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Natural Resource Stewardship and Science

Impacts of Visitor Spending on the Local Economy:

James A. Garfield National Historic Site, 2009

ON THE COVER
Garfield home
Photo courtesy of James A. Garfield National Historic Site

Impacts of Visitor Spending on the Local Economy:
James A. Garfield National Historic Site, 2009

Philip S. Cook

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

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This manuscript received the appropriate level of peer review to ensure that the information is scientifically credible, technically accurate, appropriately written for the intended audience, and designed and published in a professional manner.

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

James A. Garfield National Historic Site hosted 17,100 recreation visits in 2009. After adjusting for visitor group size and re-entries into the park, there were 6,451 visitor group trips to the park in 2009. Based on a Visitor Services Project (VSP) survey conducted July 24-September 1, 2009, 68% of these visitor group trips were day trips not including an overnight stay within a one-hour drive of the park.[1] Seventeen percent of the visitor group trips involved an overnight stay in motels, lodges or cabins outside the park, and 2% 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 a one-hour drive of the park. The average visitor group consisted of 2.6 people and spent $79 in the park and within a one-hour drive of the park. On a visitor group trip basis, average spending in 2009 was $23 for visitors from the local region on day trips, $38 for non-local visitors on day trips, $261 for visitors staying in motels or lodges outside the park, and $189 for visitors camping outside the park. Overall 89% of spending took place outside the park.

Total visitor spending in 2009 within an hour's drive of the park was $510,000 including $58,000 inside the park. The greatest proportions of expenditures were for lodging (34%) and restaurant meals and bar expenses (25%). Overnight visitors staying in motels or lodges outside the park accounted for 58% of the total spending, and non-local day-trip visitors accounted for 18%.

Forty-nine 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 $349,000 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 nine county region including Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, Summit, and Trumbull counties in Ohio. This region roughly coincides with the one-hour driving radius for which spending was reported.

Including direct and secondary effects, the $349,000 in visitor spending attributed directly to the park supports 6 jobs in the area and generates $529,000 in output (sales revenues), $171,000 in labor income and $292,000 in value added.[2]

[1] Results in this study sometimes differ from those reported in the VSP survey report (Cook et al. 2010) for two reasons. First, the VSP survey results were reported separately for Old Village Market visitors and non-Old Village Market visitors. The current analysis reports results for all visitors. Second, 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). Impacts on the local economy of spending by park employees are not included in these results.

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Introduction

The James A. Garfield National Historic Site (NHS) preserves the home of James A. Garfield, 20th President of the United States. The five-acre site became a National Historic Site in 1980. The park is located in Mentor, Ohio, which is in Lake County east of Cleveland. James A. Garfield NHS received 17,100 recreation visits in 2009 (Table 1).

Table 1. Recreation visits, James A. Garfield National Historic Site, 2009

Month	Recreation Visits
January	252
February	1,226
March	478
April	852
May	2,674
June	1,801
July	3,656
August	3,656
September	981
October	882
November	279
December	363
Total	**17,100**

Source: NPS Public Use Statistics 2009.

The purpose of this study is to estimate the local economic impacts of visitors to James A. Garfield NHS in 2009. Economic impacts are measured as the direct and secondary sales, income, and jobs in the local region resulting from spending by park visitors.[3] (See Appendix A: Glossary for definitions of terms.) The local economic region defined for this study includes Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, Summit, and Trumbull counties, Ohio.

This nine-county region of Ohio has a population of 3.2 million (USCB 2000), gross regional product of $139 billion (MIG, Inc. 2008), median household income of $42,260, and family poverty rate of 8.0% (USCB 2000). Food services and drinking places, and state and local governments are the major employers in the region (MIG, Inc. 2008), and the region experienced a 9.7% unemployment rate in 2009 (BLS 2009).

[3] The analysis herein does not include impacts on the local economy of spending by park employees.

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 James A. Garfield NHS Visitor Services Project (VSP) survey (Cook et al. 2010), National Park Service Public Use Statistics (2009), 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 survey was conducted at James A. Garfield NHS from July 24-September 1, 2009 (Cook et al. 2010).[4] This survey measured visitor demographics, activities, and travel expenditures. Questionnaires were distributed to a systematic, random sample of 339 visitor groups. Visitors returned 241 questionnaires resulting in a response rate of 71%.

Spending and economic impact estimates for James A. Garfield NHS are based on the 2009 VSP survey. Visitors were asked to report expenditures within a one-hour drive of the park. The local region for determining economic impact was defined as a nine county area around the park including Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, Summit, and Trumbull counties in northeastern Ohio, which roughly coincides with the one-hour driving 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 James A. Garfield National Historic Site 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 an hour's drive of the park.

Motel-out: Visitors reporting motel expenses outside the park within an hour's drive of the park.

Camp-out: Visitors reporting camping expenses outside the park within an hour's drive 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 (Cook et al. 2010) for two reasons. First, the VSP survey results were reported separately for Old Village Market visitors and non-Old Village Market visitors. The current analysis reports results for all visitors. Second, 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, 70% of park entries were classified as day trip visits by either local residents or visitors from outside the region, and 30% were classified as overnight visits including an overnight stay in the local region (Table 2). The average visitor group size ranged from 2.4 to 2.7 people across the five segments with the average visitor group consisting of 2.6 people.[6] The average length of stay in the local region on overnight trips was 2.2 nights.

Table 2. Selected visit/trip characteristics by segment, 2009

Characteristic	Local	Day trip	Motel-out	Camp-out	Other OVN	All visitors
Visitor segment share (park entries)	32%	38%	16%	2%	12%	100%
Average visitor group size	2.7	2.6	2.4	2.5	2.4	2.6
Length of stay (days or nights)	1.0	1.0	2.0	3.7	2.5	2.2
Re-entry rate (park entries per trip)	1.0	1.0	1.0	1.1	1.0	1.0
Percent primary purpose trips	100%	59%	37%	50%	33%	49%

Forty-nine 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 17,100 recreation visits in 2009 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 6,451 visitor group trips by dividing recreation visits by the average visitor group size and park re-entry rate for each segment (Table 3). Total person trips in 2009 were 11,303.

[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, 2009

Measure	Local	Day trip	Motel-out	Camp-out	Other OVN	All visitors
Recreation visits	5,437	6,533	2,795	362	1,973	17,100
Visitor group trips	1,954	2,438	1,127	130	801	6,451
Percent of visitor group trips*	30%	38%	17%	2%	12%	100%
Visitor group nights	1,954	2,438	2,223	478	1,984	9,077
Person trips	5,351	6,362	2,700	332	1,909	11,303

*Percentages do not equal 100% due to rounding.

Visitor Spending

The visitor survey covered expenditures of the visitor group inside the park and within a one-hour drive of the park. Spending averages were computed on a visitor group trip basis for each segment. The average visitor group in 2009 spent $79 on the trip inside the park and in the local region (Table 4). On a visitor group trip basis, average spending was $23 for day trips by local residents and $38 for day trips by non-local visitors. Visitors staying in motels, cabins, lodges or B&B's outside the park spent an average of $261 on their trips and those camping outside the park spent $189. 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*
Inside Park						
Admission & fees	4.60	6.46	4.82	9.09	1.83	5.09
Souvenirs & other expenses	3.02	4.30	4.71	.00	3.89	3.85
Total Inside Park	**7.62**	**10.75**	**9.53**	**9.09**	**5.72**	**8.93**
Outside Park						
Motel, hotel, cabin or B&B	.00	.00	148.56	.00	.00	25.96
Camping fees	.00	.00	.00	61.82	.00	1.25
Restaurants & bars	7.23	14.23	50.05	25.00	25.50	19.99
Groceries & takeout food	2.15	1.43	9.22	21.36	7.93	4.22
Gas & oil	1.16	8.18	25.45	49.64	13.07	10.52
Local transportation	.00	.00	2.92	.00	.00	0.51
Admission & fees	.97	2.00	5.75	3.27	8.30	3.15
Souvenirs & other expenses	3.63	1.87	9.96	19.09	5.33	4.60
Total Outside Park	**15.13**	**27.73**	**251.92**	**180.18**	**60.13**	**70.19**
Total Inside & Outside Park	**22.76**	**38.48**	**261.45**	**189.27**	**65.86**	**79.13**

***** Average weighted by percent visitor group trips.

The relative standard error at a 95% confidence level for the overall spending average is 17%. A 95% confidence interval for the overall visitor group spending average is therefore $79 plus or minus $36 or between $43 and $115.

On a per night basis, visitor groups staying in motels or lodges outside the park spent $133 in the local region, and campers spent $52. The average reported per night lodging expense was $75 for motels outside the park and $17 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	75.33	0.00	0.00
Camping fees	0.00	16.86	0.00
Restaurants & bars	25.38	6.82	10.30
Groceries & takeout food	4.68	5.83	3.20
Gas & oil	12.90	13.54	5.28
Local transportation	1.48	0.00	0.00
Admission & fees	5.36	3.37	4.09
Souvenirs & other expenses	7.44	5.21	3.72
Total per visitor group per night	**132.56**	**51.62**	**26.60**

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. James A. Garfield NHS visitors spent a total of $510,000 in the local region in 2009 (Table 6). Overnight visitors staying in motels outside the park account for 58% of the total spending, and non-local day trips account for 18%. Lodging expenses represent 34% of the total spending, and restaurant and bar expenses represent 25% (Figure 1).

Table 6. Total visitor spending by segment, 2009 ($000's).

	Local	Day trip	Motel-out	Camp-out	Other OVN	All visitors
Inside Park						
Admission & fees	9	16	5	1	1	33
Souvenirs & other expenses	6	10	5	0	3	25
Total Inside Park	**15**	**26**	**11**	**1**	**5**	**58**
Outside Park						
Motel, hotel, cabin or B&B	0	0	167	0	0	167
Camping fees	0	0	0	8	0	8
Restaurants & bars	14	35	56	3	20	129
Groceries & takeout food	4	3	10	3	6	27
Gas & oil	2	20	29	6	10	68
Local transportation	0	0	3	0	0	3
Admission & fees	2	5	6	0	7	20
Souvenirs & other expenses	7	5	11	2	4	30
Total Outside Park	**30**	**68**	**284**	**23**	**48**	**453**
Total Inside & Outside Park	**44**	**94**	**295**	**25**	**53**	**510**
Segment Percent of Total	9%	18%	58%	5%	10%	100%

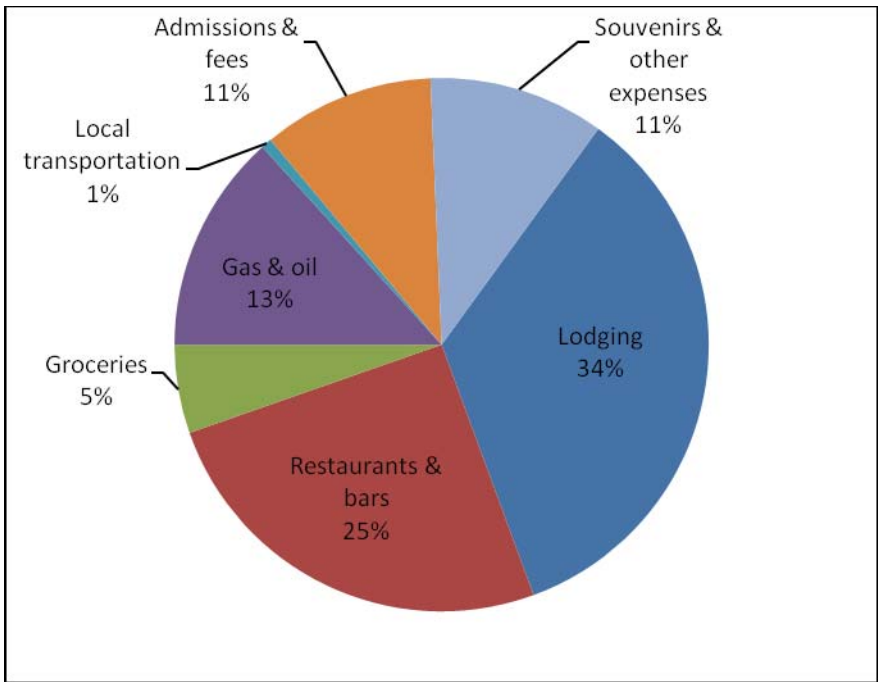

Figure 1. James A. Garfield National Historic Site visitor spending by category.

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-one percent of visitors did not make the trip primarily to visit James A. Garfield NHS. 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 $349,000 in visitor spending is attributed to the park visit (Table 7). This represents 68% of the overall visitor spending total.

Table 7. Total spending attributed to park visits, 2009 ($000's).

	Local	Day trip	Motel-out	Camp-out	Other OVN	All visitors
Motel, hotel, cabin or B&B	0	0	115	0	0	115
Camping fees	0	0	0	5	0	5
Restaurants & bars	0	28	39	2	12	81
Groceries & takeout food	0	3	7	2	4	16
Gas & oil	0	16	20	4	6	46
Local transportation	0	0	2	0	0	2
Admission & fees	9	20	10	2	5	45
Souvenirs & other expenses	6	14	12	2	6	39
Total Attributed to Park	**15**	**80**	**205**	**17**	**33**	**349**
Percent of Spending Attributed to the Park	33%	85%	69%	69%	62%	68%
Percent of Attributed Spending	4%	23%	59%	5%	9%	100%

Economic Impacts of Visitor Spending

The economic impacts of James A. Garfield National Historic Site 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 2009 (see Study Limitations and Error section below). For the retail outlet sectors of grocery stores, gas stations, and other retail, retail margins of 25.3%, 22.3%, and 50.0%, respectively, were applied to visitor spending in MGM2 to account for leakages from the local economy.

The tourism output sales multiplier for the region is 1.78. Every dollar of direct sales to visitors generates another $0.78 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 $510,000 spent by park visitors supports 9 jobs in the local region and generates $767,000 in sales, $249,000 in labor income and $425,000 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.

Using only visitor spending attributable to the park by including only some spending on trips where the primary trip purpose was not to visit James A. Garfield NHS reduces the overall impacts by about 31% (Table 9; see spending inclusion assumptions in previous section). Including direct and secondary effects, the $349,000 spent by park visitors and attributable to the park supports 6 jobs in the local region and generates $529,000 in sales, $171,000 in labor income and $292,000 in value added.

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[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.

Table 8. Impacts of all visitor spending on the local economy, 2009.

Sector/Spending category	Sales ($000's)	Jobs	Labor Income ($000's)	Value Added ($000's)
Direct Effects				
Motel, hotel, cabin or B&B	167	2.0	56	102
Camping fees	8	0.1	3	4
Restaurants & bars	129	2.5	41	61
Groceries & takeout food	7	0.1	3	4
Gas & oil	15	0.2	5	10
Local transportation	3	0.1	1	2
Admission & fees	53	0.5	10	17
Souvenirs & other expenses	27	0.5	12	17
Wholesale trade	15	0.2	4	10
Local production of goods	7	0.0	2	3
Total Direct Effects	**431**	**6.2**	**136**	**232**
Secondary Effects	335	2.6	113	193
Total Effects	**767**	**8.8**	**249**	**425**

Note: Impacts of $510,000 in visitor spending reported in Table 6.

Table 9. Economic impacts of visitor spending attributed to the park, 2009.

Sector/Spending category	Sales ($000's)	Jobs	Labor Income ($000's)	Value Added ($000's)
Direct Effects				
Motel, hotel, cabin or B&B	115	1.4	39	71
Camping fees	5	0.1	2	3
Restaurants & bars	81	1.6	26	39
Groceries & takeout food	4	0.1	2	3
Gas & oil	10	0.1	3	7
Local transportation	2	0.1	1	1
Admission & fees	45	0.4	8	14
Souvenirs & other expenses	20	0.4	8	13
Wholesale trade	10	0.1	3	7
Local production of goods	5	0.0	1	2
Total Direct Effects	**297**	**4.2**	**93**	**158**
Secondary Effects	232	1.8	78	134
Total Effects	**529**	**6.0**	**171**	**292**

Note: Impacts of $349,000 in visitor spending attributed to park reported in Table 7.

Study Limitations and Error

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 (2009). 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 2009 James A. Garfield NHS VSP visitor survey (Cook 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 17%.

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 (3 cases), visiting the local region for more than 7 nights (3 cases), or spending greater than $600 (the mean plus two times the standard deviation of the mean for spending, 15 cases) were omitted from the analysis. These are conservative assumptions about outliers and likely results in conservative estimates of economic impacts.

The sample only covers visitors during July and August. 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 2009. Employment multipliers were adjusted to take into account price changes. Local job to sales ratios were adjusted from 2008 to 2009 based on the percentage changes in national job to sales ratios between 2008 and 2009 and then adjusted to 2009 based on consumer price indices.

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 half of visitors to James A. Garfield NHS 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 the 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 the 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.
Sales	Direct sales (retail goods and services) by firms within the region to park visitors.
Secondary effects	Changes in the economic activity in the region that result from the re-circulation of the money spent by visitors. Secondary effects include indirect and induced effects.

Term	Definition
Total effects	Sum of direct, indirect and induced effects. • 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.

Appendix B: Economic Multipliers and IMPLAN Sectors

Table B1. Economic ratios and multipliers for selected tourism-related sectors, James A. Garfield NHS region, 2009.

	Direct effects			Total effects multipliers				
Sector	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	12.05	0.34	0.61	1.36	1.76	18.28	0.59	1.04
Camping fees	10.75	0.33	0.53	1.43	1.83	17.90	0.62	1.02
Restaurants & bars	19.57	0.32	0.48	1.39	1.76	25.42	0.56	0.91
Groceries & takeout food	17.22	0.42	0.64	1.35	1.79	23.73	0.68	1.11
Gas & oil	10.62	0.30	0.69	1.30	1.63	15.79	0.51	1.07
Local transportation	25.56	0.40	0.57	1.25	1.67	31.12	0.63	0.96
Admission & fees	9.18	0.18	0.32	1.61	1.94	16.78	0.49	0.87
Souvenirs & other expenses	19.65	0.43	0.64	1.35	1.80	26.24	0.69	1.11
Local production of goods	4.54	0.36	0.47	1.31	1.70	9.62	0.58	0.85
Wholesale trade	5.30	0.38	0.65	1.33	1.76	11.54	0.65	1.10

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 12.0 jobs in hotels. Thirty-four percent of hotel sales goes to wages and salaries of hotel employees and 61% of hotel sales is value added. That means 39% of hotel sales goes to purchase inputs by hotels. The wage and salary income creates the induced effects and the 39% spent on purchases by the hotel starts the rounds of indirect effects.

Multiplier effects: There is an additional 36 cents of indirect sales in the region for every dollar of direct hotel sales (type I sales multiplier = 1.36). Total secondary sales is 76 cents per dollar of direct sales, which means 36 cents in indirect effects and 40 cents in induced effects. An additional 6.3 jobs are created from secondary effects of each million dollars in hotel sales (18.3

total jobs – 12.0 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 is 25% (59%-34%), and the secondary effects on value added for each dollar of hotel sales is 43% (104%-61%). Including secondary effects, every million dollar of hotel sales in the region yields $1.76 million in sales, $590,000 in income, and $1.04 million in value added.

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

	IMPLAN		
MGM sector	**No.**	**Name**	**2007 NAICS**
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).

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

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National Park Service
U.S. Department of the Interior

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

www.nature.nps.gov