

Impacts of Visitor Spending on the Local Economy: Fort Stanwix National Monument, 2003



Daniel J. Stynes and Ya-Yen Sun
Department of Community, Agriculture, Recreation and Resource Studies
Michigan State University
East Lansing, Michigan 48824-1222

January 2005



National Park Service
Social Science Program

Department of Community, Agriculture,
Recreation and Resource Studies
Michigan State University

**MICHIGAN STATE
UNIVERSITY**

Executive Summary

Fort Stanwix National Monument hosted 56,646 recreation visits in 2003. These visits represent 17,200 party trips or 26,700 party days in the local area, defined as a half-hour driving distance to the park (Table E1). The two largest segments in terms of days spent in the region are overnight visitors staying with friends and relatives or campgrounds in the area (38%) and day visitors coming from outside the region (30%). Park visitors accounted for 5,100 room nights in area motels in 2003.

On average, park visitors spent \$63 per party per day in the local area. Spending varies considerably across four visitor segments — from \$181 per night for visitors staying in area motels to \$20 per party for local day visitors. Visitors staying in motels account for 55% of the total park visitor spending, followed by other overnight visitors (24%). The majority of the visitor spending is for lodging (\$595,000), followed by restaurants (\$420,000) and gas/oil (\$195,000).

Table E1. Fort Stanwix National Monument visits and spending by segment, 2003

Segment	Recreation visits (000's)	Party Trips (000's)	Party days/nights (000's)	Average spending (per party night)	Total spending (000's)	Pct of spending
Local day trip	11.5	3.5	3.5	\$20.4	\$72	4%
Non-local day trip	26.4	8.0	8.0	\$35.5	\$285	17%
Motel visitor	8.1	2.7	5.1	\$180.8	\$917	55%
<u>Other overnight visitor</u>	<u>10.6</u>	<u>2.9</u>	<u>10.1</u>	<u>\$39.9</u>	<u>\$403</u>	<u>24%</u>
Total	56.6	17.2	26.7	\$62.7	\$1,677	100%

The economic impacts of this spending were estimated with the National Park Service's Money Generation Model version 2 (MGM2). The MGM2 model uses park visitation data, spending averages from the 2003 Fort Stanwix National Monument Visitor Survey and multipliers for Oneida county to estimate spending, income and jobs attributable to the park. The \$1.7 million spent by park visitors generated \$491,000 in direct personal income (wages and salaries) for local residents and supported 33 jobs in tourism-related businesses. Including secondary effects, the total impact of park visitor spending on the local economy was \$725,000 in personal income and 42 jobs. These figures do not include the impacts of park employees, park operations or construction activity.

Table E2. Economic impacts of Fort Stanwix NM visitor spending, 2003

<u>Economic Sector</u>	<u>Direct Sales</u> <u>(\$000's)</u>	<u>Jobs</u>	<u>Personal</u> <u>Income</u> <u>(\$000's)</u>	<u>Value</u> <u>Added</u> <u>(\$000's)</u>
Direct Effects				
Motel, hotel cabin or B&B	497.0	10.4	162.1	246.3
Campgrounds	98.0	2.1	32.0	48.6
Restaurants & bars	420.1	11.6	143.1	199.3
Amusements	139.6	4.0	48.3	79.0
Local transportation	2.9	0.1	1.7	1.9
Retail trade	171.7	4.5	87.6	136.8
Wholesale trade	29.1	0.3	11.7	20.0
<u>Local production of goods</u>	<u>48.5</u>	<u>0.2</u>	<u>4.2</u>	<u>8.2</u>
Total Direct Effects	1,406.7	33.1	490.6	740.2
<u>Secondary Effects</u>	<u>647.6</u>	<u>8.8</u>	<u>234.7</u>	<u>406.0</u>
Total Effects	2,054.4	41.8	725.3	1,146.2
<u>Multiplier</u>	1.46	1.27	1.48	1.55

TABLE OF CONTENTS

EXECUTIVE SUMMARY	2
INTRODUCTION.....	5
FORT STANWIX NATIONAL MONUMENT	5
THE REGION.....	6
METHODS	7
FORT STANWIX NATIONAL MONUMENT VISITOR SURVEY, 2003.....	7
MGM2 VISITOR SEGMENTS.....	7
CONVERTING RECREATION VISITS TO TRIPS AND DAYS IN THE REGION.....	8
RESULTS	8
MEASURES OF VISITATION.....	9
VISITOR SPENDING.....	9
ECONOMIC IMPACTS OF VISITOR SPENDING.....	12
STUDY LIMITATIONS AND ERRORS	13
SUMMARY AND DISCUSSION	14
REFERENCES.....	15

Impacts of Visitor Spending on the Local Economy: Fort Stanwix National Monument, 2003

Introduction

The purpose of this study is to document the local economic impacts of visitors to Fort Stanwix National Monument (FOST) in 2003. Fort Stanwix is located in central New York State in the city of Rome. Economic impacts are measured as the direct and secondary sales, income, jobs and value added in the local region resulting from spending by park visitors. Economic impact estimates are produced using the Money Generation Model version 2 (MGM2) (Stynes and Propst, 2000).

Fort Stanwix National Monument

Fort Stanwix National Monument was established in 1935. Centered around a reconstructed revolutionary war fort, the monument interprets historical events and artifacts at the fort as well as the history and culture of the area. There are no overnight facilities inside the park. Admission to the park is free. Total recreation visits to Fort Stanwix National Monument was 56,646 in 2003. Visitors are estimated based on the number of visitors entering Fort Stanwix (Table 1). The peak travel season for Fort Stanwix is July and August, which in total accounted for 78% of the visits in 2003. Visitors to special events held on the park grounds, local school groups, and tourists are three important visitor subgroups (NPS, 2002).

Table 1. NPS Public Use Statistics for Fort Stanwix NM, 2003

Month	Recreation visits	Percent
January	0	0%
February	287	1%
March	105	0%
April	1,203	2%
May	2,435	4%
June	3,326	6%
July	35,348	62%
August	9,131	16%
September	2,470	4%
October	220	0%
November	1,242	2%
<u>December</u>	<u>879</u>	<u>2%</u>
Totals	56,646	100%

Source: NPS Public Use Statistics (2004)

The Region

Fort Stanwix NM is located in the center of the city of Rome in Oneida County, New York. For the purposes of the economic analysis, the local region is defined as a half-hour driving distance to the park, which approximately corresponds to the county boundary. Impacts represent the changes in sales, jobs and income within Oneida county that are associated with park visitor spending. Spending by visitors outside this region is not included in the local impact estimates.

The population of Oneida County in 2002 was 234,180. The average per capita income was \$25,174. Total personal income was \$5,895 million, and there were a total of 132,504 jobs in 2002 (Bureau of Economic Analysis, 2004). Government, health care, and retail trade are the primary employers in this region (Table 2). The accommodation sector reported \$114 million in earnings in 2002 while food services (restaurants) reported \$80 million.

Table 2. Economic activity by NAICS industry in Oneida County, New York, 2002

Sectors	Earnings by place of work (\$ 000)	Percent of earnings	Jobs	Percent of jobs
Farm	20,122	0%	1,759	1%
Forestry, fishing, related activities	7,180	0%	279	0%
Mining	4,111	0%	82	0%
Utilities	D		(D)	
Construction	159,111	4%	4,695	4%
Manufacturing	526,575	12%	12,117	9%
Wholesale trade	(D)		(D)	
Retail trade	332,371	8%	15,484	12%
Transportation and warehousing	(D)		(D)	
Information	132,751	3%	3,516	3%
Finance and insurance	306,326	7%	8,053	6%
Real estate and rental and leasing	35,734	1%	2,478	2%
Professional and technical services	193,432	4%	5,307	4%
Management of companies and enterprises	42,380	1%	826	1%
Administrative and waste services	137,073	3%	6,542	5%
Educational services	67,811	2%	2,458	2%
Health care and social assistance	630,100	14%	19,349	15%
Arts, entertainment, and recreation	16,404	0%	1,643	1%
Accommodation and food services	193,360	4%	10,571	8%
Accommodation	113,707	3%		
Food services	79,653	2%		
Other services, except public administration	128,596	3%	6,464	5%
<u>Government and government enterprises</u>	<u>1,109,586</u>	<u>25%</u>	<u>22,790</u>	<u>17%</u>
Total	4,359,384	100%	132,504	100%

Source: Bureau of Economic Analysis, 2004; D indicates not shown to avoid disclosure of confidential information

Methods

The economic analysis of visitor spending is computed in three steps. First, the visitor survey data were used to develop spending profiles and trip characteristics for distinct subgroups of visitors. Spending estimates were then expanded to all visitor spending in 2003 using the Public Use data. In the third step, total spending is applied to a local economic model to estimate the associated jobs and income to the region. Visitor spending and economic impacts are estimated with the Money Generation Model, version 2 (MGM2). Three major inputs to the model are:

- 1) number of visits to the park, broken down into distinct visitor segments,
- 2) spending averages for each segment, and
- 3) economic ratios and multipliers for the local region

The MGM2 model provides a spreadsheet template for combining park use, spending and regional multipliers to compute changes in sales, personal income, jobs and value added in the region. Visitor characteristics and spending are estimated from the 2003 Fort Stanwix National Monument Visitor Survey (Shields, Le, Littlejohn and Hollenhorst, 2004). Recreation visits are taken from the NPS Public Use Statistics for 2003. Multipliers are from an input-output model of the Oneida county economy estimated with the IMPLAN system and 2001 economic data for the county.

Fort Stanwix National Monument Visitor Survey, 2003

A park visitor survey was conducted at Fort Stanwix NM from July 24th to 30th, 2003. The survey took place during a major event (“Honor America Days”) and therefore may not completely represent visitors during other times. The Visitor Survey Project (VSP) study measured visitor demographics, trip characteristics, travel expenditures, and visitor ratings of facility importance and quality. Questionnaires were distributed to a sample of 317 visitors. A total of 216 questionnaires were returned for a 68% response rate. Data generated from the visitor survey were used to develop spending profiles, segment shares and trip characteristics for Fort Stanwix visitors. Some results reported here differ slightly from the VSP report due to handling of outliers and missing values, and some adjustments to represent visitors year-round.

Based on the visitor survey, the majority of visitors to Fort Stanwix came from the state of New York (61%), followed by Pennsylvania (5%). Fifty-five percent of respondents said visiting Fort Stanwix NM was their main reason for visiting the Rome, New York area, while 29% came to learn about revolutionary war history, and 23% came to visit family or friends. See Shields, Le, Littlejohn and Hollenhorst (2004) for a more detailed description of survey methods and descriptive results.

MGM2 Visitor Segments

Visitors are divided into distinct segments to help explain differences in spending across user groups. Overnight visitors are distinguished from day visitors based on lodging types reported in the Fort Stanwix NM Visitor Survey questionnaire. Day visitors were divided

between local and non-local visitors based on ZIP codes. Visitors living in the 134 three digit ZIP code area are considered local visitors. Two overnight trip segments were established for Fort Stanwix NM.

Local day trips: Day visitors who reside within the local region,

Non-local day trips: Visitors from outside the region, not staying overnight in the area.

This segment includes day trips to the area and pass-through travelers staying overnight outside Oneida County.

Motel: Visitors staying in hotels, motels, cabins, or B&B's within the region

Other Overnight: Visitors staying with friends or relatives or other types of lodging (such as camping) within the region.

Converting Recreation Visits to Trips and Days in the Region

The NPS Public Use Statistics provide estimates of the total number of recreation visits to the park in 2003. Recreation visits are based on counts of visitors entering Fort Stanwix. To estimate spending, recreation visits are converted into the number of distinct trips or days in the region and then distributed to the four visitor segments. This avoids double counting spending of visitors who may enter the park multiple times on the same trip and also takes into account additional days a visitor may spend in the area outside the park.

Recreation visits are converted to party nights¹ as follows:

Vehicle entries to the park = recreation visits / party size

Party trips = vehicle entries / number of park entries per trip

Party nights in the area = party trips * length of stay in the area

Total party nights and spending are sensitive to length of stay and re-entry factors. Lengths of stay indicate how many nights of spending will be counted for each visitor. Re-entry factors correct for multiple counting of visitors who may enter the park more than once on the same-trip.

Results

The analysis of travel expenses and trip characteristics is based on 167 respondents². The majority of park visitors fall into the non-local day trip segment. Overnight visitors spent an average of 2.6 nights in the local region (Table 3). The average visitor party size was 3.0. Very few visitors made multiple entries to the park on their trip.

¹ A party night is a travel group staying one night in the area. For day trips, estimates are in party days. The travel group is defined to include all individuals in the same vehicle or staying in the same room or campsite.

² A total of 48 of the 215 respondents to the survey were omitted from the economic analysis due to missing data, inconsistent responses or other reasons. Omitted cases included 23 respondents who did not report spending, 4 cases involving large parties (more than 8 people), 6 cases staying more than 7 days, 1 case reporting more than \$1,000 per party per day in spending, 6 cases with inconsistent answers, and 8 cases with unknown lodging types.

Table 3. Fort Stanwix NM visit conversion parameters by lodging segments

	Local day trip	Non-local day trip	Motel	Other Overnight	All Visitors
Length of stay	1.00	1.00	1.87	3.45	1.53
Party size ^a	2.88	3.03	2.79	3.35	3.00
Entry rate	1.13	1.08	1.07	1.09	1.09
Number of cases	35	77	31	24	167

Note. Cases with party sizes larger than 8 persons, lengths of stay longer than 7 nights, missing values across all spending categories, and spending higher than \$1,000 are excluded.

^a Party sizes estimated in the survey were reduced by 10% across all segments to account for smaller party sizes during the off-season.

Measures of Visitation

Segment shares were estimated based on 207 VSP survey respondents. Using the conversion parameters in Table 3, 56,646 recreation visits in 2003 represent 18,797 vehicle entries or 17,206 party-trips to the park (Table 4). Visitors to Fort Stanwix in 2003 generated 26,726 party days in the region. Other overnight visitors (mainly visiting friends and relatives) contributed 38% of the total party nights, followed by non-local day visitors (30%), and hotel users (19%). In 2003, visitors to Fort Stanwix spent 5,074 room nights in area hotels, motels and B&B's.

Table 4. Visit measures for Fort Stanwix NM by segment, 2003 (000's)

Measure	Local day trip	Non-local day trip	Motel	Other Overnight	Total
Recreation visits	11,507	26,391	8,107	10,641	56,646
Vehicle entries	3,996	8,718	2,906	3,178	18,797
Party trips	3,525	8,038	2,718	2,924	17,206
Party days/nights	3,525	8,038	5,074	10,088	26,726
Pct of rec. visits	20%	47%	14%	19%	100%
Pct of vehicle entries	21%	46%	15%	17%	100%
Pct of party trips	20%	47%	16%	17%	100%
Pct of party nights	13%	30%	19%	38%	100%

Note. Overnight visitor segment shares from the VSP survey were decreased by 10% to reflect fewer overnight visitors during the off-season.

Visitor spending

Spending averages were estimated from the Fort Stanwix Visitor Survey. Spending averages were computed on a party trip basis for each segment and then converted to a party night basis for overnight visitors by dividing by the average length of stay. The survey covered expenditures that occur within a half hour's driving distance or about a 30-mile radius of the park.

Local visitors on day trips spent \$20 per party in the local region, while non-local day visitors spent \$35 per party, incurring more expenses on restaurants and gas/oil (Table 5). Visitors staying in hotels, cabins or B&B's spent approximately \$356 per trip or \$181 per night with an average room rate of \$98 per night (Table 6). Other overnight visitors spent \$134 per party per trip in the region, or \$40 per party per day.

Table 5. Fort Stanwix NM Visitor spending by trip segment, 2003 (\$ per party trip)

Party trip spending	Local day visitor	Day visitor	Hotel visitor	Other overnight user
Inside the park				
Admissions, recreation	0.29	0.00	1.61	0.17
<u>All other purchases</u>	<u>0.46</u>	<u>4.30</u>	<u>8.65</u>	<u>7.42</u>
Sub total	0.74	4.30	10.26	7.58
Outside the park				
Hotels/motel	0.00	0.00	192.71	0.00
Camping fees	0.00	0.00	0.00	32.71
Restaurants/bars	8.03	12.91	83.39	24.38
Groceries/take out	2.26	4.90	11.77	20.50
Gas and oil	1.31	7.18	26.19	21.25
Other transportation	0.00	0.29	0.00	0.21
Admissions/recreation	1.57	3.77	23.19	12.79
<u>All other purchases</u>	<u>6.49</u>	<u>2.13</u>	<u>8.16</u>	<u>15.00</u>
Sub total	19.66	31.17	345.42	126.83
Grand total	20.40	35.47	355.68	134.42
Pct of in-park spending	4%	12%	3%	6%
Number of cases	35	77	31	24

Table 6. Fort Stanwix NM Visitor spending by trip segment, 2003 (\$ per party day)

Spending Category	Local day visitor	Non-local day visitor	Hotel visitors	Other overnight users
Motel, hotel cabin or B&B	0.00	0.00	97.93	0.00
Camping fees	0.00	0.00	0.00	9.71
Restaurants & bars	8.03	12.91	42.38	7.24
Groceries, take-out food/drinks	2.26	4.90	5.98	6.09
Gas & oil	1.31	7.18	13.31	6.31
Local transportation	0.00	0.29	0.00	0.06
Admissions & fees	1.86	3.77	12.61	3.85
<u>Souvenirs and other expenses</u>	<u>6.94</u>	<u>6.43</u>	<u>8.54</u>	<u>6.65</u>
Total	20.40	35.47	180.75	39.90
Standard error of mean	6.50	6.08	16.79	10.81
95% Confidence Intervals for per party day spending				
Lower bound	7.67	23.55	147.85	18.71
Upper bound	33.13	47.39	213.66	61.10

^a 95% Confidence Interval = mean \pm 1.96* standard error of mean

Total visitor spending is calculated by multiplying the number of party-nights in the area (Table 4) by the spending averages for each segment (Table 6). The calculations are carried out segment by segment, summing across the four segments to obtain the total. Visitors to Fort Stanwix in 2003 spent \$1.68 million in the local area (Table 7). Visitors spent \$497,000 in motels, \$420,000 in restaurants, and \$194,000 for gas/oil. Groups staying in area motels contributed about 55 percent of the total spending followed by other overnight visitors (24%).

Table 7. Total spending of Fort Stanwix NM visitors in 2003 (\$000's)

Spending category	Local day visitor	Non-local day visitor	Hotel visitors	Other overnight users	Total	Pct by category
Motel, hotel cabin or B&B	0.0	0.0	497.0	0.0	497.0	30%
Camping fees	0.0	0.0	0.0	98.0	98.0	6%
Restaurants & bars	28.3	103.8	215.0	73.0	420.1	25%
Groceries, take-out food/drinks	8.0	39.4	30.4	61.4	139.1	8%
Gas & oil	4.6	57.7	67.5	63.6	193.6	12%
Local transportation	0.0	2.3	0.0	0.6	2.9	0%
Admissions & fees	6.5	30.3	64.0	38.8	139.6	8%
<u>Souvenirs and other expenses</u>	<u>24.5</u>	<u>51.7</u>	<u>43.3</u>	<u>67.1</u>	<u>186.6</u>	<u>11%</u>
Total	71.9	285.1	917.2	402.6	1,676.8	100%
Pct by segments	4%	17%	55%	24%	100%	

Economic Impacts of Visitor Spending

The \$1.68 million spent by Fort Stanwix NM visitors had a direct economic impact on the region of \$1.4 million in direct sales, \$490,000 in personal income (wages and salaries), \$740,000 in value added, and supported 33 jobs in the region³ (Table 8). Direct effects occur in businesses selling goods and services directly to park visitors. The lodging sector received the largest amount of direct sales (\$497,000), followed by restaurants (\$420,000) and retail trade (\$172,000).

Direct effects are less than total spending, as only the retail and wholesale margins on visitor purchases of goods accrue to the local economy. The local region surrounding Fort Stanwix captures 84% of visitor spending. Sixteen percent of visitor spending leaks out of the local economy to cover the costs of imported goods bought by visitors⁴.

The sales multiplier for the region is 1.46, meaning that an additional \$0.46 in sales is generated through secondary effects for every dollar of direct sales. Secondary effects generate an additional 9 jobs, about \$235,000 in personal income and \$406,000 in value added. Including direct and secondary effects, the total impacts of Fort Stanwix visitor spending in 2003 on the local economy is \$2.1 million in sales, \$725,000 in personal income, \$1.1 million in value added, and 42 jobs.

Table 8. Economic impacts of Fort Stanwix NM visitor spending, 2003

Economic Sector	Direct Sales (\$000's)	Jobs	Personal Income (\$000's)	Value Added (\$000's)
Direct Effects				
Motel, hotel cabin or B&B	497.0	10.4	162.1	246.3
Campgrounds	98.0	2.1	32.0	48.6
Restaurants & bars	420.1	11.6	143.1	199.3
Amusements	139.6	4.0	48.3	79.0
Local transportation	2.9	0.1	1.7	1.9
Retail trade	171.7	4.5	87.6	136.8
Wholesale trade	29.1	0.3	11.7	20.0
<u>Local production of goods</u>	<u>48.5</u>	<u>0.2</u>	<u>4.2</u>	<u>8.2</u>
Total Direct Effects	1,406.7	33.1	490.6	740.2
<u>Secondary Effects</u>	<u>647.6</u>	<u>8.8</u>	<u>234.7</u>	<u>406.0</u>
Total Effects	2,054.4	41.8	725.3	1,146.2
Multiplier	1.46	1.27	1.48	1.55

³ Personal income covers wages and salaries, including payroll benefits. Value added is the sum of personal income accruing to area households, profits and rents of area businesses, and indirect business taxes. Jobs include full and part time jobs (See Appendix A for details).

⁴ For example, if a visitor buys \$50 dollars worth of clothing at a local store, the store receives the retail margin (assume \$20 dollars), the wholesaler or shipper (if local) may receive \$5 dollars, and the remaining producer price of the clothing (\$25 dollars) leaks immediately outside the local economy, unless the clothing is manufactured in the local region.

Some visitors to Fort Stanwix did not make their trip primarily to visit the national monument. Fifty-seven percent of the visitors in the VSP sample indicated that visiting the monument, learning about revolutionary war history, or learning about history was the primary reason for their trip. Other reasons for visiting Rome included visiting friends and relatives (23%) and traveling through to other destinations (18%). Half of overnight visitors made the trip primarily to visit the fort, compared to 80% for non-local day trips and 40% for local visitors.

Total spending for visitors reporting that Fort Stanwix was their primary destination⁵ is \$931,000, or 56% of all visitor spending. For visitors whose primary purpose was not to visit the fort, we assume the visit to the fort extended their stay and count the equivalent of a local day trip spending (\$20.40 per travel party) as attributable to the visit to Fort Stanwix. Including this spending yields a conservative total spending impact of \$1.14 million or 68% of all visitor spending. Since the impact model is essentially linear, the impacts of \$1.14 million in spending directly attributable to Fort Stanwix are roughly 68% of those reported in Table 8. The majority of the reported spending and impacts can therefore be attributed to the park.

Local visitors are often excluded in estimating economic impacts. However, local trips account for only 4% of overall visitor spending at Fort Stanwix, so excluding these visitors does not significantly change the results.

Study Limitations and Errors

The impacts and spending reported here only cover visitor spending. They do not include NPS jobs or payroll or the impacts of park operational or construction expenditures in the area⁶. The accuracy of the MGM2 visitor spending impact estimates rest on the three primary inputs: visits, spending averages, and multipliers.

Economic ratios and multipliers are from an input-output model for Oneida county estimated with the IMPLAN system and 2001 economic data. The Oneida county multipliers roughly correspond to the MGM2 small metro region multipliers. Spending averages from the 2003 Fort Stanwix Visitor Survey are subject to sampling errors, measurement errors and potential seasonal bias. The sampling error for the overall spending average is 9% and ranges from 9 to 32% for individual segments⁷. Using a 95% confidence interval around the spending average, total visitor spending in 2003 is estimated at between \$1.5 and \$1.8 million.

The visitor survey was conducted during a single 7-day period in July, 2003. Survey results may be assumed to represent summer season visitors (June to August), which account for 84% of annual visits. Off-season visitors tend to have smaller party sizes and may spend less on accommodations due to lower off-season rates. Minor adjustments were made to some parameter estimates from the VSP survey to reduce the potential seasonal bias.

⁵ Includes visitors citing visiting the fort, learning about revolutionary war history or learning about history as their primary trip purpose.

⁶ Based on budget data in the 2002 Business Plan, approximately 24 jobs are supported by the park payroll and the indirect and induced effects of NPS spending in the area.

⁷ Sampling errors for the spending averages depend on the number of cases sampled and the variation in the sample.

Summary and Discussion

Visitors to Fort Stanwix National Monument spent \$1.7 million within a 30-mile radius of the park in 2003. The direct local economic impact of visitor spending was \$1.4 million in sales, \$490,000 in personal income (wages and salaries), \$740,000 in value added, and 33 jobs. With multiplier effects, visitor spending generated a total of \$2.1 million in direct sales, \$725,000 in personal income, \$1.15 million in value added, and 42 jobs. Sectors receiving the greatest direct benefit from park visitors were hotels (\$497,000 in direct sales), restaurants (\$420,000), and retail trade (\$172,000).

The MGM2 model results can be used to evaluate alternative management, development and marketing decisions. The marginal economic impacts of individual visitor segments are useful for evaluating particular actions. Table 9 shows the changes in sales, jobs, income and valued added associated with an increase or decrease of one thousand additional party-nights by each segment.

Use of the marginal impact estimates can be illustrated with an example. To evaluate the regional economic impacts of filling an additional 10 rooms in area motels, first compute the change in party nights – 10 rooms occupied 100 nights yearly yields 1,000 extra party nights. Applying the marginal impacts for the “motel visitor” segment in Table 9 generates an additional \$165,500 dollars in direct sales in the region, \$56,000 in personal income, \$84,100 in value added and 3.8 jobs in direct effects. The impact of this scenario can be compared to others such as a marketing campaign to increase day trips.

Table 9. Direct impacts of an additional 1,000 party day/nights by segment, Fort Stanwix NM, 2003

Segment	Direct Sales (\$000's)	Jobs	Personal	
			Income (\$000's)	Value Added (\$000's)
(Marginal Impacts per 1,000 party-day/nights)				
Local day visitor	15.6	0.4	5.9	8.9
Non-local day visitor	25.8	0.6	9.5	14.3
Hotel visitors	165.5	3.8	56.0	84.1
Other overnight users	30.2	0.7	10.8	16.6

The economic impacts presented in this report document the economic significance of 56,646 recreation visits to Fort Stanwix NM in 2003. Impacts will vary from year to year with changes in prices, visitor volumes, the mix of visitors attracted, and other changes in the park and surrounding communities. The MGM2 model has built-in procedures to price adjust spending averages over time, so that updated spending and impact figures may be obtained fairly easily. In the absence of significant structural changes in the local economy, multipliers will be quite stable over time. Changes in the number and kinds of visitors can be entered into the model to update impact estimates over time.

References

Bureau of Economic Analysis. (2004). REIS, 2002. <http://www.bea.gov/beat/regional/reis/>.
Data retrieved on October 19, 2004.

National Park Service.(2002). Fort Stanwix National Monument Business Plan.
<http://www.npbpi.org/docs/bizplans/FOST02busplan.pdf>.

National Park Service. (2004). Fort Stanwix National Monument <http://www.nps.gov/fost/>.
Data retrieved on October 19, 2004.

National Park Service Public Use Statistic Office. (2004). 1979-2002 Visitation DataBase.
<http://www2.nature.nps.gov/stats/>. Data retrieved on October 19, 2004.

Shields, W.L., Le, Y., Littlejohn, M. A., and Hollenhorst, S.J. (2004). Fort Stanwix National Monument Visitor Study. Summer, 2003. Visitor Services Project Report #149.
Moscow, ID: National Park Service and University of Idaho, Cooperative Park Studies Unit.

Stynes, D. J., Propst, D.B., Chang, W. and Sun, Y. (2000). Estimating national park visitor spending and economic impacts: The MGM2 model. May, 2000. Final report to National Park Service. East Lansing, Michigan: Department of Park, Recreation and Tourism Resources, Michigan State University.

Appendix A: Definitions of Economic Terms

Term	Definition
Sales	Sales of firms within the region to park visitors.
Jobs	The number of jobs in the region supported by the visitor spending. Job estimates are not full time equivalents, but include part time positions.
Personal income	Wage and salary income, proprietor's income and employee payroll benefits.
Value added	Personal income plus rents and profits and indirect business taxes. As the name implies, it is the net value added by the region to the final goods and services being provided. For example, the value added by a hotel includes wages and salaries paid to employees, their payroll benefits, profits of the hotel, and sales 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.
Direct effects	Direct effects are the changes in sales, income and jobs in those business or agencies that directly receive the visitor spending.
Secondary effects	These are the 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.
Indirect effects	Changes in sales, income and jobs in industries that supply goods and services to the business that sell directly to the visitors. 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 the visitor spending. For example, motel and linen supply employees live in the region and spend the income earned on housing, groceries, education, clothing and other goods and services.
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.

Appendix B. Multipliers and Economic Ratios for Oneida County, NY, 2001.

Sector	Direct effects			Sales II	<u>Total effects multipliers</u>			
	Jobs/ Million sales	Income/ sales	Value Added /sales		Jobs II/ Million Sales	Income II/ sales	VA II/ sales	Sales I
Hotels And Lodging Places	18.18	0.44	0.71	1.47	24.61	0.61	0.97	1.17
Eating & Drinking	29.94	0.38	0.43	1.56	36.81	0.57	0.73	1.28
Amusement And Recreation	21.11	0.37	0.63	1.50	27.86	0.55	0.91	1.22
Auto repair and services	8.19	0.20	0.45	1.47	14.13	0.35	0.68	1.30
Local transportation	35.00	0.39	0.43	1.66	42.00	0.64	0.78	1.34
Sporting goods	4.68	0.34	0.45	1.49	10.72	0.52	0.74	1.24
Retail Trade	22.41	0.46	0.60	1.57	30.14	0.67	0.93	1.24
Wholesale trade	9.43	0.38	0.67	1.46	15.83	0.55	0.93	1.19

Source: IMPLAN input-output model of Oneida County, NY economy, 2000. All Type II multipliers are IMPLAN Type SAM.

Brief explanation of table:

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

Jobs/Million sales is the number of jobs per million dollars in sales in each sector.

Income/sales is the percentage of sales going to wages and salaries (includes sole proprietor's income)

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

Total effects are multipliers that capture the total effect relative to direct sales. These capture the impacts from the circulation of visitor spending within the local economy.

Sales II multiplier = (direct + indirect + induced sales)/ direct sales

Sales I captures only direct and indirect sales = (direct + indirect sales)/ direct sales.

Job II/ Million 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 Hotel sector row to illustrate:

Direct Effects: Every million dollars in hotel sales creates 18 jobs in hotels. Forty-four percent of hotel sales goes to wages and salaries of hotel employees and 71% of hotel sales is value added. That means 29% of hotel sales goes to purchase inputs by hotels. The wage and salary income creates the induced effects and the 29% spent on purchases by the hotel starts the rounds of indirect effects.

Multiplier effects: There is an additional 17 cents of indirect sales in the region for every dollar of direct hotel sales (type I sales multiplier = 1.17). The Type II sales multiplier is 1.47, which means for every dollar of direct hotel sales, there is an additional \$.47 in secondary effects, \$.17 in indirect effects and \$.30 in induced effects. An additional 6.4 jobs are created from secondary effects for each million dollars in hotel sales (24.6 total jobs – 18.2 direct jobs per million sales). These secondary jobs are scattered across other sectors of the local economy. Including secondary effects, every million dollars of hotel sales in the county yields \$1.47 million in sales, \$610,000 in income, and \$970,000 in value added.