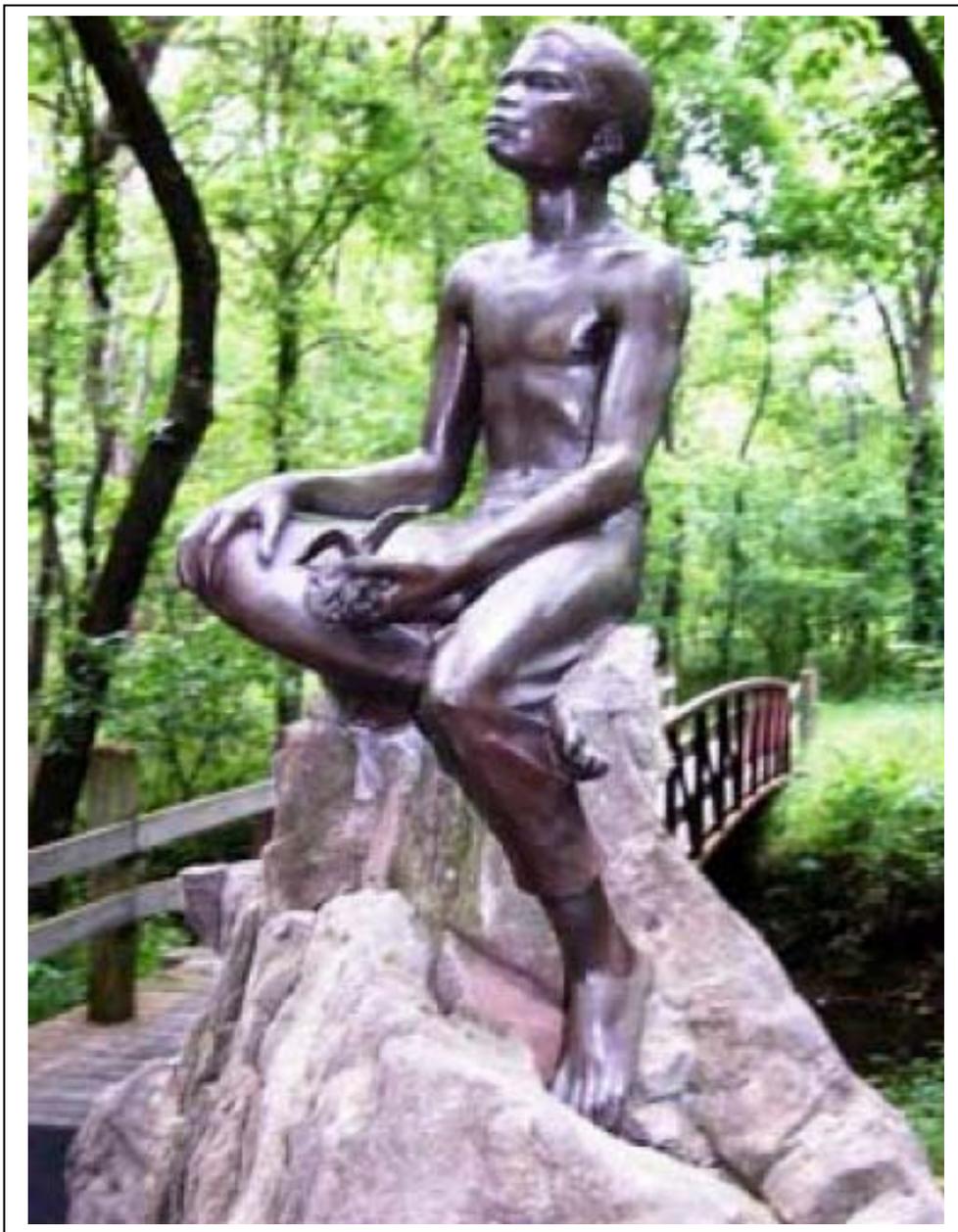




Impacts of Visitor Spending on the Local Economy: *George Washington Carver National Monument, 2010*



ON THE COVER

Statue of George Washington Carver

Photo courtesy of George Washington Carver National Monument

Impacts of Visitor Spending on the Local Economy: *George Washington Carver National Monument, 2010*

Philip S. Cook

Visitor Services Project
Park Studies Unit
University of Idaho
Moscow, ID 83844-1139

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Data in this report were collected and analyzed using methods based on established, peer-reviewed protocols and were analyzed and interpreted within the guidelines of the protocols.

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Executive Summary

George Washington Carver National Monument hosted 36,118 recreation visits in 2010. After adjusting for visitor group size and re-entries into the park, there were 11,303 visitor group trips to the park in 2010. Based on a 2010 Visitor Services Project survey conducted June 12-July 3, 72% of these visitor group trips were day trips not including an overnight stay within 30 miles of the park.¹ Twelve percent of the visitor group trips involved an overnight stay in motels, lodges or cabins outside the park, and 3% of visitor group trips were overnight stays in campgrounds outside the park.

Visitors reported expenditures of their group inside the park and in the surrounding communities within 30 miles of the park. The average visitor group consisted of 3.1 people and spent \$51 in the park and within 30 miles of the park. On a visitor group trip basis, average spending in 2010 was \$11 for visitors from the local region on day trips, \$25 for non-local visitors on day trips, \$185 for visitors staying in motels or lodges outside the park, and \$173 for visitors camping outside the park. Overall 89% of spending took place outside the park.

Total visitor spending in 2010 within 30 miles of the park was \$574,000 including \$62,000 inside the park. The greatest proportions of expenditures were for lodging (25%), gas & oil (24%), and restaurant meals and bar expenses (21%). Overnight visitors staying in motels or lodges outside the park accounted for 44% of the total spending, and non-local day trip visitors accounted for 25%.

Forty-five percent of visitors indicated the park visit was the primary reason for the trip to the area. Counting only a portion of visitor expenses if the park visit was not the primary trip purpose yields \$417,000 in spending attributed directly to the park.

The economic impact of park visitor spending was estimated by applying the spending to an input-output model (IMPLAN) of the local economy. The local region was defined as a seven county region including Newton, Barry, Jasper, Lawrence, and McDonald counties in Missouri, Cherokee County, Kansas, and Ottawa County, Oklahoma. This region roughly coincides with the 30 mile radius for which spending was reported.

Including direct and secondary effects, the \$417,000 in visitor spending attributed directly to the park supports 6 jobs in the area and generates \$418,000 in output (sales revenues), \$136,000 in labor income and \$227,000 in value added.²

A separate study estimated impacts of the park employee payroll on the local economy.³ The park itself employed 15 people in FY 2009 with a total payroll including benefits of \$770,973. Including secondary effects, the local impact of the park payroll in FY 2009 was 18 jobs, \$861,000 in labor income, and \$1,031,000 total value added.

¹ Results in this study sometimes differ from those reported in the VSP survey report (Blotkamp et al. 2010) because the current analysis excludes some cases as outliers. See Study Limitations and Error section.

² Jobs include fulltime and part-time jobs. Labor income consists of wages and salaries, payroll benefits and income of sole proprietors. Value added includes labor income as well as property income (dividend, royalties, interest and rents) to area businesses and indirect business taxes (sales, property, and excise taxes).

³ Stynes (2011).

Acknowledgments

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Introduction

George Washington Carver National Monument (NM) preserves the boyhood home of George Washington Carver, American scientist, botanist, educator, and inventor. The 240-acre site became a national monument in 1943, and was the first national monument dedicated to an African-American. The park is located two miles west of Diamond, Missouri, in Newton County of southwestern Missouri. George Washington Carver NM received 35,067 recreation visits in 2010 (Table 1).

Table 1. Recreation visits, George Washington Carver National Monument, 2010

Month	Recreation Visits
January	1,089
February	1,384
March	2,095
April	4,751
May	4,582
June	4,098
July	4,175
August	2,885
September	3,454
October	3,504
November	2,338
<u>December</u>	<u>712</u>
Total	35,067

Source: NPS Public Use Statistics 2010.

The purpose of this study is to estimate the local economic impacts of visitors to George Washington Carver NM in 2010. Economic impacts are measured as the direct and secondary sales, income, and jobs in the local region resulting from spending by park visitors. (See Appendix A: Glossary for definitions of terms.) The local economic region defined for this study includes Jasper, Lawrence, McDonald, Newton, and Barry counties, Missouri, and Cherokee County, Kansas, and Ottawa County, Oklahoma.

This seven-county region has a population of 320,039 (USCB 2010), gross regional product of \$9.4 billion (MIG, Inc. 2008), median household income of \$37,454, and family poverty rate of 13.2% (USCB 2010). Food services and drinking places, trucking, and state and local governments are the major employers in the region (MIG, Inc. 2008), and the region experienced a 8.0% unemployment rate in 2009 (BLS 2009).

Methods

The economic impact estimates are produced using the Money Generation Model 2 (MGM2) (Stynes et al. 2007). The three main inputs to the model are:

- 1) Number of visits broken down by lodging-based segments,
- 2) Spending averages for each segment, and
- 3) Economic multipliers for the local region.

Inputs are estimated from the George Washington Carver NM Visitor Services Project (VSP) survey (Blotkamp et al. 2010), National Park Service Public Use Statistics (2010), and IMPLAN input-output modeling software (MIG, Inc. 2008). The MGM2 model provides a spreadsheet template for combining park use, spending, and regional multipliers to compute changes in sales, labor income, jobs, and value added in the region.

The VSP visitor study was conducted at George Washington Carver NM from June 12-July 3, 2010 (Blotkamp et al. 2010).⁴ This study measured visitor demographics, activities, and travel expenditures. Questionnaires were distributed to a systematic, random sample of 350 visitor groups. Visitors returned 224 questionnaires resulting in a response rate of 64%.

Spending and economic impact estimates for George Washington Carver NM are based on the 2010 VSP survey. Visitors were asked to report expenditures within 30 miles of the park. The local region for determining economic impact was defined as a seven county area around the park including, Newton, Barry, Jasper, Lawrence, and McDonald counties in Missouri, Cherokee County, Kansas, and Ottawa County, Oklahoma, which roughly coincides with the 30 mile radius for which visitor spending was reported.

The MGM2 model divides visitors into segments to help explain differences in spending across distinct user groups. Five segments were established for George Washington Carver National Monument visitors based on reported trip characteristics and lodging expenditures:

Local: Visitors from the local region.

Day trip: Visitors from outside the local region, not staying overnight within 30 miles of the park.

Motel-out: Visitors reporting motel expenses outside the park within 30 miles of the park.

Camp-out: Visitors reporting camping expenses outside the park within 30 miles of the park.

Other overnight (Other OVN): Visitors staying overnight in the local region but not reporting any lodging expenses. This segment includes visitors staying in private homes, with friends or relatives, or in other unpaid lodging.⁵

⁴ Results in this study sometimes differ from those reported in the VSP survey report (Blotkamp et al. 2010) because the current analysis excludes some cases as outliers. See Study Limitations and Error section.

⁵ Visitors reporting multiple lodging types and expenditures were classified based on the greatest reported lodging expense. Some visitors listing motels or campgrounds as lodging types did not report any lodging expenses and were classified in the other overnight (Other OVN) category.

The VSP survey was used to estimate the percentage of visitors from each segment as well as spending averages, lengths of stay, and visitor group sizes for each segment.

Results

Visits

Based on the VSP survey and park visitation figures, 72% of park entries were classified as day trip visits by either local residents or visitors from outside the region, and 28% were classified as overnight visits including an overnight stay in the local region (Table 2). The average visitor group size ranged from 2.9 to 3.8 people across the five segments with the average visitor group consisting of 3.1 people.⁶ The average length of stay in the local region on overnight trips was 2.3 nights.

Table 2. Selected visit/trip characteristics by segment, 2010

Characteristic	Local	Day	Motel-	Camp-	Other	All
	trip	trip	out	out	OVN	visitors
Visitor segment share (park entries)*	24%	48%	11%	3%	13%	100%
Average visitor group size	3.3	3.0	2.9	3.8	3.1	3.1
Length of stay (days or nights)	1.0	1.0	1.5	2.0	3.2	2.3
Re-entry rate (park entries per trip)	1.0	1.0	1.0	1.0	1.0	1.0
Percent primary purpose trips	100%	51%	47%	60%	10%	45%

*Percentages do not add to 100% due to rounding.

Forty-five percent of visitors indicated that visiting the park was the primary reason for the trip to the area. Other stated reasons were visiting friends and relatives in the area, business, or visiting other area attractions.

The 35,067 recreation visits in 2010 were allocated to the five segments using the visit segment shares in Table 2. Since spending is reported for the stay in the area, park entries were converted to trips to the area by dividing by the average number of times each visitor entered the park during their stay. Park re-entry rates were estimated based on the number of entries into the park reported by survey respondents.

Recreation visits were converted to 11,303 visitor group trips by dividing recreation visits by the average visitor group size and park entry rate for each segment (Table 3). Total person trips in 2010 were 34,969.

⁶ Visitor group size reported herein is based on the number of people covered by expenditures reported in the VSP survey.

Table 3. Recreation visits and visitor group trips by segment, 2010

Measure	Local	Day trip	Motel-out	Camp-out	Other OVN	All visitors
Recreation visits	8,396	16,990	3,951	1,185	4,544	35,067
Visitor group trips	2,522	5,663	1,362	309	1,446	11,303
Percent of visitor group trips	22%	50%	12%	3%	13%	100%
Visitor group nights	2,522	5,663	1,976	618	4,613	15,392
Person trips	8,299	16,990	3,951	1,185	4,544	34,969

Visitor Spending

The visitor survey covered expenditures of the visitor group inside the park and within 30 miles of the park. Spending averages were computed on a visitor group trip basis for each segment. The average visitor group in 2010 spent \$51 on the trip inside the park and in the local region. On a visitor group trip basis, average spending was \$11 for day trips by local residents and \$25 for day trips by non-local visitors (Table 4). Visitors staying in motels, cabins, lodges or B&B's outside the park spent an average of \$185 on their trips and those camping outside the park spent \$173. Visitor groups spent about 11% of their total spending inside the park and 89% outside the park.

Table 4. Average visitor spending by segment (\$ per visitor group per trip).

	Local	Day trip	Motel-out	Camp-out	Other OVN	All visitors*
<u>Inside Park</u>						
Admission & fees	.00	.10	.50	.00	.00	0.11
<u>Souvenirs & other expenses</u>	<u>2.26</u>	<u>4.52</u>	<u>16.55</u>	<u>5.58</u>	<u>3.87</u>	<u>5.41</u>
Total Inside Park	2.26	4.63	17.05	5.58	3.87	5.53
<u>Outside Park</u>						
Motel, hotel, cabin or B&B	.00	.00	92.70	.00	.00	11.17
Camping fees	.00	.00	.00	61.00	.00	1.67
Restaurants & bars	4.00	5.28	31.85	33.33	19.78	10.82
Groceries & takeout food	.82	1.31	5.60	18.33	8.48	3.10
Gas & oil	2.94	10.12	29.50	33.33	13.78	11.96
Local transportation	.00	.00	2.50	.00	3.48	0.75
Admission & fees	.00	.19	5.50	16.67	5.74	1.95
<u>Souvenirs & other expenses</u>	<u>1.18</u>	<u>3.83</u>	<u>.00</u>	<u>5.00</u>	<u>12.00</u>	<u>3.85</u>
Total Outside Park	8.94	20.72	167.65	167.67	63.26	45.26
Total Inside & Outside Park	11.20	25.35	184.70	173.25	67.13	50.79

* Average weighted by percent visitor group trips.

The relative standard error at a 95% confidence level for the overall spending average is 22%. A 95% confidence interval for the overall visitor group spending average is therefore \$51 plus or minus \$33 or between \$18 and \$84.

On a per night basis, visitor groups staying in motels or lodges outside the park spent \$127 in the local region, and campers spent \$87. The average reported per night lodging expense was \$64 for motels outside the park and \$31 for camping fees outside the park (Table 5).

Table 5. Average spending per night for visitor groups on overnight trips (\$ per visitor group per night).

	Motel-out	Camp-out	Other OVN
Motel, hotel, cabin or B&B	63.93	.00	.00
Camping fees	.00	30.50	.00
Restaurants & bars	21.97	16.67	6.20
Groceries & takeout food	3.86	9.17	2.66
Gas & oil	20.34	16.67	4.32
Local transportation	1.72	.00	1.09
Admission & fees	4.14	8.33	1.80
<u>Souvenirs & other expenses</u>	<u>11.41</u>	<u>5.29</u>	<u>4.97</u>
Total per visitor group per night	127.38	86.62	21.04

Total spending was estimated by multiplying the number of visitor group trips for each segment by the average spending per trip and summing across segments. George Washington Carver NM visitors spent a total of \$574,000 in the local region in 2010 (Table 6). Overnight visitors staying in motels outside the park account for 44% of the total spending, and non-local day trips account for 25%. Lodging expenses represent 25% of the total spending, gas and oil expenses represent 24%, and restaurant and bar expenses represent 21% (Figure 1).

Table 6. Total visitor spending by segment, 2010 (\$000's).

	Local	Day trip	Motel-out	Camp-out	Other OVN	All visitors
<u>Inside Park</u>						
Admission & fees	0	1	1	0	0	1
<u>Souvenirs & other expenses</u>	<u>6</u>	<u>26</u>	<u>23</u>	<u>2</u>	<u>6</u>	<u>61</u>
Total Inside Park	6	26	23	2	6	62
<u>Outside Park</u>						
Motel, hotel, cabin or B&B	0	0	126	0	0	126
Camping fees	0	0	0	19	0	19
Restaurants & bars	10	30	43	10	29	122
Groceries & takeout food	2	7	8	6	12	35
Gas & oil	7	57	40	10	20	135
Local transportation	0	0	3	0	5	8
Admission & fees	0	1	7	5	8	22
<u>Souvenirs & other expenses</u>	<u>3</u>	<u>22</u>	<u>0</u>	<u>2</u>	<u>17</u>	<u>44</u>
Total Outside Park	23	117	228	52	91	512
Total Inside & Outside Park	28	144	252	54	97	574
Segment Percent of Total	5%	25%	44%	9%	17%	100%

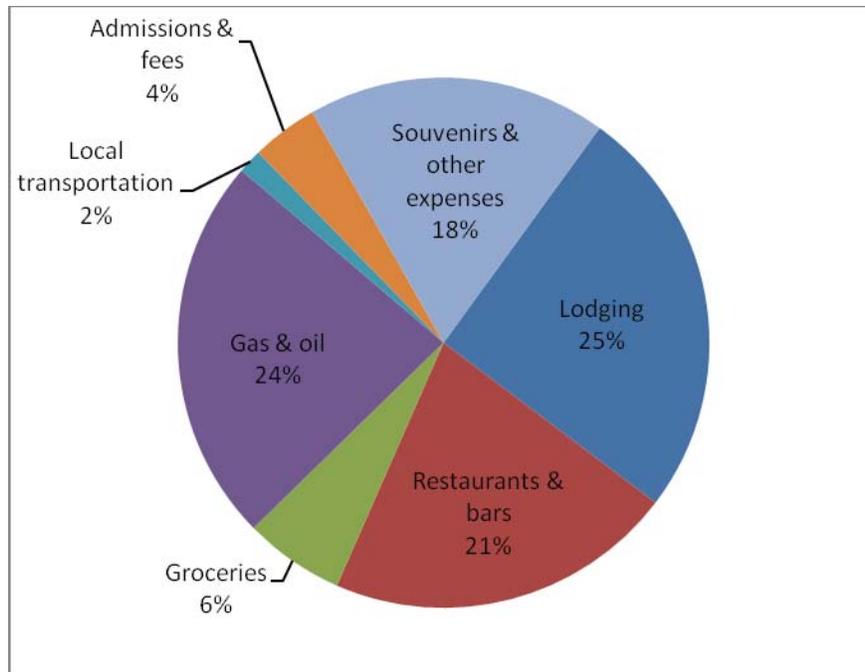


Figure 1. George Washington Carver National Monument visitor spending by category.

Visitors would still come to the region even if the park did not exist, so not all visitor spending can be attributed to the park. Fifty-five percent of visitors did not make the trip primarily to visit George Washington Carver NM. Spending directly attributed to park visits was estimated by counting all spending for trips where the park was the primary reason for the trip. If the park was not the primary trip purpose, one night of spending was counted for overnight trips and half of the spending outside the park was counted for day trips. All spending inside the park was treated as park-related spending. With these assumptions, a total of \$417,000 in visitor spending is attributed to the park visit (Table 7). This represents 73% of the overall visitor spending total.

Table 7. Total spending attributed to park visits, 2010 (\$000's).

	Local	Day trip	Motel-out	Camp-out	Other OVN	All visitors
Motel, hotel, cabin or B&B	0	0	106	0	0	106
Camping fees	0	0	0	15	0	15
Restaurants & bars	0	23	36	8	11	78
Groceries & takeout food	0	6	6	5	5	21
Gas & oil	0	43	34	8	8	93
Local transportation	0	0	3	0	2	5
Admission & fees	0	1	6	5	1	13
<u>Souvenirs & other expenses</u>	<u>6</u>	<u>42</u>	<u>27</u>	<u>4</u>	<u>9</u>	<u>87</u>
Total Attributed to Park	6	115	217	45	35	417
Percent of Spending Attributed to the Park	20%	80%	86%	83%	36%	73%
Percent of Attributed Spending	1%	28%	52%	11%	8%	100%

Economic Impacts of Visitor Spending

The economic impacts of George Washington Carver National Monument visitor spending on the local economy are estimated by applying visitor spending to a set of economic ratios and multipliers in MGM2 representing the economy of the nine county region.⁷ Economic ratios and multipliers for the region were estimated using the *Impact Analysis for Planning (IMPLAN) Professional software* (version 3, MIG, Inc. 2008) with 2008 data.⁸ Employment multipliers were adjusted to take into account price changes from 2008 to 2010 (see Study Limitations and Error section below).

Not all visitor spending is counted as direct sales to the region. The amount a visitor spends for a retail good is made up of the cost of the good from the producer, a markup by a wholesaler, and a markup by a retailer. In MGM2, retail and wholesale margins for grocery & takeout food, gas & oil, and souvenirs & other expenses are applied to visitor spending to account for mark-ups by retailers and wholesalers. The retail margins for the three sectors are 25.3%, 22.3%, and 50.0%, respectively, and the wholesale margins are 12.3%, 8.3%, and 11.4%. In addition, regional purchase coefficients from IMPLAN for all sectors are used to account for the proportion of demand within the region satisfied by imports into the region.

The tourism output sales multiplier for the region is 1.40. Every dollar of direct sales to visitors generates another \$0.40 in secondary sales through indirect and induced effects.⁹ (See Appendix A: Glossary for further explanation of terms.)

Impacts are estimated based first on all visitor spending and then based on the visitor spending attributed to the park. Including all visitor spending accounts for the overall contribution visitors make to the economy of the local region. Including only visitor spending attributable to the park accounts for the impact or contribution the park makes to the economy of the local region.

Using all visitor spending and including direct and secondary effects, the \$574,000 spent by park visitors supports 8.3 jobs in the local region and generates \$570,000 in sales, \$183,000 in labor income and \$306,000 in value added (Table 8).¹⁰

Value added is the preferred measure of the contribution of visitors to the local economy as it includes all sources of income to the area -- payroll benefits to workers, profits and rents to businesses, and sales and other indirect business taxes that accrue to government units. Value added impacts are also comparable to Gross Regional Product, the broadest measure of total economic activity in a region. The largest direct effects are in lodging establishments and restaurants.

⁷ Economic ratios convert between various economic measures, e.g., direct spending to the directly associated jobs, labor income, and value added in each sector. Economic multipliers capture the secondary effects of economic measures.

⁸ See Appendix B: Economic Ratios and Multipliers for the region.

⁹ Indirect effects result from tourism businesses buying goods and services from local firms, while induced effects stem from household spending of income earned from visitor spending.

¹⁰ Jobs include full and part time jobs. Labor income consists of wages and salaries, payroll benefits and income of sole proprietors. Value added includes labor income as well as profits and rents to area businesses and sales and excise taxes.

Using only visitor spending attributable to the park by including only some spending on trips where the primary trip purpose was not to visit George Washington Carver NM reduces the overall impacts by about 27% (Table 9; see spending inclusion assumptions in previous section). Including direct and secondary effects, the \$417,000 spent by park visitors and attributable to the park supports 6 jobs in the local region and generates \$418,000 in sales, \$136,000 in labor income and \$227,000 in value added.

Table 8. Economic impacts of all visitor spending on the local economy, 2010.

Sector/Spending category	Sales (\$000's)	Jobs	Labor Income (\$000's)	Value Added (\$000's)
Direct Effects				
Motel, hotel, cabin or B&B	126	1.9	41	74
Camping fees	19	0.2	6	9
Restaurants & bars	122	2.7	38	56
Groceries & takeout food	9	0.2	4	6
Gas & oil	30	0.3	9	21
Local transportation	8	0.2	3	5
Admission & fees	23	0.2	4	7
Souvenirs & other expenses	52	0.9	23	34
Wholesale trade	13	0.1	5	8
<u>Local production of goods</u>	<u>5</u>	<u>0.0</u>	<u>1</u>	<u>1</u>
Total Direct Effects	408	6.7	133	220
<u>Secondary Effects</u>	<u>162</u>	<u>1.6</u>	<u>50</u>	<u>86</u>
Total Effects	570	8.3	183	306

Note: Impacts of \$574,000 in visitor spending reported in Table 6.

Table 9. Economic impacts of visitor spending attributed to the park, 2010.

Sector/Spending category	Sales (\$000's)	Jobs	Labor Income (\$000's)	Value Added (\$000's)
Direct Effects				
Motel, hotel, cabin or B&B	106	1.6	34	62
Camping fees	15	0.2	5	7
Restaurants & bars	78	1.7	24	36
Groceries & takeout food	5	0.1	2	3
Gas & oil	21	0.2	6	14
Local transportation	5	0.1	2	3
Admission & fees	13	0.1	2	4
Souvenirs & other expenses	43	0.7	19	28
Wholesale trade	10	0.1	3	6
<u>Local production of goods</u>	<u>3</u>	<u>0.0</u>	<u>1</u>	<u>1</u>
Total Direct Effects	299	4.8	99	164
<u>Secondary Effects</u>	<u>119</u>	<u>1.2</u>	<u>37</u>	<u>63</u>
Total Effects	418	6.0	136	227

Note: Impacts of \$417,000 in visitor spending attributed to park reported in Table 7.

Impacts of the NPS Park Payroll

In addition to visitor spending, spending by park employees also impacts the local region. A separate study (Stynes 2011) estimated the impact of the park's National Park Service (NPS) payroll by applying economic multipliers to wage and salary data to capture the induced effects of NPS employee spending the local economy. George Washington Carver NM employed 15 people in FY 2009 with a total payroll including benefits of \$770,973. Including secondary effects, the local impact of the park payroll in FY 2009 was 18 jobs, \$861,000 in labor income and \$1,031,000 total value added (Stynes 2011).

Study Limitations and Errors

The accuracy of the MGM2 estimates rests on the accuracy of the three inputs: visits, spending averages, and multipliers. Visits are taken from NPS Public Use Statistics (2010). Recreation visit estimates rely on counting procedures at the park, which may miss some visitors and count others more than once during their visit. Re-entry rates are important to adjust the park visit counts to reflect the number of visitor trips to the region rather than park entries. Re-entry rates were estimated based on visitor responses to a VSP survey question about the number of times they entered the park.

Spending averages are derived from the 2010 George Washington Carver NM VSP visitor survey (Blotkamp et al. 2010). Estimates from the surveys are subject to sampling errors, measurement errors, and potential seasonal/sampling biases. The overall spending averages are subject to sampling errors of 22%.

Spending averages are also sensitive to decisions about outliers and treatment of missing data. In order to estimate spending averages, incomplete spending data was filled with zeros. Visitor groups of more than 8 people (12 cases), visiting the local region for more than 7 nights (1 case), arriving in more than 4 vehicles (2 cases), or spending greater than \$365 (the mean plus two times the standard deviation of the mean for spending, 10 cases) were omitted from the analysis. This is a conservative assumption about outliers and likely results in conservative estimates of economic impacts.

The sample only covers visitors during June. To extrapolate to annual totals, it was assumed that this sample represented visitors throughout the year.

Multipliers are derived from an input-output model of the local economy using IMPLAN (MIG, Inc. 2008). The basic assumptions of input-output models are that sectors have homogeneous, fixed and linear production functions, that prices are constant, and that there are no supply constraints. The IMPLAN system uses national average production functions for each of 440 sectors based on the NAICS system (see Appendix B, Table B2). The most recent local IMPLAN datasets available for this analysis were 2008. It was therefore assumed that most multipliers have remained stable through 2010. Employment multipliers were adjusted to take into account price changes through 2010. Local job to sales ratios were adjusted from 2008 to 2010 based on the percentage changes in national job to sales ratios between 2008 and 2010 and then adjusted to 2010 based on consumer price indices (BLS 2010).

Sorting out how much of the spending to attribute to the park when the park is not the primary motivation for the trip is somewhat subjective. Because 55% of visitors to George Washington Carver NM did not make the trip primarily to visit the park and most spending occurred outside the park, adjustments for non-primary purpose trips have a significant effect on the overall spending and impact estimates.

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Appendix A: Glossary

Term	Definition
Direct effects	Changes in sales, income and jobs in those business or agencies that directly receive visitor spending.
Economic multiplier	Captures the size of secondary effects and are usually expressed as a ratio of total effects to direct effects.
Economic ratio	Converts various economic measures from one to another. For example, direct sales can be used to estimate direct effects on jobs, personal income, and value added by applying economic ratios. I.e., Direct jobs = direct sales * jobs to sales ratio Direct personal income = direct sales * personal income to sales ratio Direct Value added = direct sales * value added to sales ratio
Indirect effects	Changes in sales, income and jobs in industries that supply goods and services to the businesses that sell directly to visitors, i.e., businesses in the supply chain. For example, linen suppliers benefit from visitor spending at lodging establishments.
Induced effects	Changes in economic activity in the region resulting from household spending of income earned through a direct or indirect effect of visitor spending. For example, motel and linen supply employees live in the region and spend their incomes on housing, groceries, education, clothing and other goods and services. IMPLAN's Social Accounting Matrix (SAM) multipliers also include induced effects resulting from local/state/federal government spending.
Jobs	The number of jobs in the region supported by visitor spending. Job estimates are not full time equivalents, but include both fulltime and part-time positions.
Labor income	Wage and salary income, sole proprietor (business owner) income and employee payroll benefits.
Regional purchase coefficient (RPC)	The proportion of demand within a region supplied by producers within that region.
Retail margin	The markup to the price of a product when a product is sold through a retail trade activity. Retail margin is calculated as sales receipts minus the cost of goods sold.
Sales	Direct sales (retail goods and services) by firms within the region to park visitors.

Term	Definition
Secondary effects	Changes in the economic activity in the region that result from the re-circulation of money spent by visitors. Secondary effects include indirect and induced effects.
Total effects	Sum of direct, indirect and induced effects. <ul style="list-style-type: none"> • Direct effects accrue largely to tourism-related businesses in the area • Indirect effects accrue to a broader set of businesses that serve these tourism firms. • Induced effects are distributed widely across a variety of local businesses.
Value added	Labor income plus property income (rents, dividends, royalties, interest) and indirect business taxes. As the name implies, it is the net value added to the region's economy. For example, the value added by a hotel includes wages and salaries paid to employees, their payroll benefits, profits of the hotel, and sales, property, and other indirect business taxes. The hotel's non-labor operating costs such as purchases of supplies and services from other firms are not included as value added by the hotel.
Visitor group	A group of people traveling together to visit the park. Visitor group is the basic sampling unit for VSP surveys; each visitor group receives only one survey.
Wholesale margin	The markup to the price of a product when a product is sold through wholesale trade. Wholesale margin is calculated as wholesale sales minus the cost of the goods sold.

Appendix B: Economic Multipliers and IMPLAN Sectors

Table B1. Economic ratios and multipliers for selected tourism-related sectors, George Washington Carver NM region, 2010.

Sector	Direct effects			Total effects multipliers				
	Jobs/\$ MM sales	Income /sales	Value added/ sales	Sales I	Sales SAM	JobII/ MM sales	Income II/ sales	VA II/ sales
Motel, hotel, cabin or B&B	16.05	0.32	0.59	1.22	1.41	20.18	0.45	0.80
Camping fees	13.39	0.32	0.46	1.26	1.46	18.41	0.47	0.71
Restaurants & bars	20.74	0.31	0.46	1.21	1.39	24.34	0.42	0.66
Groceries & takeout food	18.47	0.42	0.63	1.18	1.41	22.65	0.55	0.86
Gas & oil	11.74	0.30	0.69	1.15	1.33	15.06	0.41	0.87
Local transportation	23.52	0.41	0.59	1.11	1.33	27.08	0.52	0.78
Admission & fees	9.74	0.16	0.29	1.29	1.42	14.00	0.30	0.51
Souvenirs & other expenses	17.08	0.44	0.66	1.17	1.41	21.22	0.57	0.88
Local production of goods	6.81	0.23	0.30	1.14	1.28	9.38	0.32	0.45
Wholesale trade	7.31	0.37	0.63	1.17	1.37	11.13	0.49	0.84

Source: IMPLAN (MIG, Inc. 2008).

Brief explanation of table

Direct effects are economic ratios to convert sales in each sector to jobs, income and value added.

Jobs/\$MM sales is jobs per million dollars in sales.

Income/sales is the percentage of sales going to wages, salaries, and employee benefits.

Value added/sales is the percentage of sales that is value added (Value added covers all income, rents and profits and indirect business taxes).

Total effects are multipliers that capture the total effect relative to direct sales.

Sales I captures only direct and indirect sales.

Sales SAM is the SAM sales multiplier = (direct + indirect + induced sales) /direct sales.

Job II/ MM sales = total jobs (direct + indirect + induced) per \$ million in direct sales.

Income II /sales = total income (direct + indirect + induced) per \$ of direct sales.

VA II/sales = total value added (direct + indirect + induced) per \$ of direct sales.

Using the hotel sector row to illustrate

Direct Effects: Every million dollars in hotel sales creates 16.0 jobs in hotels. Thirty-two percent of hotel sales goes to wages and salaries of hotel employees and 59% of hotel sales is value added. That means 41% of hotel sales goes to purchase inputs by hotels. The wage and salary income creates the induced effects and the 41% spent on purchases by the hotel starts the rounds of indirect effects.

Multiplier effects: There is an additional 22 cents of indirect sales in the region for every dollar of direct hotel sales (type I sales multiplier = 1.22). Total secondary sales are 41 cents per dollar of direct sales, which means 22 cents in indirect effects and 19 cents in induced effects. An additional 4.2 jobs are created from secondary effects of each million dollars in hotel sales (20.2

total jobs – 16.0 direct jobs per \$million). These jobs are distributed across other sectors of the local economy. Similarly, the secondary effects on income for each dollar of hotel sales are 13% (45%-32%), and the secondary effects on value added for each dollar of hotel sales are 21% (80%-59%). Including secondary effects, every million dollar of hotel sales in the region yields \$1.41 million in sales, \$450,000 in income, and \$800,000 in value added.

Table B2. MGM2 sector correspondence to IMPLAN and 2007 NAICS sectors.

MGM sector	IMPLAN		2007 NAICS
	No.	Name	
Motel, hotel, cabin or B&B	411	Hotels and motels, including casino hotels	72111-2
Camping fees	412	Other accommodations	72119, 7212-3
Restaurants & bars	413	Food services and drinking places	722
Groceries & takeout food	324	Retail - Food and beverage	445
Gas & oil	326	Retail - Gasoline stations	447
Local transportation	336	Transit and ground passenger transportation	485
Admission & fees	410	Other amusement and recreation industries	71391-3, 71399
Souvenirs & other expenses	329	Retail - General merchandise	452
Local production of goods	317	All other miscellaneous manufacturing	339993, 339995, 339999
Wholesale trade	319	Wholesale trade	42

Source: IMPLAN (MIG, Inc. 2008).

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Natural Resource Stewardship and Science
1201 Oakridge Drive, Suite 150
Fort Collins, CO 80525

www.nature.nps.gov

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