

The Economic Impact of Manhattan Regional Airport, 2012



Prepared for:

Manhattan Regional Airport

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October 2012

Section 1. Economic Benefits of Airports

The United States is fortunate to have thousands of airports that are integral components of regional economies. Every airport, whether it services commercial airlines or general aviation aircraft, provides its community with connections to the national aviation system and promotes commerce in the local economy. Airports allow businessmen and tourists to visit the region, an activity that stimulates spending on hotels, cultural events, and shopping. In many towns, the local airport helps to attract new businesses and support existing ones. Additionally, airports provide a number of essential services to local areas, including law enforcement and medical evacuation.

In addition to the transportation benefits that airports provide, the services available at airports create jobs, stimulate payroll, and contribute output to the economy.

This whitepaper explains and summarizes the economic impacts of Manhattan Regional Airport (MHK) on the region's economy. The economic impacts of day-to-day operations at the airport, the activities of on-airport tenants, the effects from typical capital improvement expenditures, and spending by visitors arriving at the airport are all accounted for and tabulated in this study.

For 2012, MHK supported 489 jobs in Kansas that earned a total of \$13.4 million. MHK contributed \$46.3 million to the state's economy. Details of these economic impacts and the means by which they were estimated are explained in the following sections.

1.1 Economic Impact Study Methodology

The total economic impact, or contribution, of MHK is quantified in this analysis in terms of employment, payroll, and output. The economic impacts generated by on-airport tenants and visitors flying to Manhattan and the surrounding region account for a significant percentage of the benefits associated with the airport. Tenant employment, capital investment, and gross sales affect several economic factors, and the pilots and passengers on visiting aircraft and commercial airliners further stimulate the local economy with spending on various goods and services. These elements were measured as a part of this study.

The Economic Model

The economic impacts produced by MHK were determined using an economic input-output model that estimates purchases and sales between the various sectors of the economy. The model incorporates secondary spending estimates specific to Kansas and required impact estimates for three separate, though interrelated, components of the economy:

- **Employment** – Employment is based on the total of full-time jobs plus part-time jobs. Each part-time jobs counts as half of a full-time job.
- **Payroll** – Payroll is the annual salary and benefits paid to employees associated with the airport.
- **Output** – Output is the total value of goods and services that a business produces.

It should be noted that each of the three economic components described above are considered independently and should not be added. While it may be tempting to add payroll and output into one grand total of economic impact, each component is calculated differently and stands as an independent measure of each airport's contribution. In addition, some elements of payroll are included in the output estimates.

The Impact Analysis for Planning (IMPLAN) input/output model was used to quantify the economic impacts in this study. IMPLAN is a linear model that estimates purchases and sales between hundreds of sectors of the economy. The U.S. Forest Service, in cooperation with several other government agencies, initially developed the IMPLAN system to generate regional non-survey input-output models for regions as small as a single county. This modeling process is considered one of the leading methods currently available for estimating the total economic impact of an industry and has been used to estimate economic impacts for individual airports and systems of airports throughout the country.

The IMPLAN model contains a large economic database used to generate input-output tables. It includes data from sources such as Dun and Bradstreet, the U.S. Department of Commerce, and the U.S. Census Bureau. IMPLAN multipliers and data tables specific to industrial sectors in Kansas were obtained and used in this analysis.

The three impact estimates described above were entered into the economic model, which then produced estimates of spending generated in other sectors of the economy by these economic inputs. These sectors generate additional economic activity, producing additional employment, payroll and output, and this is referred to as the multiplier effect. The model tracks this activity until it leaks beyond the boundaries of the study. The model captures all of the economic impacts attributable to MHK that take place within Kansas. Naturally, most of these impacts take place within Manhattan and Riley County, but the model accounts for impacts that occur outside of Riley County but still within Kansas.

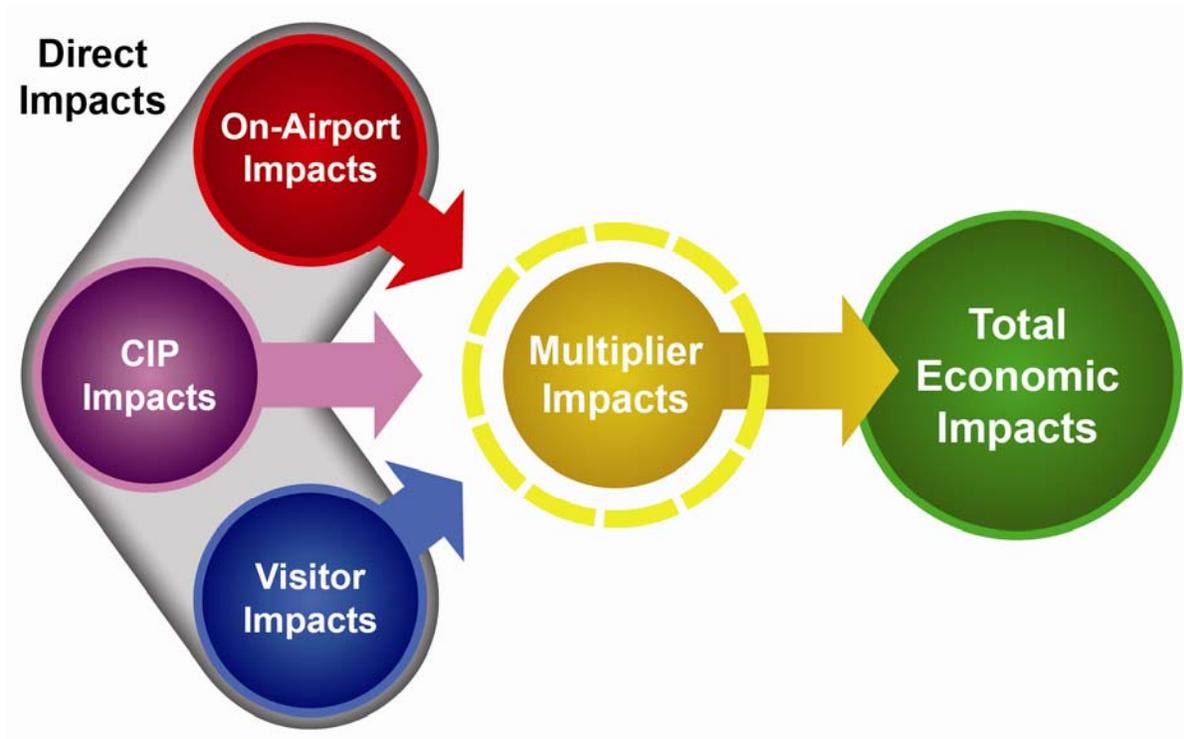
The IMPLAN model accounts for direct and multiplier impacts.

- **Direct Impacts** – Direct impacts account for the initial point where money first starts circulating in the economy. Direct impacts include both on-airport and visitor-related impacts. On-airport impacts are the benefits associated with businesses located at the airport that are involved or related to the provision of aviation services. These impacts include the employment, payroll, and spending of businesses (including average annual capital project expenditures) such as airlines, fixed base operators (FBOs, the businesses that typically provide aircraft fuel and other aviation services on airports), government entities, and others. Visitor-related impacts are attributed to the expenditures of travelers that come to Manhattan by commercial airline or general aviation aircraft. Visitor expenditures support employment and payroll in service-related industries such as lodging, food and beverage, retail, and entertainment found in Manhattan and the surrounding region. To avoid double counting of benefits, visitor spending on aviation-related goods provided at MHK is not included in the visitor expenditures. Instead, it is included in the appropriate tenant's economic output.
- **Multiplier Impacts** – Multiplier impacts result from the re-circulation of direct impacts within the economy. This re-spending of money can occur multiple times and takes two forms - indirect and induced. Indirect impacts occur when businesses spend their revenue on business expenses. Induced impacts occur when employees spend their earnings on goods and services. For example, as airport employees spend their salary for housing, food, and services,

those expenditures circulate through the economy resulting in increased spending, payroll, and employment throughout Kansas.

- **Total Impacts** – The total economic impacts of MHK are the sum of all direct and multiplier economic activities, as illustrated in **Figure 1**. The next section explains the data needed to arrive at these economic impact estimates and the methods used to obtain that data.

FIGURE 1 – INPUTS AND OUTPUTS OF AN ECONOMIC IMPACT MODEL



Data Collection Methods, and Model Methodologies

Data collection efforts were employed to obtain information pertaining to the economic activities occurring at MHK. This data constituted the inputs to the economic model used to calculate the total economic impact of the airport. Direct impact data were needed for the following groups:

- **On-Airport Tenants** – This group consists of aviation-related businesses such as FBOs, aircraft maintenance, flight schools, government entities, and others. Government entities include public airport sponsors such as the airport’s management.
- **Capital Improvement Projects** – Each year, airports undertake capital improvement projects (CIP), such as pavement maintenance or terminal construction. In addition, businesses and other agencies undertake capital improvement projects. These projects employ people in jobs such as construction, architecture, engineering, and consulting.
- **Commercial Service Visitors** – American Eagle provides daily flights between MHK and Chicago O’Hare International and Dallas/Ft. Worth International, providing both visitors and

residents economical access to the Manhattan region. Spending by visitors supports local businesses such as hotels, restaurants, and retail establishments.

- **General Aviation Visitors** – Impacts associated with general aviation visitors are generated by non-local passengers arriving via private or corporate aircraft that spend money in the local economy. The direct impacts of this group were equivalent to their expenditures that took place while they were visiting.

Data for direct impacts are critical components for the development of the final economic impact estimates, since estimates of multiplier impacts are driven by data used for direct impacts. This study of MHK was aided by the completion of an economic impact study of Kansas airports in 2009. Data and methods used in the 2009 study were drawn upon, or supplemented, in this current study.

The following sections describe the methods that were used to collect information and estimate the impacts of each segment of airport user.

On-Airport Impacts

The direct impacts for on-airport tenants were established primarily through surveys. Airport management was first contacted to assess its economic impacts as well as identify aviation-related tenants with employees operating on the airport. All of the aviation-related tenants were requested to provide the following information:

- The type of aviation activity conducted by the on-airport tenant.
- The number of full-time and part-time personnel employed by the on-airport tenant at the airport in 2012.
- The total estimated annual wages and benefits paid to the on-airport employees in 2012.
- The total amount spent on capital improvement projects (CIP) at the airport in the past four years (2009 to 2012).
- The total estimated annual operating expenses in 2012.
- The on-airport tenant's total estimated annual gross sales at the airport, if applicable, in 2012.

For most businesses, economic output was equivalent to the company's gross sales. For government organizations and businesses that do not produce revenues (e.g., corporate flight departments), economic output was calculated as the sum of annual payroll and annual expenses.

For businesses that did not respond to a survey, other data sources were used to obtain their direct impacts. Employment estimates were obtained from airport management or, in one case, data was taken from the 2009 study and confirmed against publicly available databases. The airport provided gross sales as reported by its concessionaires. Other missing data, such as annual expenses, payroll, capital expenditures and gross sales, were estimated using per capita values from the data used for MHK in the 2009 economic impact study of Kansas airports. These values were adjusted for inflation to 2011 values (approximately a 5 percent increase).

Capital Improvement Projects

Surveys were used to gather CIP expenditures from both the airport and its tenants. CIP impacts can vary greatly from year to year. For this reason, an average of the past four years of CIP was used in this study to smooth out the variances in CIP. For tenants that did not respond, the average per capita CIP expenditure from the 2009 study was used (adjusted for inflation) to estimate current CIP expenditures.

The number of jobs per \$1 million spent on capital improvement projects can vary substantially depending upon the type of project. The 2009 study used a weighted average of various types of construction, maintenance, and architectural work to determine that \$1 million in CIP spending supports an average of six jobs. Even though the proportions of the particular projects at Manhattan Regional Airport probably don't exactly match the weightings used in the last study, they were kept the same to maintain consistency between the studies. Data from the U.S. Bureau of Labor Statistics indicated average salary for Kansas employees involved in construction-related activity was \$32,900. This average payroll was applied to each CIP-related employee to determine payroll associated with CIP activity.

Commercial Service Visitors

Visitors arriving in Manhattan by commercial airlines spend money on hotels, restaurants, and retail establishments during their trip. To estimate the expenditures of commercial service visitors, it was necessary to estimate how many of MHK's passengers were visitors to the region and what each of those visitors typically spent during their trip. While it is reasonable to presume that some of these visitors would still travel to the Manhattan region without commercial air service at MHK, data to estimate this number is not available, so this estimate shows how much visitors that flew into MHK spent while in the region. Data from the 2009 Kansas economic impact study was used to estimate the proportion of enplaned passengers that were visitors to Manhattan. Spending data was gathered by airport staff who administered a passenger survey in August and September 2012. More than 600 passengers responded to the survey. Each passenger was asked to identify themselves as either a resident of, or a visitor to, Manhattan. Those that identified themselves as visitors were asked to provide the following information:

- Trip purpose
- Number of nights stayed
- Number of people traveling in their group
- Expenditures by their group for lodging, food, other ground transportation, retail, and other expenses

Visitor expenditures did not include the cost of airline travel since this part of the economic impact was tabulated under the on-airport impacts of American Eagle. This rationale was also applied to visitor expenditures on rental cars. The impact from visitors renting cars was included in the on-airport impacts of the rental car companies.

Survey data indicated that visitors to Manhattan fall into one of three categories – business, personal, or military visitors. The survey data was used to determine the percentage each category comprises of all visitors, and how much the typical visitor in each category spends during their trip. These

estimates were applied to the airport's total enplanements to arrive at an estimate of commercial service visitor expenditures. The number of jobs associated with this spending was estimated using a ratio of approximately 13 jobs per \$1 million in visitor spending that was used in the 2009 study. An average payroll for employees in the hospitality and retail industries, which is where most of these jobs are found, was used to estimate the direct payroll associated with commercial service visitor spending. This average payroll of \$21,300, determined from 2011 Bureau of Labor Statistics data for Kansas, was applied to each job associated with commercial service visitor expenditures.

General Aviation Visitors

The majority of aviation operations at MHK are conducted by general aviation aircraft. General aviation aircraft bring visitors to the Manhattan region for leisure and business purposes. Those visitors spend money on hotels, restaurants, and retail establishments, just as commercial airline service visitors do. To estimate these expenditures, many assumptions used in the 2009 economic impact study were used for this estimate. Surveys for general aviation visitors were made available at Kansas Air Center, the airport FBO, to gather data to validate and refine the assumptions from the 2009 study. Those surveys asked visitors for:

- The purpose of their trip
- The average number of visitors in each visiting aircraft
- The estimated expenditures per visitor during the trip, not including the costs of aviation services, which are captured in the impacts of the airport businesses

The total number of general aviation visitors was estimated based upon the number of itinerant general aviation operations that occur at MHK. Itinerant operations are defined as non-training flights that enter or leave an airport's airspace and are either visiting, or returning, to the airport. It was assumed that the proportion of itinerant operations that are visiting flights has remained the same since 2009 at 33 percent. Each visiting flight was assumed to have the same average number of visitors and each of those visitors was assumed to spend an average amount during their trip. These factors were used to estimate spending by general aviation visitors. The jobs associated with this spending, predominately in the hospitality industry, were estimated using an IMPLAN model ratio of approximately 20 jobs per \$1 million in expenditures, which was determined in the 2009 study. An average payroll of \$21,300 per employee, determined from 2011 Bureau of Labor Statistics data for Kansas, was used to estimate payroll impacts.

1.2 Economic Impacts of Manhattan Regional Airport

Manhattan Regional Airport is a major contributor to the economic vitality of the Manhattan region. This section of the report breaks the airport's economic impacts into direct and multiplier impacts, and discusses the driving factors behind each. The section concludes with the overall economic impact of the airport—the total impacts.

Direct Impacts

Economic impacts at MHK are associated with both on-airport activities and spending associated with visitors. Direct impacts include the employment, payroll, and economic output of airport tenants, the

impacts tied to capital improvement projects on the airport, and the industries supported by visitor spending.

Table 1 details the direct economic impacts at MHK. The combined direct on-airport, CIP, and visitor-related employment resulting from activity at MHK in 2012 was 292 jobs, \$7.8 million in payroll, and \$28.4 million in output.

TABLE 1 – DIRECT ECONOMIC IMPACTS OF MHK, 2102

Direct Impacts	Employment	Payroll	Output
On-Airport Impacts	64	\$2,671,500	\$9,043,900
Capital Improvement Projects	26	\$855,400	\$4,379,200
Commercial Service Visitor Impacts	188	\$4,004,400	\$14,301,100
General Aviation Visitor Impacts	14	\$298,200	\$708,500
Total Direct Impacts	292	\$7,829,500	\$28,432,700

Source: CDM Smith, October 2012

These direct benefits are dominated by the commercial service visitor impacts, which make up more than half of the direct impacts. Nevertheless, on-airport and CIP impacts each contributed significant jobs and output to the regional economy. A detailed explanation of these direct economic impacts follows.

On-Airport Direct Impacts

On-airport impacts are generally driven by the largest employers and MHK is no different. The largest employer at the airport – American Eagle Airlines – contributes significantly to the direct impacts of employment, payroll and output. The airport FBO – Kansas Air Center – is also one of the larger employers on the airport and has a large economic output. Combined with airport management and the numerous other tenants on the airport, these organizations accounted for 64 employees with a direct payroll of nearly \$2.7 million. On-airport impacts contributed more than \$9.0 million in direct economic output.

Capital Improvement Project Direct Impacts

Expenditures for CIP support jobs in the design, engineering, and construction industries. The benefits from both airport CIP and tenant CIP are included in these impacts. However, the vast majority of the impacts are attributed to projects undertaken by the airport. Included among these airport projects are runway safety area improvements, reconstruction and extension of Runway 13/31 from 3,800 feet to 5,000 feet, parking lot improvements, and expansion of the airport terminal.

The direct output from CIP at the airport approached \$4.4 million, which supported 26 jobs with an annual payroll exceeding \$855,000.

Commercial Service Visitor-Related Direct Impacts

The majority of aviation visitors travel to MHK via commercial airlines. Both business and recreational opportunities draw visitors to the region. Manhattan is home to Kansas State University, a major educational and research institution of the region, to say nothing of the many collegiate sporting

events held there. Fort Riley, home of the Army’s famed 1st Infantry Division – the Big Red One – is a short drive from Manhattan. The area is also known for the nearby Flint Hills Region, the largest tallgrass prairie in the United States. Manhattan hosts the Flint Hills Discovery Center, a facility that educates and entertains visitors on various aspects of the unique ecosystem.

TABLE 2 – COMMERCIAL SERVICE VISITOR IMPACTS OF MHK, 2012

Passenger Category	Enplaned Passengers	Estimated Commercial Service Visitors ¹	Average Spending per Trip	Commercial Service Visitor Expenditures
Business	31,455	17,458	\$530	\$9,252,700
Personal	27,367	15,189	\$210	\$3,189,700
Military	8,178	4,539	\$410	\$1,858,700
Total	67,000	37,186	\$385	\$14,301,100

¹ It was assumed that 55 percent of all enplaned passengers were visitors, based upon the previous study.

Source: CDM Smith, October 2012

As explained previously, visitors were split into three categories based on survey data. The average spending per visitor per trip was determined from survey data, and, as shown in **Table 2**, the average spending for all visitors was approximately \$385 per trip. This was nearly the same value that was used for MHK in the 2009 study, validating the estimate.

Commercial service visitor impacts accounted for more than half of all direct impacts, reflecting the importance and recent growth of scheduled commercial airline service at MHK. Direct commercial service visitor expenditures were estimated at more than \$14.3 million. This spending supported 188 jobs, with a direct payroll of more than \$4.0 million.

General Aviation Visitor-Related Direct Impacts

General aviation visitors use MHK to travel to the region for both business and leisure purposes. The estimate of general aviation visitor impacts was developed from the various data described previously using the following methodology. The airport provided the number of itinerant operations and it was assumed 33 percent of these operations carried visitors, yielding 1,812 true transient arrivals (since every arrival operation has a corresponding departure operation) as shown in **Table 3**. Survey data was used to validate or modify assumptions from the 2009 study. This data confirmed the average spending per trip of \$85 per visitor, but indicated that the number of visitors per arrival of 2.7 from the 2009 study¹ was too conservative. Survey data supported increasing the average number of visitors per arrival to 4.6, which resulted in 8,335 general aviation visitors. With average spending of \$85 per visitor, direct general aviation visitor expenditures were more than \$708,000.

¹ This is not surprising since the 2009 study used averages for groups of general aviation airports and not individual airports.

TABLE 3 – GENERAL AVIATION VISITOR EXPENDITURES ESTIMATE OF MHK, 2012

Estimated Itinerant Operations	True Transient Arrivals	Visitors per Arrival	Estimated GA Visitors	Average Spending per Trip	General Aviation Visitor Expenditures
10,984	1,812	4.6	8,335	\$85	\$708,500

Source: CDM Smith, October 2012

This spending supported 14 jobs with a payroll of more than \$298,000.

Multiplier Impacts

As previously discussed, multiplier impacts are those caused when the impacts generated by the initial economic inputs re-circulate through the local and regional economies. The following section details how multipliers in the IMPLAN model, based on averages in Kansas, were used to estimate multiplier impacts at MHK.

IMPLAN Multipliers Used in Model

The IMPLAN model was used to measure the multiplier effect and to quantify secondary impacts at MHK. The same IMPLAN multipliers specific to Kansas’ industrial sectors used in the 2009 study were used in this analysis.

For purposes of estimating multiplier impacts, airport tenants were classified into one of three categories - aviation, concession, or government - based upon the nature of their business. This was done to facilitate IMPLAN modeling of multipliers. Aviation multipliers were used for airlines, aircraft maintenance, FBOs, and flight schools. Retail, food and beverage, and car rental tenants had a set of concession multipliers applied to estimate multiplier impacts. Government-related entities received unique multipliers for estimating multiplier impacts. Impacts stemming from construction projects were broken out from each tenant so a set of construction-related multipliers could be used. A unique set of multipliers was applied to the impacts of general aviation visitors and commercial service visitors. Different multipliers were used for each of these categories because each of these categories interacts with the Kansas economy in different ways.

There were numerous multipliers used to develop the input-output model for MHK, but the end result of their impacts can be summarized in the form of average multipliers that take into account the mix of business and visitor activities at the airport. **Table 4** shows the weighted average multipliers used for this study.

TABLE 4 – AVERAGE IMPLAN MULTIPLIERS FOR MHK, 2012

Total Employment Multiplier	Total Payroll Multiplier	Total Output Multiplier
1.67	1.71	1.63

Source: IMPLAN and CDM Smith, October 2012.

The effects of these multipliers are fairly straightforward. For example, 100 direct employees result in a multiplier impact of 67 full-time equivalent employees in all sectors of the economy for a total

employment of 167. Similarly, \$100 of direct output creates a multiplier output impact equivalent to \$63, for a total impact of \$163.

Total Multiplier Impacts

Multiplier impacts include off-airport economic activity that is in direct support to on-airport activity. Such impacts include the workers at the FBO’s vendors (such as fuel suppliers) as well as jobs and payroll in the region’s service industries. Another example is the multiplier impacts from visitor spending. When visitors fly into the Manhattan region, they may spend money on lodging at a local hotel. The hotel requires certain goods and services to provide service, and the provision of these goods and services creates additional jobs, payroll and output. IMPLAN multipliers developed from the Kansas hospitality industry were used to estimate these multiplier impacts.

Table 5 details all multiplier impacts at MHK. The combination of on-airport, CIP, and visitor-related multiplier impacts resulted in 197 jobs, \$5.6 million in payroll, and \$17.9 million in output.

TABLE 5 – MULTIPLIER IMPACTS OF MHK, 2012

Multiplier Impacts	Employment	Payroll	Output
On-Airport Impacts	63	\$2,019,200	\$5,257,800
Capital Improvement Projects	29	\$560,200	\$2,970,300
Commercial Service Visitor Impacts	100	\$2,817,500	\$9,235,300
General Aviation Visitor Impacts	5	\$168,200	\$443,900
Total Multiplier Impacts	197	\$5,565,100	\$17,907,300

Source: CDM Smith, October 2012

Total Impacts

Table 6 details the total economic impacts generated by MHK, which are the combination of direct and multiplier impacts. Total employment was 489 jobs in 2012. Payroll from all these employees was estimated at approximately \$13.4 million. Total output generated by MHK was estimated at more than \$46.3 million.

TABLE 6 – TOTAL ECONOMIC IMPACTS OF MHK, 2012

Total Impacts	Employment	Payroll	Output
On-Airport Impacts	127	\$4,690,700	\$14,301,700
Capital Improvement Projects	55	\$1,415,600	\$7,349,500
Commercial Service Visitor Impacts	288	\$6,821,900	\$23,536,400
General Aviation Visitor Impacts	19	\$466,400	\$1,152,400
Total Economic Impacts	489	\$13,394,600	\$46,340,000

Source: CDM Smith, October 2012

1.3 Comparison with 2009 Economic Impacts

MHK previously had an economic impact study done as part of the statewide airport economic impact study in 2009. **Table 7** shows the total impacts from that study and compares it to the total impacts of this study.

TABLE 7 – COMPARISON OF TOTAL ECONOMIC IMPACTS OF MHK, 2009 TO 2012

Impact	2009 Economic Impact Study	2012 Economic Impact Study	Percent Change
Employment	233	489	110%
Payroll	\$6,483,200	\$13,394,600	107%
Output	\$22,888,900	\$46,340,000	102%

Source: CDM Smith, October 2012

As seen in the table, jobs, payroll and output associated with MHK have more than doubled since the 2009 study. While on-airport, CIP, and general aviation visitor impacts all increased from 2009, the most significant increases took place in the commercial service visitor impacts. This was due to enplanements at MHK soaring from 15,600 in 2009 to an estimated 67,000 in 2012, generating substantially more visitors to the region. These visitors spent an estimated \$14.4 million, which was 327 percent more than the estimated \$3.3 million commercial service visitors spent in 2009. Jobs and payroll associated with commercial service visitors increased proportionally, resulting in significantly higher economic impacts in 2012 as compared to 2009.

A comparison of MHK’s impacts with several other Kansas airports helps to put these numbers in perspective. **Table 8** shows the total impacts that were estimated based on conditions in 2009 at three other Kansas airports, along with the total impacts of MHK in 2012.

TABLE 8 – COMPARISON OF IMPACTS OF MHK TO OTHER AIRPORTS

Airport	Total Employment	Total Payroll	Total Output
Manhattan Regional Airport (MHK) - 2012	489	\$13.4 million	\$46.3 million
Salina Municipal (SLN) - 2009	995	\$39.6 million	\$146.8 million
Forbes Field (FOE) - 2009	1,303	\$54.1 million	\$100.0 million
Garden City Regional (GCK) - 2009	187	\$5.8 million	\$25.3 million

Source: CDM Smith, October 2012 and Kansas Aviation Economic Impact Study Technical Report, 2009

MHK has a fairly diversified base of impacts. Its multiple FBOs, growing American Airlines service, and assorted services for travelers ensure a good mix of business that make for a strong economic foundation for the airport.

1.4 Summary

MHK is a significant economic engine for the region and Kansas. The airport supports employment for 489 workers, with an associated payroll of nearly \$13.4 million. On-airport economic output exceeds \$14.3 million. Spending related to CIP at the airport contributes another \$7.4 million to economic output. Commercial service visitors are the biggest economic driver for the airport, generating more than \$23.5 million in total economic output. General aviation visitors add another \$1.2 million of output. Total economic output attributed to the airport in 2012 exceeded \$46.3 million.