.\(^1\)\(^9\) Induced employment is estimated to generate over $0.6 billion per annum in earnings.

4.4 Total Employment and Earnings
Table 4-1 summarizes the direct, indirect, induced and total employment attributable to ongoing operations at MSP and the metropolitan area. The total impact of ongoing MSP airport operations including induced and indirect effects generated 50,300 jobs (equivalent to 44,600 person years of employment). Including multiplier effects, operations at MSP generated $2.4 billion in earnings.

\(^1\)\(^9\) U.S. Bureau of Statistics has recommended some ratios of induced to direct plus indirect impacts which are used here.
Table 4-1: Direct and Total Ongoing Economic Impacts of Airport Operations at MSP

<table>
<thead>
<tr>
<th>Type of Impact</th>
<th>Employment (Jobs)</th>
<th>Employment (Person Years)</th>
<th>Earnings ($ Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Impacts</td>
<td>19,800</td>
<td>17,500</td>
<td>1.2</td>
</tr>
<tr>
<td>Indirect Impacts</td>
<td>13,400</td>
<td>11,900</td>
<td>0.6</td>
</tr>
<tr>
<td>Induced Impacts</td>
<td>17,100</td>
<td>15,200</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Grand Total Impacts</strong></td>
<td><strong>50,300</strong></td>
<td><strong>44,600</strong></td>
<td><strong>2.4</strong></td>
</tr>
</tbody>
</table>
5 Other Economic Impacts

5.1 Introduction

Previous sections of the report focus on the employment impacts of airport operations at MSP. This section touches on the broader economic impacts of MSP measured in dollar values.

The two most common measures of economic contribution (in addition to employment) are gross domestic product (GDP) and economic output. Economic output roughly corresponds to the gross revenues of goods or services produced by an economic sector, while GDP measures only value-added revenues. As such, GDP removes the revenues to suppliers of intermediate goods and services and only includes the revenues from value-added production. Alternatively, economic output adds all revenues at each stage of production together as a measure of total production in the economy. In service industries and the public sector, economic output is often simplified to equate to total wages paid.

To estimate economic output for a sector, one might add up the gross revenues of the various firms in that sector. However, to find GDP for a sector, care must be taken to avoid double-counting. The revenues of one firm providing a service to another are not incremental GDP. For example, in the automobile sector, one cannot add the value (gross revenue) of a finished auto to the value of the tires. The tires are already included in the value of the automobile.

One approach to measuring economic output and value-added GDP is to ask firms in a survey to provide information on their gross revenues, payments to suppliers, etc. However, there are several problems with the approach. First, it is much too expensive. Second, the double counting problem makes this approach impractical.

An alternative is to infer economic output and GDP for an economic sector using economic multipliers. The U.S. BEA produces economic multipliers for both U.S. states and regional counties. Using these economic multipliers is both more cost effective and more accurate than obtaining the data from surveys. This method is the approach adopted here.\(^{20}\)

5.2 Gross Domestic Product and Economic Output

As noted earlier in Section 3, the direct employment from ongoing MSP airport operations generated $2.0 billion in direct GDP and $3.7 billion in direct economic output. Including multiplier

\(^{20}\) InterVISTAS purchased the 2010 multipliers from the U.S. Bureau of Economic Analysis (BEA), the most recent available. These multipliers are specific to the seven-county region. The multipliers for the seven-county region were used as opposed to multipliers for the entire State of Minnesota, as the air transportation industry is concentrated in the metropolitan area. Refer to Appendix F for a more detailed explanation.
effects, operations at MSP are supporting $4.5 billion total (direct, indirect and induced) GDP and $8.0 billion in economic output. Table 5-1 summarizes the economic output and GDP impacts related to ongoing airport operations for MSP.

Table 5-1: Direct and Total Ongoing Economic Impacts of Airport Operations at MSP

<table>
<thead>
<tr>
<th>Type of Impact</th>
<th>GDP ($ Billions)</th>
<th>Economic Output ($ Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Impacts</td>
<td>2.0</td>
<td>3.7</td>
</tr>
<tr>
<td>Indirect Impacts</td>
<td>1.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Induced Impacts</td>
<td>1.3</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Total Impacts</strong></td>
<td><strong>4.5</strong></td>
<td><strong>8.0</strong></td>
</tr>
</tbody>
</table>
6 Visitor Spending Impacts

6.1 Introduction

MSP is the primary gateway to the Minneapolis-St. Paul region and millions of visiting passengers arrive and depart from the airport annually. The monetary spending of these non-local air travelers contribute substantially to both local and regional economies. The direct economic impacts of visitors arriving via MSP are outlined in this section. Visitor spending on hotels, restaurants, retail, transportation and entertainment help sustain jobs in the region and promote further spending.

6.2 Visitor Spending Analysis

To estimate the economic impact of domestic and international visitor spending in the region, InterVISTAS commissioned an in-terminal survey of passengers at MSP. This in-terminal passenger survey was conducted in the summer of 2012. The in-terminal survey results were analyzed in order to determine the average expenditure per non-local visitor category. The survey – which produced estimates statistically reliable at a 95% confidence interval – obtained information on the length of stay and amount spent by different categories of travelers:

- domestic passengers whose primary purpose of traveling was leisure,
- domestic passengers whose primary purpose of traveling was business,
- international passengers whose primary purpose of traveling was leisure, and
- international passengers whose primary purpose of traveling was business.

Spending was further analyzed in terms of different spending categories (e.g., accommodations, meals, ground transportation/rental cars, retail). See Appendix G for further detail on the survey methodology and analysis conducted. Table 6-1 summarizes the trip characteristics of visitors based on the in-terminal survey.
Table 6-1: Trip Characteristics of Non-Local Visitors to MSP

<table>
<thead>
<tr>
<th>Category of Visitor</th>
<th>Average (Median) Night Stay</th>
<th>Average (Median) Expenditure per Visitor ($)</th>
<th>Average (Median) Expenditure per Visitor per Night ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>2</td>
<td>450</td>
<td>225</td>
</tr>
<tr>
<td>Leisure</td>
<td>4</td>
<td>378</td>
<td>94</td>
</tr>
<tr>
<td>Domestic Total</td>
<td>2</td>
<td>425</td>
<td>213</td>
</tr>
<tr>
<td>International</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>3</td>
<td>650</td>
<td>217</td>
</tr>
<tr>
<td>Leisure</td>
<td>7</td>
<td>401</td>
<td>57</td>
</tr>
<tr>
<td>International Total</td>
<td>5</td>
<td>720</td>
<td>144</td>
</tr>
</tbody>
</table>

Source: In-terminal visitor spending survey conducted in summer 2012.
Note: Outliers in the survey data were mitigated through the use of median values, as opposed to the mean (average) values.

International visitors tended to spend more than domestic visitors and tended to stay longer. Domestic visitors spent roughly $425 per trip and stayed 2 nights on average. On the other hand, international visitors spent approximately $720 per trip and stayed 5 nights on average.

The estimate of average (median) expenditure per visitor was then applied to the 2012 MSP passenger traffic figures, to estimate total visitor spending. Approximately 4.2 million of the 33.2 million total passengers that came through MSP in 2012 can be classified as non-local visitors to the region based on U.S. DOT data. See Appendix G for information on how the number of non-local visitors was determined.

Using data obtained from the in-terminal survey and passenger traffic statistics at MSP, it is estimated that the total spending of visitors arriving via MSP is $1.9 billion per annum. Table 6-2 outlines the non-local visitor passenger breakdown for MSP in 2012.

As elsewhere in this study, we believe these figures to be somewhat conservative. The survey asked visitors to report the amount that they spent in the Minneapolis-St. Paul area. To the extent that visitors also spent money elsewhere in the state but outside of the immediate metropolitan area, the effects of that spending are not captured.
### Table 6-2: Trip Characteristics of Non-Local Visitors to MSP

<table>
<thead>
<tr>
<th>Category of Visitor</th>
<th>Number of Visitors (Millions)</th>
<th>Average (Median) Expenditure per Visitor ($)</th>
<th>Total Expenditure ($ Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>3.8</td>
<td>425</td>
<td>1.6</td>
</tr>
<tr>
<td>International</td>
<td>0.4</td>
<td>720</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Total</strong>*</td>
<td><strong>4.2</strong></td>
<td><strong>454</strong></td>
<td><strong>1.9</strong></td>
</tr>
</tbody>
</table>

**Note**: Total average (median) expenditure per visitor is calculated by dividing the total non-local visitor expenditure amount (sum of domestic and international total visitor spending) by the total number of non-local visitors that passed through MSP in 2012. Outliers in the survey data were mitigated through the use of median values, as opposed to the mean (average) values.

### 6.3 Average Visitor Expenditure by Category

By applying the average visitor spending data from the in-terminal survey to the non-local visitor traffic total, the study team determined that the non-local visitor spending of those who traveled through MSP amounted to roughly $1.9 billion a year. The average non-local visitor expenditure per year is broken out by spending category in **Table 6-3**.

### Table 6-3: Average Non-Local Visitor Expenditure per Year by Spending Category

<table>
<thead>
<tr>
<th>Spending Category</th>
<th>Average Expenditure ($ Millions)</th>
<th>Percentage of Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lodging</td>
<td>480</td>
<td>25%</td>
</tr>
<tr>
<td>Gifts &amp; Souvenirs</td>
<td>450</td>
<td>24%</td>
</tr>
<tr>
<td>Food &amp; Beverage</td>
<td>370</td>
<td>20%</td>
</tr>
<tr>
<td>Transportation</td>
<td>260</td>
<td>14%</td>
</tr>
<tr>
<td>Entertainment</td>
<td>190</td>
<td>10%</td>
</tr>
<tr>
<td>Other</td>
<td>150</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Total Average Expenditure</strong></td>
<td><strong>1,900</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

**Note**: * Percentages may not add to 100 due to rounding.
6.4 Direct Economic Impact of Visitor Spending

The U.S. BEA’s employment impact multipliers are used to estimate the direct employment generated by each dollar of visitor spending, as well as earnings and GDP. Based on multiplier analysis, the direct visitor spending impacts of MSP in 2012 included 24,500 direct jobs in the Minneapolis-St. Paul region, representing 21,700 direct person years of employment.

The direct economic impacts of non-local visitors who used air travel through MSP and spent money in the region are summarized in Table 6-4.

Table 6-4: Direct Annual Visitor Spending Impacts of Ongoing Operations at MSP

<table>
<thead>
<tr>
<th>Type of Impact</th>
<th>Employment (Jobs)</th>
<th>Employment (Person Years)</th>
<th>Earnings ($ Billions)</th>
<th>GDP ($ Billions)</th>
<th>Economic Output ($ Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Impacts</td>
<td>24,500</td>
<td>21,700</td>
<td>0.5</td>
<td>1.1</td>
<td>1.9</td>
</tr>
</tbody>
</table>

6.5 Indirect and Induced Visitor Spending Impacts

The indirect visitor spending impacts are based on employment generated in industries that supply and provide services to the tourism industry, and the induced impacts of visitor spending are based on employment generated from the expenditures of individuals employed directly or indirectly by the tourism industry. The indirect and induced visitor spending impacts are not estimated in this study because these would include the aviation-related impacts, which have already been accounted for.

When measuring the economic impacts of airport operations, the multiplier effects of visitor spending will actually contain impacts in aviation, which has already been measured as a direct effect of the airport. As well, the indirect and induced effects of visitor spending include some of the indirect and induced effects of aviation. As a result, this study does not estimate indirect and induced impacts generated from visitor spending (which include impacts of other supplier industries) to avoid double-counting. This methodology has been applied to ensure the estimates cannot be classified as inflated or misleading. To ensure the credibility of this study, the estimates reported are conservative.
7 Tax Impacts

7.1 Introduction

The ongoing operation of MSP and associated economic activity in the region generates a significant amount of tax revenue for the federal, state and local levels of governments. Tax impacts are estimated separately from economic impacts, as the tax revenues generated by airport operations are different from the economic output of the airport. Tax impacts estimate income and payroll taxes and sales taxes on visitor spending, while economic output measures the spending of firms and individuals. This section summarizes that contribution, including the sales tax revenue generated from the spending of non-local visitors who travel to the region via MSP.

There are three main sources of government tax revenue. These sources are classified based on the party making the tax payment:

- **Taxes paid by employers and employees.** These taxes are paid by employers and/or employees related to the airport. This tax category includes income taxes, payroll taxes (e.g., social security contributions and Medicare) and unemployment insurance premiums paid out by airport employers and/or employees. This group also includes property taxes paid by airport tenants and sales tax paid by airline employers for crew member hotel accommodations. These taxes contribute largely to federal and state government streams; however, contributions are made to local county and city level governments as well. See Appendix H for details on how the value of this source of tax revenue was determined.

- **Taxes paid by passengers.** Passengers arriving and departing from MSP contribute to government revenue streams largely through the payment of state and local sales tax. For instance, passengers at the airport itself are subject to sales tax when making parking, retail, and auto rental purchases. Furthermore, non-local visitors to the region are subject to sales tax when making lodging, retail, transportation, entertainment and other types of purchases. See Appendix I for details on how the value of this source of tax revenue was determined.

- **Airfare taxes and fees.** Passengers traveling through MSP also contribute to the federal government (e.g., into the Airport & Airway Trust Fund) through the taxes and fees applied to airfare. While an important impact worth noting in this section, this source of federal government revenue differs from the others; therefore, the figures are reported separately in all tables and descriptions. See Appendix I for more detail on the calculation of airfare taxes and fees.

For each of the three tax revenue sources, taxes paid to the federal, state and local levels of government are identified separately.\(^{21}\)

The purpose of this section is to present the government tax revenue contribution resulting from economic activity that can be attributed directly to MSP. As with all economic impact studies, a

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\(^{21}\) For the most part, this study estimates (some tax envelopes were measured directly, e.g., tenant property taxes) taxes paid from information on the passengers, employers and employees at the airports. In a few situations, such as the corporate income tax paid by employers, an approximate method was used to estimate taxes paid. In every case conservative methods were used. No major tax has been excluded.
conceptual decision has to be made on how broad a definition of economic activity should be used in measuring economic impacts. For this study, a relatively narrow definition of the economic activity that contributes to tax impacts has been utilized. The following tax impacts have not been included:

- Taxes associated with indirect or induced employment (i.e., multiplier effects).
- Excise or import taxes on cargo.
- Taxes paid by airport users outside of the airport.

It would be too complex to broaden the scope of the tax base in this analysis to include taxes generated by indirect and induced employment. The level of detail collected on direct employment from the employment survey administered by InterVISTAS is critical to the tax impact analysis; however similar information is not available for the indirect and induced employment. Estimating the tax impacts associated with indirect and induced employment would be a complex process, requiring speculation about the general economy and resulting in averages that would not necessarily be accurate. Therefore, the tax impact analysis in this report is limited to revenues generated from direct employment associated with MSP and visitor spending of those who travel to the region via MSP.

### 7.2 Taxes by Level of Government

Ongoing economic activity at MSP generates tax revenue for all levels of government. In 2011, total tax contributions from MSP-related employment to all levels of government were close to $611 million. See Figure 7-1 for a breakdown of tax impacts by level of government.

- The federal government was the largest recipient of tax revenue, receiving just over $358 million (59% of total estimated tax revenue).
- The Minnesota State government received close to $243 million in tax revenue (40% of total tax revenue).
- The local governments (the seven counties and various cities) collected the remaining $10 million in tax revenue (1% of total tax revenue).

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22 Taxation impacts are based on calendar year 2011, except for taxes paid by passengers which are based on 2012 passenger traffic volumes from MSP’s 2012 Passenger Traffic and Operations Statistics Reports.
### 7.3 Summary of Tax Contributions

A complete summary of tax contributions by MSP passengers and employers is provided in Figure 7-2. Below are some highlights from the comprehensive tax contributions table.

- Approximately 27% of taxes were paid by air travelers, while 73% of taxes were paid by airport associated employers and employees.
- Airport tenants paid over $4 million in property taxes to the local government in 2011.
- In addition, passengers traveling through MSP contributed over $461 million in airfare fees and taxes to various federal agencies, including the Airport and Airway Trust Fund and the Department of Homeland Security. Figure 7-3 provides a breakdown of the airfare taxes and fees generated by operations at MSP.

See Appendix H and Appendix I for details on how the tax contributions of employers/employees and passengers were calculated.
Figure 7-2: Summary of Tax Contributions by MSP Passengers and Businesses, 2011

<table>
<thead>
<tr>
<th>Paid by Passengers</th>
<th>Paid by Employers or Employees</th>
<th>All Gov’ts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax</td>
<td>Amount ($ millions)</td>
<td>Tax</td>
</tr>
<tr>
<td>Federal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Income Tax</td>
<td>174</td>
<td>Corporate Income Tax</td>
</tr>
<tr>
<td>Social Security - Employer</td>
<td>72</td>
<td>Social Security - Employee</td>
</tr>
<tr>
<td>Medicare - Employer</td>
<td>17</td>
<td>Social Security - Employer</td>
</tr>
<tr>
<td>Medicare - Employee</td>
<td>17</td>
<td>Social Security - Employee</td>
</tr>
<tr>
<td>Social Security - Employee</td>
<td>49</td>
<td>Social Security - Employee</td>
</tr>
<tr>
<td>Unemployment Insurance</td>
<td>1</td>
<td>Social Security - Employee</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>Total</td>
</tr>
<tr>
<td>State</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales Tax on Airport Concessions</td>
<td>11</td>
<td>Personal Income Tax</td>
</tr>
<tr>
<td>Sales Tax on Airport Parking</td>
<td>5</td>
<td>Corporate Income Tax</td>
</tr>
<tr>
<td>Sales Tax on Airport Auto Rentals</td>
<td>12</td>
<td>Social Security - Employer</td>
</tr>
<tr>
<td>Sales Tax on Accomodations</td>
<td>2</td>
<td>Social Security - Employee</td>
</tr>
<tr>
<td>Visitor Sales Tax on Lodging</td>
<td>33</td>
<td>Social Security - Employee</td>
</tr>
<tr>
<td>Visitor Sales Tax on Transportation Services</td>
<td>18</td>
<td>Social Security - Employee</td>
</tr>
<tr>
<td>Visitor Sales Tax on Food</td>
<td>26</td>
<td>Social Security - Employee</td>
</tr>
<tr>
<td>Visitor Sales Tax on Retail</td>
<td>31</td>
<td>Social Security - Employee</td>
</tr>
<tr>
<td>Visitor Sales Tax on Entertainment</td>
<td>13</td>
<td>Social Security - Employee</td>
</tr>
<tr>
<td>Visitor Sales Tax on Other Expenditures</td>
<td>10</td>
<td>Social Security - Employee</td>
</tr>
<tr>
<td>Total</td>
<td>160</td>
<td>Total</td>
</tr>
<tr>
<td>Local</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales Tax on Airport Concessions</td>
<td>1</td>
<td>Property Tax</td>
</tr>
<tr>
<td>Sales Tax on Airport Parking</td>
<td>1</td>
<td>Property Tax</td>
</tr>
<tr>
<td>Sales Tax on Airport Auto Rentals</td>
<td>2</td>
<td>Property Tax</td>
</tr>
<tr>
<td>Sales Tax on Accomodations</td>
<td>2</td>
<td>Property Tax</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>Total</td>
</tr>
<tr>
<td>Total</td>
<td>166</td>
<td>Total</td>
</tr>
</tbody>
</table>

Note: Values may not add up due to rounding.

Figure 7-3: Summary of Airfare Taxes and Fees Generated from MSP Operations, 2011

<table>
<thead>
<tr>
<th>Paid by Passengers</th>
<th>Amount ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Flights</td>
<td></td>
</tr>
<tr>
<td>FAA-related</td>
<td>310</td>
</tr>
<tr>
<td>DHS-related</td>
<td>39</td>
</tr>
<tr>
<td>PFCs</td>
<td>70</td>
</tr>
<tr>
<td>International Flights</td>
<td></td>
</tr>
<tr>
<td>FAA-related</td>
<td>17</td>
</tr>
<tr>
<td>DHS-related</td>
<td>21</td>
</tr>
<tr>
<td>PFCs</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>461</td>
</tr>
</tbody>
</table>

Note: Values may not add up due to rounding.
8 Capital Expenditures

8.1 Economic Impact of Capital Expenditures at MSP in 2012

In addition to the employment and other economic impacts of ongoing operations from the MSP business community, there are also economic impacts associated with the airport’s capital expenditures. The capital expenditures include spending on construction, equipment, and raw and finished materials, all of which support employment, GDP, economic output and taxes.

The MAC 2012-2016 Strategic Plan outlined several MSP-focused initiatives, including service enhancements, facility improvements and arts & culture offerings geared towards making MSP the airport of choice for travelers. Notable improvements completed in 2011 include: expanded security checkpoints, increased retail opportunities, and improved accessibility throughout both MSP passenger terminals.

The MAC recently updated the 2030 MSP Long Term Comprehensive Plan (LTCP). The plan outlines the facility improvements that will be required to accommodate current and forecasted aircraft operations and passenger traffic at MSP. Based on the forecast analysis, the airfield capacity at MSP is adequate to sustain aircraft operations until 2030. The only planned modifications to the airfield are taxiway improvements to facilitate future airfield circulation. Instead, the updated LTCP plan focuses on improvements to passenger facilities, including enhancements to the arrival curb, passenger processing facilities, parking and international arrival facilities at Terminal 1, gate capacity at Terminal 2, and overall terminal environment upgrades.

According to the MAC, MSP spent approximately $100 million dollars in capital expenditures during 2012. Using economic multipliers, the economic impacts of the airport’s capital expenditures in 2012 were estimated. This generated 730 direct jobs, earning $30 million in direct earnings. The total economic impact of the airport’s 2012 capital expenditures is summarized in Table 8-1.
Table 8-1: Total Economic Impact of MSP’s Capital Expenditures in 2012

<table>
<thead>
<tr>
<th>Type of Impact</th>
<th>Employment (Jobs)</th>
<th>Employment (Person Years)</th>
<th>Earnings ($ Millions)</th>
<th>GDP ($ Millions)</th>
<th>Economic Output ($ Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>730</td>
<td>650</td>
<td>30</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Indirect</td>
<td>340</td>
<td>300</td>
<td>20</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Induced</td>
<td>470</td>
<td>420</td>
<td>20</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td><strong>Total Impacts</strong></td>
<td><strong>1,540</strong></td>
<td><strong>1,370</strong></td>
<td><strong>70</strong></td>
<td><strong>110</strong></td>
<td><strong>220</strong></td>
</tr>
</tbody>
</table>
9 Summary of Economic Impact Results

In total, ongoing operations at MSP generated an estimated 74,800 direct jobs, $2.9 billion in earnings, $5.6 billion in GDP, and $9.9 billion in economic output.

Including multiplier impacts, MSP operations and visitor spending generated over 74,800 jobs (66,300 person years of employment), close to $2.9 billion in earnings, $5.6 billion in GDP and approximately $9.9 billion in economic output. The total direct impacts of MSP alone amount to over 44,300 jobs (equivalent to 39,200 person years of employment), $1.7 billion in earnings, generating close to $3.1 billion in GDP and approximately $5.6 billion in economic output. Total impacts are calculated by adding together the direct operations impacts, direct spending impacts, indirect impacts and induced impacts. The total economic impacts of ongoing operations at MSP in the seven-county region of Minnesota are summarized in Table 9-1.

Table 9-1: Summary of Total Ongoing Economic Impacts of MSP

<table>
<thead>
<tr>
<th>Type of Impact</th>
<th>Employment (Jobs)</th>
<th>Employment (Person Years)</th>
<th>Earnings ($ Billions)</th>
<th>GDP ($ Billions)</th>
<th>Economic Output ($ Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Impacts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSP Operations</td>
<td>19,800</td>
<td>17,500</td>
<td>1.2</td>
<td>2.0</td>
<td>3.7</td>
</tr>
<tr>
<td>Visitor Spending</td>
<td>24,500</td>
<td>21,700</td>
<td>0.5</td>
<td>1.1</td>
<td>1.9</td>
</tr>
<tr>
<td>Total Direct Impacts</td>
<td>44,300</td>
<td>39,200</td>
<td>1.7</td>
<td>3.1</td>
<td>5.6</td>
</tr>
<tr>
<td>Indirect*</td>
<td>13,400</td>
<td>11,900</td>
<td>0.6</td>
<td>1.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Induced*</td>
<td>17,100</td>
<td>15,200</td>
<td>0.6</td>
<td>1.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Grand Total Impacts</td>
<td>74,800</td>
<td>66,300</td>
<td>2.9</td>
<td>5.6</td>
<td>9.9</td>
</tr>
</tbody>
</table>

Note: * To avoid possibly double-counting impacts, these figures show only the indirect and induced impacts associated with ongoing MSP airport operations and do not include any indirect and induced impacts from visitor spending. The indirect and induced effects of visitor spending contain impacts of aviation, which are already measured in the multiplier impacts of the airport. Industries that supply and provide services to the tourism industry (which generates the indirect impacts) would include airlines. Similarly, the expenditures by individuals involved in the tourism industry (which generates the induced impacts) would include the expenditures of airline employees. As these impacts are difficult to separate out from the total indirect and induced impacts of the entire tourism industry, indirect and induced visitor spending impacts (which include impacts of other supplier industries) are not estimated in this study in order to mitigate double-counting of impacts. Consequently, the grand total impacts shown should be considered conservative. Further explanation is provided in Section 6.5 of the full report.
MSP’s capital expenditures in 2012 generated 730 direct jobs and $30 million in direct earnings.

There are also economic impacts associated with the airport’s capital expenditures. Using economic multipliers, the economic impact of the airport’s capital expenditures in 2012 were estimated.

According to the Metropolitan Airports Commission, in 2012, MSP spent approximately $100 million dollars in capital expenditures. That spending generated 730 direct jobs and $30 million in direct earnings. The total economic impact of the airport’s 2012 capital expenditures is summarized in Table 9-2.

Table 9-2: Total Economic Impact of MSP’s Capital Expenditures in 2012 on the Seven-County Region in Minnesota

<table>
<thead>
<tr>
<th>Type of Impact</th>
<th>Employment (Jobs)</th>
<th>Employment (Person Years)</th>
<th>Earnings ($ Millions)</th>
<th>GDP ($ Millions)</th>
<th>Economic Output ($ Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>730</td>
<td>650</td>
<td>30</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Indirect</td>
<td>340</td>
<td>300</td>
<td>20</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Induced</td>
<td>470</td>
<td>420</td>
<td>20</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Total Impacts</td>
<td>1,540</td>
<td>1,370</td>
<td>70</td>
<td>110</td>
<td>220</td>
</tr>
</tbody>
</table>

Combined economic impacts of MSP operations, visitor spending and capital expenditures in 2012 generated 745,030 direct jobs and $1.73 billion in direct earnings.

Table 9-3 provides a summary of all the economic impacts associated with the MSP operations, visitor spending and capital spending in 2012.
Ongoing operations at MSP and tourism spending generated $611 million per annum in government tax revenue.

Ongoing economic activity at the airport contributes significant tax revenues to public authorities in the region.

- In 2011, total tax contributions from MSP-related employment to all levels of government exceeded $611 million (See Figure 9-1):23
  - The federal government was the largest recipient of tax revenue, receiving just over $358 million (59% of total estimated tax revenue).
  - The State of Minnesota government received close to $243 million in tax revenue (40% of total tax revenue).
  - The local government (the seven counties and various area cities) collected roughly $10 million in tax revenue (1% of total tax revenue).
- Approximately 27% of taxes were paid by air travelers, while 73% of taxes were paid by employers and their employees.

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23 Tax impacts are estimated separately from economic impacts, as the tax revenues generated by airport operations are different from the economic output of the airport. Tax impacts estimate income and payroll taxes and sales taxes on visitor spending, while economic output measures the spending of firms and individuals.
Figure 9-1: Estimated Annual Tax Revenues to Each Level of Government

- Federal: $358 Million (59%)
- State: $243 Million (40%)
- Local: $10 Million (1%)

Total: $611 Million
Appendix A: Employment Survey

Identification of the Survey Population

A total of 209 firms received employment surveys for the MSP economic impact study. These firms included airport tenants, off-site firms and hotels directly related to or dependent on the airport. The Metropolitan Airports Commission provided a list of on-site airport tenants, while InterVISTAS identified off-site employers and hotels closely tied to airport operations using phone and online directories.

Table A-1: Total Number of Firms Surveyed

<table>
<thead>
<tr>
<th>Type of Employer</th>
<th>Number of Firms Surveyed</th>
<th>Number of Responding Firms</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Site at MSP Employers</td>
<td>86</td>
<td>71</td>
<td>83%</td>
</tr>
<tr>
<td>Off-Site Employers (excluding ground transportation firms)</td>
<td>66</td>
<td>49</td>
<td>74%</td>
</tr>
<tr>
<td>Hotels</td>
<td>57</td>
<td>48</td>
<td>84%</td>
</tr>
<tr>
<td>Total</td>
<td>209</td>
<td>168</td>
<td>80%</td>
</tr>
</tbody>
</table>

Questionnaire Design

The basic questionnaire was designed to obtain information and to be as clear and easy to understand as possible for respondent firms. The survey was provided to employers at the airport. Three other surveys were developed for off-site employers, hotel employment and ground transportation employment. The basic questionnaire provided to airport tenants contained questions in the following areas:

General Information

- Name of firm, address
- Contact person’s name and title
- Phone and fax numbers
- Email and website address
- Type of business

Total Employment Numbers

- Total employees (as of June 2012)
- Total payroll excluding benefits
- Number of on-site employees
- Number of off-site employees

**Part-time and Full-time Employment**
- Full-time permanent employees
- Part-time permanent employees
- Full-time seasonal employees
- Part-time seasonal employees
- Average hours and weeks for part-time and seasonal employees

**Employment by Trade**
- A selection of job trades was provided to categorize employment

**Outsourcing and Contracting Out**
- Number of individuals on contract
- Number and names of firms on contract

### Conducting the Survey

The survey was mailed out electronically by InterVISTAS Consulting. Following the initial electronic mail-out of the surveys and throughout the following weeks, non-responding firms were contacted by telephone to follow up on the completion of the survey. Firms were encouraged to return the survey and new copies were offered if the originals were lost. The replacement surveys were emailed once again. Some survey responses were collected via a telephone interview with firms.
Appendix B: Calculation of Ground Transportation Impacts

The employment information for ground transportation firms was collected and analyzed in a slightly different manner than the other employment types. Ground transportation firms include taxi, shuttle and limousine service providers that operate to and from MSP. An employment estimate for associated ground transportation firms was calculated based on information collected by the MAC and provided to InterVISTAS.

MAC Landside Operations provided comprehensive information for all vehicle types, including taxis, buses, limousines, regional/hotel/off-site parking shuttles and private (i.e., corporate) vehicles. The information provided included:

- Average number of trips to and from MSP per year (round-trip)
- Average number of driver hours per trip (round-trip)
- Number of drivers involved in transporting passengers to and from MSP (estimate based on the number of actively permitted vehicles servicing MSP)
- Estimated cost per departure

The data provided by the MAC covers “MSP permitted” vehicles only. According to MAC staff, approximately another 5% of firms offer ground transportation services as “non-permitted” operators.

Total jobs and total person years figures for both MSP permitted and non-permitted taxis and non-taxi operators were calculated based on the data provided to InterVISTAS by the MAC. To calculate the person years of employment associated with ground transportation, the number of trips per year for each transportation category was multiplied by the average driver hours per trip. That figure was then converted into equivalent person years of employment. An estimated 1,300 jobs (equivalent to 630 person years) are associated with ground transportation operations at MSP.
Appendix C: Summary of Total Jobs and Person Years, Airport Operations Only

Table C-1: Total Jobs and Person Years, Airport Operations Only

<table>
<thead>
<tr>
<th>Employment Source</th>
<th>Jobs</th>
<th>Person Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveyed employment¹</td>
<td>15,200</td>
<td>13,500</td>
</tr>
<tr>
<td>Inferred employment for non-respondents²</td>
<td>3,900</td>
<td>3,500</td>
</tr>
<tr>
<td>Contract employment³</td>
<td>700</td>
<td>500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19,800</strong></td>
<td><strong>17,500</strong></td>
</tr>
</tbody>
</table>

¹ Appendix A  
² Appendix D  
³ Appendix F
Appendix D: Inferred Employment

Because not all airport employers responded to our requests for information in the survey, we statistically inferred some employment data to replace that which otherwise would be missing. This allows us to estimate the total amount and type of employment, which provides the basis for other estimates of economic impact.

In general, InterVISTAS’ approach bases these inferred estimates on information provided by responding firms for each business type and validated against information from other publicly available sources of data. This approach is conservative in that we assumed that the non-responding firms are smaller than responding firms.

The employment data in this report was compiled from a combination of two sources:

1. Employment reported by employers on surveys submitted to InterVISTAS.

2. Employment inferred for employers who did not provide a survey response. Inferred employment was based on employment information from those firms in each business type that did respond to the survey. The mean employment of respondents in each business type was calculated, excluding outliers, and then conservatively adjusted downwards. For instance, those firms with especially large employment levels were excluded from the "mean without outliers" to obtain conservative results. This "adjusted mean" employment for each business type was then applied to those firms who did not respond to the survey.
Appendix E: Multipliers

Comparison of Seven-County and Minnesota State Multipliers

A key consideration in economic impact analysis concerns the geographical area that is most appropriate for study, and which economic multipliers are most appropriate. In this study, we considered using multipliers for the entire State of Minnesota and those for the seven-county region surrounding MSP. That area includes the seven counties of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington.

Our economic impact model is based conceptually on the model created by the U.S. government to measure changes in economic activity. The U.S. Bureau of Economic Analysis’s Regional Input-Output Modeling System (RIMS II) is a tool used by investors, planners, and elected officials to objectively assess the potential economic impacts of various projects. This model produces multipliers that are used in economic impact studies to estimate the total impact of a project on a region. This model is built upon extensive in-depth studies of how the economy functions: relationships between industries that supply intermediate inputs that form the basis for regional and national output, between suppliers and consumers, between labor and capital.

The choice of which geographic area to be analyzed is extremely important. As BEA points out:

“The choice of the region depends on the purpose of the study and the questions being asked. The region should be large enough to capture the interdependencies between a group of related industries but small enough that the results are still economically significant—for example, a new manufacturing plant may have a large effect on economic activity in a county but a negligible effect on economic activity in the state,...

[The region should encompass where workers will spend most of their earnings. One of the biggest mistakes made ... is to use a region that is much larger than the region where workers will actually spend their earnings. ...

Core-based statistical areas, such as the U.S. Office of Management and Budget’s metropolitan statistical areas (MSAs), often serve as good choices for a region because they consist of areas with close economic ties.”

We selected the seven-county region because it is the urban core of the metropolitan area and the home of the vast majority of employees who work at the airport or with related firms and organizations.

We examined the impact of changes in operations at MSP on both the region and on the state as a whole, and used economic multipliers for both areas. In reviewing the multipliers for the State of Minnesota and against those for the seven counties surrounding MSP, the multipliers for the state are lower than that for the seven-county region for some industries, including the aviation industry.

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This implies that commercial aviation operations generate fewer jobs statewide than they do for the seven-county region. This occurs because these industries are highly concentrated in the seven-county region. The state multipliers take into consideration all other counties (which have less inputs for these industries) and take an average of all other regions. State multipliers are not additive; thus, the total economic impact of the airport is not necessarily larger simply because a larger geographic area is considered. Therefore, it is expected that the air transportation industry has higher multipliers for the seven-county region surrounding MSP than for the State of Minnesota, as the industry is concentrated in the metropolitan area.

Table E-1: Summary of Total Ongoing Economic Impacts of MSP in the Seven-County Region in Minnesota, Using Seven-County Multipliers

<table>
<thead>
<tr>
<th>Type of Impact</th>
<th>Employment (Jobs)</th>
<th>Employment (Person Years)</th>
<th>Earnings ($ Billions)</th>
<th>GDP ($ Billions)</th>
<th>Economic Output ($ Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Impacts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSP Operations</td>
<td>19,800</td>
<td>17,500</td>
<td>1.2</td>
<td>2.0</td>
<td>3.7</td>
</tr>
<tr>
<td>Visitor Spending</td>
<td>24,500</td>
<td>21,700</td>
<td>0.5</td>
<td>1.1</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Total Direct Impacts</strong></td>
<td><strong>44,300</strong></td>
<td><strong>39,200</strong></td>
<td><strong>1.7</strong></td>
<td><strong>3.1</strong></td>
<td><strong>5.6</strong></td>
</tr>
<tr>
<td>Indirect*</td>
<td>13,400</td>
<td>11,900</td>
<td>0.6</td>
<td>1.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Induced*</td>
<td>17,100</td>
<td>15,200</td>
<td>0.6</td>
<td>1.3</td>
<td>2.2</td>
</tr>
<tr>
<td><strong>Grand Total Impacts</strong></td>
<td><strong>74,800</strong></td>
<td><strong>66,300</strong></td>
<td><strong>2.9</strong></td>
<td><strong>5.6</strong></td>
<td><strong>9.9</strong></td>
</tr>
</tbody>
</table>
Appendix F: Contract Employment

Some firms contract out services that they do not have expertise in providing or when there are cost advantages to doing so. For example, many airport firms contract out janitorial, elevator and maintenance services. The employment survey asked firms to identify whether they contracted out some of their work, and to estimate the number of annual hours involved.

Contract work was separated into two distinct categories in the employment survey: 1) individual "employees" paid through a contract, rather than via payroll, and, 2) contracting out services to other firms.

The employment results for individuals on contract were derived by counting the number of individual positions for the number of jobs and dividing the total hours of employment by 1,800 to estimate person years. The employment results for firms on contract were derived by dividing the total hours of employment by 1,800 to estimate person years.

There were approximately 700 jobs (equivalent to 500 person years of contract employment) supplied by firms doing work for MSP firms and contract employees working for firms at MSP. These included janitorial, snow removal, maintenance and security services.
Appendix G: Visitor Spending Analysis

Visitor Spending Survey

To estimate the economic impact of domestic and international visitor spending in the region, InterVISTAS commissioned an in-terminal survey of passengers at MSP. This in-terminal passenger survey was conducted in the summer of 2012.

In total, over 1,500 enplaned (boarding) passengers provided survey responses. The survey included passenger profiling questions on trip purpose (business or leisure), country of origin (domestic or international), length of stay, party size and expenditure levels for various categories. The spending estimates for each visitor profile are statistically reliable at a 95% confidence interval. The in-terminal survey data was used to determine the average expenditure per non-local visitor category (e.g., domestic and international). Table G-1 summarizes the characteristics of visitors based on analysis of the in-terminal survey results.

Table G-1: Trip Characteristics of Non-Local Visitors to MSP

<table>
<thead>
<tr>
<th>Category of Visitor</th>
<th>Average (Median) Night Stay</th>
<th>Average (Median) Expenditure per Visitor ($)</th>
<th>Average (Median) Expenditure per Visitor per Night ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>2</td>
<td>450</td>
<td>225</td>
</tr>
<tr>
<td>Leisure</td>
<td>4</td>
<td>378</td>
<td>94</td>
</tr>
<tr>
<td>Domestic Total</td>
<td>2</td>
<td>425</td>
<td>213</td>
</tr>
<tr>
<td>International</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>3</td>
<td>650</td>
<td>217</td>
</tr>
<tr>
<td>Leisure</td>
<td>7</td>
<td>401</td>
<td>57</td>
</tr>
<tr>
<td>International Total</td>
<td>5</td>
<td>720</td>
<td>144</td>
</tr>
</tbody>
</table>

Notes: Median values were used to control for outliers. Respondents were asked to classify themselves as Domestic or International travelers and Business or Leisure travelers. The survey company obtained an equal number of survey responses from each of the four categories of travelers.

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25 The surveyors collected data from only non-connecting passengers departing MSP at the end of their stay in the area.

26 The survey spending categories include: hotels, ground transportation, food, retail, attractions and other.
Estimating the Number of Non-Local Visitors

In 2012, approximately 33.2 million passengers enplaned and deplaned at MSP. Table G-2 shows the passenger movements used in this study.

Table G-2: Passenger Movements at MSP in 2012

<table>
<thead>
<tr>
<th>Source</th>
<th>Enplaned &amp; Deplaned Passengers</th>
<th>Percent Connecting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>30,947,195</td>
<td>39%</td>
</tr>
<tr>
<td>International*</td>
<td>2,223,765</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>33,170,960</td>
<td></td>
</tr>
<tr>
<td>Daily Average</td>
<td>90,879</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* International includes trans-border passengers.  
*Source:* Passenger stats are from the MSP 2012 Year-End Operations Report.

From this data and other industry sources, we developed estimates of the volume of passengers whose trip originated at another domestic or international airport. Knowing the proportions of passengers that connect at an airport allows conclusions about those that do not connect – those whose trip origins or destinations were MSP (so-called “local” or “O&D” traffic). Using data from the U.S. DOT and other industry sources, we calculated estimates of the total number of domestic and international passengers for whom MSP was the destination. These are the visitors to the area. We calculated that in 2012, there were 3.8 million domestic visitors to the area that arrived through the airport, and 0.4 million international visitors to the area that arrived via MSP. In total, an estimated 4.2 million visitors came through MSP in 2012.

This non-local visitor passenger figure was used to determine the total economic impact of visitor spending in the region.

Final Results

The estimate of average expenditure per visitor was then applied to MSP passenger traffic figures to estimate the total impact of visitor spending in the region.

The combination of passenger spending profiles (from the in-terminal passenger survey) and the calculation of non-local visitors were used to develop the estimate of total visitor spending for 2012. The final results are provided in Table G-3.
Table G-3: Trip Characteristics of Non-Local Visitors to MSP

<table>
<thead>
<tr>
<th>Category of Visitor</th>
<th>Number of Visitors (Millions)</th>
<th>Average (Median) Expenditure per Visitor ($)</th>
<th>Total Expenditure ($ Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>3.8</td>
<td>425</td>
<td>1.6</td>
</tr>
<tr>
<td>International</td>
<td>0.4</td>
<td>720</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Total</strong>*</td>
<td><strong>4.2</strong></td>
<td><strong>454</strong></td>
<td><strong>1.9</strong></td>
</tr>
</tbody>
</table>

*Note*: Total average expenditure per visitor is calculated by dividing the total non-local visitor expenditure amount (sum of domestic and international total visitor spending) by the total number of non-local visitors that passed through MSP in 2012.
Appendix H: Tax Revenues Attributable to Airport Employers and Employees

Introduction
Tax liabilities associated with airport employers, including payroll taxes and unemployment insurance deductions, are key sources of revenues for local, state, and federal governments. This appendix summarizes the assumptions made to estimate tax revenues generated from MSP employers. This section also outlines the approach used to estimate employer and employee tax contributions at the local, state and federal government level.

The tax analysis process posed conceptual questions about how much tax revenue, if any, from a certain source can or should be attributed to firms serving MSP.

Employment at MSP
The majority of the tax calculations in this report are based on the direct employment and total earnings. The total direct employment, in person years, used for the tax calculations is roughly 17,500 person years. Person years inputs for each employer type (e.g. taxi driver, customs agent, etc.) are taken directly from the employment survey results.

Personal Income Tax (Federal and State)
Employees who work for employers tied to MSP are taxed on their income and as a result, contribute to federal and state tax revenues.

Estimation Method and Results
The tax paid by a group of employees depends on the income distribution of those employees. Employers did not provide us with that information. Rather, we used the average annual income per employee (per employer type) as the basis for calculating personal income tax contributions.

Federal and state income tax rates vary significantly depending on how the filer classifies themselves:
- Single filer
- Married, filing jointly
- Married, filing separately
- Head of a household

To ensure the accuracy of the income tax calculations, external research was conducted to determine the proportion of income tax filers that fall under each of the filing categories.27 We used

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27 According to IRS data on national returns received in 2009 (Table 1.6: All Returns, 2009), 45% are single filers, 39% are married - filing jointly, 15% file as head of a household and only 2% are married (filing separately).
data from the U.S. Census Bureau to estimate the proportion of the Minnesota population that may file as single, married or head of a household. These proportions were then applied to the total person year and earnings data for MSP employers.

We made simplifying assumptions about the deductions and exemptions that tax filers would claim. These included the application of the earned income tax credit, the application of standard deductions as opposed to itemized deductions, and the number of dependents. For applicable Minnesota taxes, we assumed that no State Credits or State Deductions were applied.

**Corporate Income Tax (Federal and State)**

Corporate income tax is imposed at the federal level on all entities treated as corporations. The corporate tax rate varies by the type and size of company, as well as by jurisdiction. Corporate income tax is based on net taxable income. Some transactions are not taxable, and certain credits and deductions are applicable.

Government agencies are not subject to corporate income tax, nor are public authorities, including the MAC.

**Estimation Method and Results**

Calculating corporate income tax liability is very difficult. It requires knowledge of the total tax base and the proportion of the tax attributable to the states. Therefore, an approximate method has been used to calculate corporate income tax associated with operations at MSP. This method involves determining the total federal and state corporate income tax collections and dividing these values by the total federal and state employment numbers for 2011. The resulting figures are the average corporate income tax collected per employee (federal and state separately). The estimates for 2011 are outlined below:

- Federal corporate income tax collected per employee was $1,837
- State corporate income tax collected per employee was $331

Using the 15,800 of taxable person years of employment associated with MSP, we estimated corporate income tax paid per associated employers. This assumes that all companies pay corporate income tax at an average rate per employee.

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28 U.S. Census Bureau – Quick Facts on Minnesota – Minnesota Households by Type. Based on this data, roughly 51% of Minnesota residents would qualify as married filers, 35% would qualify as single filers and 14% would qualify as head of a household.

29 According to information from the IRS, the marginal federal corporate income tax rates fall between 15-35%.

30 As a public authority, the MAC does not pay corporate income tax; however, it pays applicable sales tax on any and all purchases.

31 The total federal corporate income tax collections value was taken from the IRS 2011 Tax Statistics. The total national employment total was obtained from the U.S. Bureau of Labor Statistics. The total Minnesota state corporate income tax collections value was obtained from the Minnesota Revenue Agency website. Data on total Minnesota state employment was from the Positively Minnesota: Department of Employment and Economic Development website.

32 The taxable person years of employment associated with MSP in this case is 17,500 person years. This number was calculated by subtracting the 1,700 person years of employment associated with federal government agencies (e.g., FAA) and the MAC from the 17,500 total direct person years of employment related to the airport.
Based on this assumption, MSP-related employers paid close to $29 million in federal corporate income tax and $5 million in state corporate income tax.

**Unemployment Insurance**

Unemployment Insurance (UI) is a federal-state program jointly financed through federal and state employer payroll taxes.

The Federal Unemployment Tax Act (FUTA) authorizes the IRS to collect a federal employer tax to fund state workforce agencies. In 2011, U.S. employers paid federal UI premiums equal to 6.0% of earnings up to a maximum taxable wage base of $7,000 per calendar year. Employers who pay the state UI tax in a timely manner receive an off-set credit of up to 5.4%, regardless of the tax rate paid to the state. As a result, the FUTA tax rate for employers in states not subject to a FUTA credit reduction is generally 0.6% (6.0% – 5.4% = 0.6%). This reduced rate results in a maximum FUTA tax of $42 per employee per year (0.6% of $7,000 = $42).

In Minnesota, UI is paid for by employers; individual employees do not contribute to UI premiums. The Minnesota UI tax is a percentage of taxable wages up to a cap of $27,000 (taxable wage base). The Minnesota UI tax rate could range from 2.41% to 8.9%, depending on employer’s industry and “experience rating.” An experience rating is calculated for each employer by dividing 125% of the benefits paid to an employer’s former employees during the experience rating period by the total taxable payroll reported for the same period. High experience rating industries are those that have historically had a high amount of unemployment (e.g., construction and manufacturing). Employers with a high experience rating are allocated a higher UI tax rate than those with a lower experience rating.

**Estimation Method and Results**

To calculate the MSP-related federal UI premiums paid, we made the following assumptions: 1) all related employers paid state taxes in a timely manner and were therefore able to take advantage of the 5.4% off-set credit and 2) the rate from the second half of the 2011 calendar year (6.0% from June 30, 2011 onwards) was used for the calculation. Based on these assumptions, MSP employers pay the maximum of $42 per employee per year. The estimated federal UI payment for MSP employers was about $735,000 in 2011.

Calculating the UI premiums paid by MSP employers to the state government is a more difficult process, as this requires determining the unique experience rating and total taxable wages of each employer. Because this level of information is not available, we made assumptions to determine an average experience rating that can be applied. In 2011, roughly $1.8 billion in unemployment benefits were paid to over 297,000 Minnesota residents and total wages equate to $124.6 billion. Based on this information, we calculated an average experience rating of 1.8%. We then applied

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33 The 0.2% FUTA surtax expired on June 30, 2011. As a result, FUTA taxes for the 2011 calendar year were calculated using two rates: 6.2% of taxable wages paid through June 30, 2011 and 6.0% of taxable wages paid after June 30, 2011.

34 Rates and wage base information taken from the website of the United States Department of Labor: Employment & Training Administration.

35 Calculation of experience rating is taken from the Unemployment Minnesota official website.

36 Data taken from the Positively Minnesota: Department of Employment and Economic Development website.
this average UI rate to total employee wages up to $27,000 per year. Based on this calculation, the estimated UI premium payment to the state as a result of MSP operations was over $8 million in 2011.

**Social Security**

Social Security is funded largely through dedicated payroll taxes. The Federal Insurance Contributions Act (FICA) imposes a Social Security withholding tax equal 6.2% for employers and 4.2% for employees of the gross wage amount, up to but no exceeding the Social Security Wage Base of $106,800.\(^{37}\) In 2011, employee contributions were 4.2% of pensionable earnings. The maximum annual employee contribution amount is $4,486.

**Estimation Methods and Results**

The employee contribution rate is applied to average payroll for MSP employees who are earning less than $106,800 a year. Similarly, the employer contribution rate is also applied to the same average payroll figure.

The estimated employer contribution is almost $72 million and the estimated employee contribution is roughly $49 million. In total, MSP related employers and employees contribute close to $121 million in federal Social Security payments.

**Medicare**

Medicare is a separate payroll tax that is paid at the federal level by both employees and employers. The separate Medicare payroll tax rate of 1.45% for employees and 1.45% for employers is applied to the maximum payroll contribution (no limit).\(^{38}\)

**Estimation Method and Results**

The calculation of Medicare payments associated with MSP employers and employees is determined by using the Medicare employee and employer rate outlined above, and applying this rate to the average salary per employer type. This Medicare rate is then applied to the applicable person years of employment associated with each employer type at MSP.

Based on the calculations, MSP employers and employees contributed close to $17 million each respectively in federal Medicare tax payments, totaling close to $34 million.

**Property Taxes**

Local governments levy property taxes to help them finance local services.

The MAC is not subject to personal Minnesota property taxes for MSP. However, MSP commercial tenants are subject to various levels of property tax payable to the Hennepin County government. According to the Hennepin County Taxpayer Services Department and the Hennepin County

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\(^{37}\) OASI and SSI Program and Rates for 2011; taken from the official website of the U.S. Social Security Administration.

\(^{38}\) OASI and SSI Program and Rates for 2011; taken from the official website of the U.S. Social Security Administration.
Assessor’s Office, MSP tenants paid collective property tax amount of over $4 million in 2011, based on 2010 property assessment values.
Appendix I: Tax Revenues Attributable to Airport Users

Introduction
Sales tax liabilities associated with airport users are an important source of state and local government revenue. This appendix describes the assumptions made when calculating the estimated tax revenues generated from MSP airport users (passengers).

State and Local Sales Tax
The definition of retail sales and what goods and services are taxable vary among different states and jurisdictions. Sales taxes, including those imposed by local governments, are generally administered at the state level. States imposing sales tax require retail sellers to collect tax from customers, file returns, and remit the tax to the state.

In Minnesota, there are up to three levels of sales tax that can be applied to the purchase of goods and services: state, county and city. The combined tax rate is dependent on where the purchase is made within Minnesota and the type of purchase that is made. The Minnesota state tax rate of 6.875% remains constant for most retail purchases that are subject to state sales tax. However, local taxes (county and city) are applied to retail sales made and taxable services provided within the specific local taxing area in question. A local tax applies to the same items that are taxed by the Minnesota state. Many counties and cities within Minnesota apply their own sales levies to the purchase of goods and services. In addition, special local sales taxes can be applied to and for various items, including lodging, restaurants, liquor and entertainment, depending on the rules and regulations of the jurisdiction.

Tax on Airport Concessions
As travelers pass through the airport, they have the opportunity to purchase various items from airport tenants. These tenants sell everything from food and beverage to passenger services (e.g., shoe shining). Passengers are charged a sales tax for all goods or services purchased on the airport site that are subject to the state sales tax.

Estimation Method and Results
Most purchases made within the airport are subject to a sales tax of 7.775%. Table J-1 provides a breakdown of the applicable sales taxes charged for goods and services purchased at the airport.
Table J-1: Applicable Sales Tax at MSP in 2011

<table>
<thead>
<tr>
<th>Sales Tax</th>
<th>Tax Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota State Sales Tax</td>
<td>6.875%</td>
</tr>
<tr>
<td>Hennepin County Sales Tax</td>
<td>0.15%</td>
</tr>
<tr>
<td>Transit Improvement Tax*</td>
<td>0.25%</td>
</tr>
<tr>
<td>City of Minneapolis Sales Tax</td>
<td>0.50%</td>
</tr>
<tr>
<td><strong>Total Applicable Sales Tax</strong></td>
<td><strong>7.775%</strong></td>
</tr>
</tbody>
</table>

Source: All sales tax rates taken from the Minnesota Department of Revenue.

Note: *The transit improvement tax is a county-level sales/use tax. Hennepin is one of five participating counties in the transit tax program. This tax is separate and in addition to the county sales taxes that already exist.

Based on the information provided by the airport authority, total airport concession revenues were over $161 million in 2011. Tax on these expenditures is estimated to total over $12 million, with $11 million in state and over $1 million in local tax revenues.

Tax on Parking and Car Rentals

MSP has on-site parking facilities that generate millions of dollars in revenue every year. When individuals purchase parking at the airport, applicable sales taxes are levied. In addition, many passengers pay to rent cars once they arrive at the airport; sales tax applies in these instances as well. Parking and car rental purchases are directly related to the operations of MSP, and therefore, the sales tax revenue generated for the state or local governments are assessed.

Estimation Method and Results

The same tax structure that applies to airport concessions shown above also applies to airport parking and car rentals purchases made at the airport.

Based on the information provided by the airport authority, total airport parking revenues were over $66 million and total auto rental revenues were roughly $173 million. Sales tax on parking revenues equate to over $5 million, with over $4 million in state and almost $1 million in local sales tax collected. Sales tax on auto rentals equate to over $13 million, with almost $12 million in state and over $1 million in local sales tax collected.

Tax on Accommodation Costs for Crew Members and Certain Passengers

Airline crew members who have arrived at MSP often need to stay near the airport before taking off on their next scheduled flight. In addition, in cases of occasional flight cancellations, some travelers

40 Auto rental gross revenue amount provided by the Metropolitan Airports Commission.
need to spend the night in a nearby hotel. Passengers with early morning flights may also sometimes arrive the day before and spend the night at a nearby hotel. These activities lead to expenditures by airport users on hotels around the airport site. Various levels of sales tax are applied to these expenditures, which thereby contribute government revenues streams.

**Estimation Method and Results**

The Minnesota sales tax rate of 6.875% applies to all accommodation expenditures within the state. In addition, many cities in Minnesota, including Minneapolis and St. Paul, apply additional lodging and/or entertainment taxes on top of the standard sales tax rate, to accommodation expenditures. To ensure the accuracy of this tax analysis, the combined local sales tax rate for each of the hotels surveyed in our study was determined (based on the exact location of each of the hotels). **Table J-2** provides an example of the accommodation tax breakdown of a hotel located in Bloomington.

**Table J-2: Hotel Tax Applicable in Bloomington, MN**

<table>
<thead>
<tr>
<th>Sales Tax</th>
<th>Tax Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota State Sales Tax</td>
<td>6.875%</td>
</tr>
<tr>
<td>Hennepin County Sales Tax</td>
<td>0.15%</td>
</tr>
<tr>
<td>Transit Improvement Tax*</td>
<td>0.25%</td>
</tr>
<tr>
<td>City of Bloomington Lodging Tax</td>
<td>7.00%</td>
</tr>
<tr>
<td><strong>Total Applicable Sales Tax</strong></td>
<td><strong>14.28%</strong></td>
</tr>
</tbody>
</table>

According to Smith Travel Research, the average occupancy rate in the Twin Cities region was 66% in 2011 and the average daily room rate in the Twin Cities region was roughly $95 in 2011.

To estimate the total accommodation costs of these crew members and connecting passengers, the average daily room rate was applied to the estimated total crew layover nights and passenger nights determined from the survey of hotels. In the end, the sales tax revenue generated from crew layover nights amounted to $0.4 million ($0.2 million for state and $0.2 million for local governments) and the sales tax revenue generated from connecting passengers amounted to $4 million ($2 million for state and $2 million for local governments).

**Tax on Visitor Spending**

Visitors spend money on a variety of goods and services during their time spent in the region. Due to the associated sales tax applied on goods and services, non-local visitor spending generates a significant amount of state and local tax revenue.

**Estimation Method and Results**

Non-local visitors that travel through MSP spent an estimated $1.9 billion annually in 2012. This value is based on the visitor spending analysis outlined in **Section 6** of the full report.
As it is not possible to determine where visitors are spending their money when visiting Minnesota, a conservative sales tax rate was used. The Minnesota sales tax rate of 6.875% was the only rate applied to the visitor spending totals. The Lodging (Accommodation) tax calculation does not account for local level lodging/entertainment taxes that may be applied. This differs from the connecting passenger and crew member tax calculation process, which included all applicable sales and lodging taxes. Table J-3 provides a breakdown of the applicable state sales taxes associated with each category of visitor spending.

Table J-3: Sales Tax Generated from Non-Local Visitor Spending via MSP

<table>
<thead>
<tr>
<th>Spending Category</th>
<th>Sales Tax ($Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lodging</td>
<td>33</td>
</tr>
<tr>
<td>Gifts &amp; Souvenirs</td>
<td>31</td>
</tr>
<tr>
<td>Food &amp; Beverage</td>
<td>25</td>
</tr>
<tr>
<td>Transportation Services</td>
<td>18</td>
</tr>
<tr>
<td>Entertainment</td>
<td>13</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total Tax Revenue</strong></td>
<td><strong>130</strong></td>
</tr>
</tbody>
</table>

Taxes and Fees Paid by Passengers

Passengers traveling through MSP pay a number of federal taxes and fees that offset the cost of providing federal air traffic services and security services. In general, these taxes, fees, and charges provide funds to the FAA’s Airport and Airway Trust Fund, the Department of Homeland Security (including the Transportation Security Administration and Customs and Border Protection). In this way, MSP operations help to fund the federal agencies that ensure the successful operation of the larger airport system in the U.S.41

In addition, passengers at MSP pay a “Passenger Facility Charge” (PFC) that offsets the cost of airport infrastructure. These PFCs are used to fund FAA-approved projects that enhance safety, security, or capacity; reduce noise; or increase air carrier competition at U.S. airports.

Taxes and fees are applied on top of the base domestic and international airfare paid by travelers. These fees are collected from passengers by airlines, but are then funneled to the applicable federal agencies.

41 The federal government also levies certain fees that do not apply directly to passengers. These include the cargo waybill tax and the U.S. Animal and Plant Health Inspection Service (APHIS) aircraft fee. We did not estimate the total collections associated with these charges.
For domestic airfare, fees and taxes are charged every time a passenger departs from a U.S. airport, regardless of whether they are a connecting or non-connecting passenger. Table J-4 provides an overview of the taxes and fees applied to domestic airfare paid by passengers departing from MSP.

**Table J-4: Taxes & Fees Applied to Domestic Airfare from MSP, 2011**

<table>
<thead>
<tr>
<th>Name of Tax / Fee</th>
<th>2011 Rate</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Ticket Tax</td>
<td>7.50%</td>
<td>U.S. government <em>ad valorem</em> tax on base airfare.</td>
</tr>
<tr>
<td>Flight Segment Fee</td>
<td>$3.70</td>
<td>U.S. government fee applied per flight segment (single landing and take-off).</td>
</tr>
<tr>
<td>September 11th Security Fee</td>
<td>$2.50</td>
<td>U.S. government assessed fee per U.S. enplanement to offset cost of security.</td>
</tr>
<tr>
<td>Passenger Facility Charge</td>
<td>$4.50</td>
<td>Charge levied by local airport authority.</td>
</tr>
</tbody>
</table>

*Source: Delta Air Lines*

For international airfare, applicable U.S. fees and taxes are charged both when a passenger leaves the U.S. for an international destination, and when a passenger returns to the U.S. from an international destination. The international specific taxes and fees apply only to non-connecting passengers who are using the federal Customs and Immigration facilities when landing at a U.S. airport. The September 11th security fee is applied to all passengers who depart from a U.S. airport to any destination, domestic or international. Table J-5 provides an overview of the taxes and fees applied to international airfare. PFCs are applied by the local airport authority.
### Table J-5: Taxes & Fees Applied to International Air Service to/from MSP, 2011

<table>
<thead>
<tr>
<th>Name of Tax / Fee</th>
<th>2011 Rate</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. International Departure/Arrival Tax</td>
<td>$16.30</td>
<td>U.S. government tax applied to international flights arriving in or departing from the U.S.</td>
</tr>
<tr>
<td>U.S. Immigration &amp; Naturalization Fee</td>
<td>$7.00</td>
<td>U.S. government fee charged to returning passengers.</td>
</tr>
<tr>
<td>U.S. Customs User Fee</td>
<td>$5.50</td>
<td>U.S. government fee charged to returning passengers.</td>
</tr>
<tr>
<td>U.S. Animal and Plant Health Inspection Service Fee</td>
<td>$5.00</td>
<td>U.S. government fee charged to returning passengers.</td>
</tr>
<tr>
<td>September 11th Security Fee</td>
<td>$2.50</td>
<td>U.S. government fee assessed fee per U.S. enplanement.</td>
</tr>
<tr>
<td>Passenger Facility Charge</td>
<td>$4.50</td>
<td>Charge levied by local airport authority.</td>
</tr>
</tbody>
</table>

**Source:** Delta Air Lines.

### Estimation Method and Results

To determine the airfare taxes and fees generated from MSP’s operations, several methodological steps were taken to ensure that only the taxes and fees related to MSP were accounted for. The steps are outlined below:

1. Determined the number of domestic and international enplaned and deplaned passengers traveling through MSP in 2012. This passenger traffic information is available on the MSP website.

2. The average one-way base airfare from MSP was sourced from Diio. These base fares do not include any taxes and fees. According to Diio, the average one-way domestic airfare from MSP was $218 and the average one-way international airfare from MSP was $487 in 2011. These values were used as the basis for estimating the average international and domestic airfare revenues from MSP in 2011. Based on the calculations, $3.4 billion in domestic airfare revenue and $500 million in international airfare was generated from MSP operations in 2011.

3. Applied the international and domestic airfare taxes and fees outlined in Table J-4 and Table J-5 to the 2012 passenger traffic and airfare revenue totals in order to estimate the total funds generated for the federal agencies.

Based on the application of the methodology described above, domestic airfare from MSP generated roughly $419 million in funds for the federal agencies, while international airfare from MSP generated roughly $42 million in funds for the federal agencies. In total, over $461 million in fees and taxes were collected as a result of MSP airport operations.
Appendix J: Glossary of Terms

**Contract Work:** Any work which is done for a company by an individual who is not on the payroll or work done for a company by another company. Generally speaking, firms will contract out work in areas in which they do not have expertise or when there are cost advantages to doing so.

**Direct Employment:** Direct employment is employment that can be directly attributable to the operations in an industry, firm, etc. It is literally a head count of those people who work in a sector of the economy. In the case of the airport, all of those people who work in an aviation related capacity would be considered direct employment.

**Economic Activity:** (also Output, Production) The end product of transforming inputs into goods. The end product does not necessarily have to be a tangible good (for example, knowledge), nor does it have to create utility (for example, pollution). Or, more generally, the process of transforming the factors of production into goods and services desired for consumption.

**Economic Output:** (also Economic Activity, Production) The end product of transforming inputs into goods. The end product does not necessarily have to be a tangible good (for example, knowledge), nor does it have to create utility (for example, pollution). Or, more generally, it is defined as the process of transforming the factors of production into goods and services desired for consumption.

**Employment Impact:** Employment impact analysis determines the economic impact of employment in terms of jobs created and salaries and wages paid out. In the case of the airport, the direct, indirect, induced and total number of jobs or person years created at the airport is examined to produce a snapshot of airport operations.

**Full Time Equivalent (FTE):** (also Person Year) One full time equivalent (FTE) year of employment is equivalent to the number of hours that an individual would work on a full time basis for one year. In this study we have calculated one full time equivalent year to be equivalent to 1,800 hours. Full time equivalent years are useful because part time and seasonal workers do not account for one full time job.42

**Gross Domestic Product:** (GDP, also value-added) A measure of the money value of final goods and services produced as a result of economic activity in the nation. This measure is net of the value of intermediate goods and services used up to produce the final goods and services.

**Ground Transportation:** Ground Transportation at the airport includes any vehicles which transport passengers from the airport to the cities or from the cities to the airport. This would include taxicab service, limousine service and hotel van service. Valet services as well as skycaps are included in this category.

**Indirect Employment:** Indirect employment is employment which results because of direct employment. For the airport, it would include that portion of employment in supplier industries which are dependent on sales to the air transport sector. In some cases, contract work would be considered indirect employment.

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**Induced Employment:** Induced employment is employment created because of expenditures by direct and indirect employees.

**Multiplier Analysis:** Analysis using economic multipliers in which indirect and induced economic impacts is quantified. Essentially, a multiplier number is applied to the "directly traceable economic impact" to produce indirect and total effects (see Multiplier.)

**Multiplier:** Economic multipliers are used to infer indirect and induced effects from a particular sector of the economy. They come in a variety of forms and differ in definition and application. A multiplier is a number which would be multiplied by direct effects in order to calculate indirect or induced effects. In the case of the airport, as in many other cases, multipliers can lead to illusory results, and thus must be used with great care.

**Passenger Facility Charge (PFC):** A charge levied on enplaning passengers by the airport authority to help with funding capital improvements at the airport and mitigate noise impacts. The charge is sometimes referred to as a Passenger Facility Fee.

**Seasonality:** Seasonality results when the supply and demand for a good is directly related to the season in which is consumed. For example, ski resorts experience changes in net income as a result of seasonality. Airports and airport services also experience seasonality as a result of vacation times for families (typically during the summer) and/or temperatures abroad (typically at Christmas time). As a result of seasonality in demand for flights, some air carriers increase frequency of flights to certain areas during the busy season.

**Tenant:** A firm which pays a lease to a leasing company or to the airport authority directly.

**Value-Added:** (also GDP) A measure of the money value of final goods and services produced as a result of economic activity in the nation. This measure is net of the value of intermediate goods and services used up to produce the final goods and service