

# Impacts of Visitor Spending on the Local Economy: Craters of the Moon National Monument and Preserve, 2004



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## **Executive Summary**

Craters of the Moon National Monument and Preserve hosted 183,111 recreation visits in 2004. Based on the 2004 visitor survey and 12,246 park overnight stays, 5% of the visitors are local residents, 52% are visitors from outside the local area not staying overnight within 50 miles of the park, and 43% are visitors staying overnight in the local area. About 10% of the overnight visitors and 4% of all visitors are camping in the park. Eighteen percent of visitors are staying overnight in area motels.

The average visitor party spent \$71 within the local region. Visitors reported expenditures of their group inside the park and within a one hour drive of the park. On a party trip basis, average spending in 2004 was \$31 for non-local day trips, \$220 for visitors in motels, \$122 for campers staying outside the park, \$64 for campers inside the park, and \$32 for other overnight visitors without lodging expenses. On a per night basis, visitors staying in motels spent \$185 in the local region compared to \$93 for campers staying outside the park and \$38 for campers staying inside the park. The average per night lodging cost was \$81 per night for motels, and \$25 for outside campgrounds and \$7.50 for campers staying inside the park.

Total visitor spending in 2004 within 50 miles of the park was \$4.8 million including \$676,000 spent inside the park. Twenty-eight percent of the total spending was for lodging, 17% restaurant meals and bar expenses, 21% gas and oil and 11% souvenirs including the park gift shop. Overnight visitors staying in motels accounted for 56% of the spending.

Not all of this spending would be lost to the region in the absence of the park. The vast majority of visitors did not come to the area primarily to visit Craters of the Moon NM and Preserve, so only a portion of their expenses can be attributed to the park visit. About a quarter of park visitors came to the area primary to visit CRMO. Forty percent came to visit other attractions in the area and 21% were passing thru the area.

Spending directly attributed to the park was estimated by counting all spending for visitors whose primary reason for coming to the area was to visit the park. The equivalent of one night of spending was counted for non-primary purpose visitors staying overnight in the area. The local visitor spending profile was used for non-primary purpose visitors on day trips. All spending inside the park was attributed to the park, while all spending by local residents outside the park was excluded. These procedures yield a total of \$4.2 million in spending attributed to the park. This represents 89% of the \$4.8 million spent by park visitors in the area.

The economic impact of park visitor spending is estimated by applying this spending to a model of the local economy. The local region was defined as a four county region around the park.

Including direct and secondary effects, the \$4.1 million spent by park visitors supports 66 jobs in the area and generates about \$3.7 million in sales, \$1.5 million in personal income and \$2.2 million in value added. Value added includes wages and salaries as well as profits and rents to area businesses and sales taxes.

Recreation visits increased by 11% in 2005 to 203,332 visitors. Combined with a 5% increase in per visitor spending, total visitor spending increased to \$5.1 million in 2005. The park itself employed 14 people in FY 2005 with a total payroll of \$988,000, including payroll benefits. Including secondary effects, the local impact of park operations in 2005 was 20 jobs, \$1.1 million in personal income and \$1.2 million total value added. Including both visitor spending and park operations, the total impact of the park on the local economy in 2005 was 89 jobs and \$3.5 million value added. Park operations account for 23% of the employment effects and 32% of value added.

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## **Introduction**

The purpose of this study is to document the local economic impacts of visitors to Craters of the Moon National Monument and Preserve (CRMO) in 2004. Economic impacts are measured as the direct and secondary sales, income and jobs in the local area resulting from spending by park visitors. The economic estimates are produced using the Money Generation Model 2 (MGM2) (Stynes and Propst, 2000). Three major 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 Craters of the Moon Visitor Survey, National Park Service Public Use Statistics, and IMPLAN input-output modeling software. 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.

## **Craters of the Moon National Monument and Preserve.**

Craters of the Moon NM and Preserve is located in the Snake River Plain in south-central Idaho. The park preserves over 750,000 acres of a unique volcanic landscape including major lava flows and cinder cones. Aside from a 51 site campground and visitor center, facilities in the park are limited. Arco and Carey, the two nearest towns are twenty miles away. Larger cities of Twin Falls and Idaho Falls are about 90 miles away. The park is a side trip for many travelers visiting western parks.

The park hosted 183,111 recreation visitors in 2004 and 203,332 in 2005. About 68% of the visitation is between June and September (Table 1).

The local region was defined to include Blaine, Butte, Camas and Custer counties. The four county region had a population of 29,000 in 2005.

**Table 1. Recreation Visits to Craters of the Moon NM and Preserve, 2004-2005**

Month	Recreation Visits		Overnight stays	
	2004	2005	2004	2005
January	1,628	2,691	10	16
February	2,430	2,908	3	0
March	5,766	5,462	40	0
April	9,202	7,490	408	170
May	18,916	18,058	1,209	1,390
June	30,954	31,589	2,664	3,349
July	38,473	40,376	2,802	2,988
August	31,982	54,932	2,480	2,578
September	22,819	23,240	1,995	1,830
October	14,041	11,503	591	528
November	4,504	3,490	34	13
<u>December</u>	<u>2,396</u>	<u>1,593</u>	<u>10</u>	<u>6</u>
<b>Total</b>	<b>183,111</b>	<b>203,332</b>	<b>12,246</b>	<b>12,868</b>

Source: NPS Public Use Statistics

## Craters of the Moon NM and Preserve Visitor Survey, 2004

A park visitor study was conducted at Craters of the Moon National Monument and Preserve July 10-17, 2004 (Littlejohn and Hollenhorst, 2005). The study measured visitor demographics, activities, and travel expenditures. Questionnaires were distributed to a sample of 512 visitors. Visitors returned 426 questionnaires, an 83% response rate. Data generated through the visitor survey were used as the basis to develop the spending profiles, segment shares and trip characteristics for Craters of the Moon NM and Preserve visitors.

Most visitors spent between one and two hours at the park. Only 9% of non-local visitors came to the area primarily to visit Craters of the Moon NM and Preserve. Forty-two percent of park visitors were driving through the area while 39% were in the area for recreation.

### MGM2 Visitor Segments

MGM2 divides visitors into segments to help explain differences in spending across distinct user groups. Five segments were established for CRMO visitors:

**Local day users:** Day visitors who reside within the local region, defined as a 50 mile radius of the park.

**Non-local day users:** Visitors from outside the region, not staying overnight in the area. This includes day trips as well as pass-through travelers, who may be staying overnight on their trip outside the region.

**Motel:** Visitors staying in motels, hotels, cabins, or B&B's within 50 miles of the park

**Camp out:** Visitors staying in private or other public campgrounds within 50 miles of the park

**Camp in :** Visitors camping inside the park.

**Other OVN:** Other visitors staying overnight in the area with friends or relatives or not reporting any lodging expenses

The 2004 visitor survey was used to estimate the percentage of visitors from each segment as well as spending averages, lengths of stay and party sizes for each segment. Segment shares estimated in the survey were adjusted to represent year round use and to be consistent with park overnight stay data<sup>1</sup>.

Five percent of park visitors in 2004 were local residents, while 52% of the visitors were classified in the non-local day trip segment. Forty-three percent of visitors were staying overnight in the area (Table 2)<sup>2</sup>. The average spending party was 2.8 people.

One in four visitors indicated that visiting the park was the primary reason for the trip to the area. Forty-one percent came to the area to visit other attractions and 21% were passing thru.

**Table 2. Selected Visit/Trip Characteristics by Segment, 2004**

Characteristic	Local	Day trip	Motel	Camp out	Camp in	Other OVN	Total
Segment share <sup>a</sup>	5%	52%	18%	6%	4%	15%	100%
Average Party size	3.2	2.8	2.7	2.8	3.5	2.4	2.8
Length of stay (days/nights)	1.0	1.0	1.2	1.3	1.6	1.7	1.2
Percent primary purpose trips	100%	19%	17%	29%	56%	22%	26%

a. Segment shares estimated in the survey were adjusted to be consistent with park overnight stay data. Segment shares from the survey were 3% local, 47% day trips, 17% motel, 8% camp-out, 11% camp-in, and 14% other OVN.

Craters of the Moon NM and Preserve hosted 183,111 recreation visitors in 2004. Recreation visits were allocated to the five segments using the segment shares in Table 2. These visits are converted to 67,010 party trips by dividing by the average party size for each segment (Table 3). Total visitor spending is estimated by multiplying the number of party trips of each segment by the average spending estimated in the survey.

<sup>1</sup> Eleven percent of survey respondents were camping in the park and 8% were camping outside the park. Camping shares were adjusted to 4% inside the park and 6% outside. Shares for other segments were increased to sum to 100%.

<sup>2</sup> Survey respondents who listed motels or campgrounds as lodging types but did not report any lodging expenses were classified in the other OVN category. Some of these may have been staying outside the local region in Twin Falls or Idaho Falls, which are just beyond a one hour driving distance.

**Table 3. Recreation Visits and Party Trips by Segment, 2004**

Measure	Local	Day trip	Motel	Camp out	Camp in	Other OVN	Total
Recreation visits	9,156	95,218	32,960	10,987	7,324	27,467	183,111
Party visits/trips	2,891	34,399	12,054	3,932	2,114	11,621	67,010

## Visitor spending

Spending averages were computed on a party trip basis for each segment. The survey covered expenditures of the travel party within a one hour drive of the park.

The average visitor group in 2004 spent \$71 on the trip<sup>3</sup>. On a party trip basis, average spending was \$31 for non-local day trips, \$220 for visitors in motels, \$122 for campers staying outside the park and \$64 for travel parties camping in the park (Table 4). On a per night basis, visitors in motels spent \$185 in the local region compared to \$93 for campers staying outside the park and \$38 for campers inside the park. The average per night lodging cost was \$81 per night for visitors in motels, and \$24 for outside campgrounds, and \$7.50 for visitors staying in the park campground.

**Table 4. Average Visitor Spending by Segment , 2004 (\$ per party per trip)**

	Local	Day trip	Motel	Camp out	Camp in	Other OVN	All Visitors
<b>In Park</b>							
Admissions	2.50	2.94	6.50	5.00	4.65	5.95	4.20
Souvenirs	4.58	4.23	5.34	5.53	8.91	7.18	5.16
Camping fees	0.00	0.00	1.09	1.24	11.86	0.00	0.75
<b>In Community</b>							
Motel, hotel cabin or B&B	0.00	0.00	93.34	0.00	0.00	0.00	16.80
Camping fees	0.00	0.00	2.63	29.56	0.00	0.00	2.25
Restaurants & bars	3.75	3.90	45.83	13.41	5.53	3.73	12.05
Groceries, take-out food/drinks	3.75	1.99	9.86	10.82	8.86	3.31	4.50
Gas & oil	8.75	10.07	26.64	42.74	19.58	9.53	15.25
Local transportation	0.00	4.85	17.92	0.00	3.26	0.64	5.97
Admissions & fees	0.33	1.50	4.19	2.35	0.81	0.91	1.86
Souvenirs and other expenses	0.00	1.06	6.94	11.24	0.93	0.80	2.63
<u>Donations</u>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Grand Total</b>	<b>23.67</b>	<b>30.54</b>	<b>220.28</b>	<b>121.88</b>	<b>64.40</b>	<b>32.04</b>	<b>71.41</b>
Total in park	7.08	7.18	12.94	11.76	25.42	13.13	10.11
Total Outside park	16.58	23.37	207.34	110.12	38.98	18.91	61.30

<sup>3</sup> The average of \$71 is lower than the \$118 spending average in the VSP report (Littlejohn, Vander Stoep and Hollenhorst 2005) due to the omission of some outliers, treatment of missing spending data, and adjustments to the segment mix to represent year-round visitors. The median spending in the VSP report was \$50.

**Table 5. Average Spending per Night, Overnight Trips (\$ per party per night)**

	Motel	Camp out	Camp in	Other OVN
Motel, hotel cabin or B&B	80.99	0.00	0.00	0.00
Camping fees	3.23	24.48	7.48	0.00
Restaurants & bars	39.76	10.66	3.49	2.21
Groceries, take-out food/drinks	8.55	8.60	5.59	1.96
Gas & oil	23.11	33.97	12.35	5.65
Local transportation	15.55	0.00	2.05	0.38
Admissions & fees	3.63	1.87	0.51	0.54
Souvenirs and other expenses	10.66	13.33	6.21	4.73
<u>Donations</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
<b>Grand Total</b>	<b>185.49</b>	<b>92.91</b>	<b>37.68</b>	<b>15.47</b>

Note: excludes park admissions

The sampling error at a 95% confidence level for the overall spending average is 14%. A 95% confidence interval for the overall spending average is (\$61, \$82). The sampling error for the motel segment is 15%. Sampling errors for other segments with smaller sample sizes are much higher (See Table B-2 in the appendix).

Craters of the Moon NM and Preserve visitors spent a total of \$4.8 million in the local area in 2004 (Table 6). Total spending was estimated by multiplying the number of party trips for each segment by the average spending per trip and summing across segments.

**Table 6. Total Visitor Spending by Segment, 2004 (\$000s)**

	Local	Day trip	Motel	Camp	Camp in	Other OVN	All Visitors
<b>In Park</b>							
Admissions	7.2	101.2	78.4	19.7	9.8	69.1	285.4
Souvenirs	13.3	145.6	64.4	21.7	18.8	83.5	347.3
Camping fees	0.0	0.0	13.2	4.9	25.1	0.0	43.1
<b>In Community</b>							
Motel, hotel cabin or B&B	0.0	0.0	1,125.2	0.0	0.0	0.0	1,125.2
Camping fees	0.0	0.0	31.6	116.2	0.0	0.0	147.9
Restaurants & bars	10.8	134.0	552.4	52.7	11.7	43.3	805.0
Groceries, take-out food/drinks	10.8	68.6	118.8	42.6	18.7	38.5	298.0
Gas & oil	25.3	346.5	321.1	168.0	41.4	110.7	1,013.0
Local transportation	0.0	166.7	216.0	0.0	6.9	7.4	397.0
Admissions & fees	1.0	51.6	50.5	9.3	1.7	10.6	124.6
Souvenirs and other expenses	0.0	36.3	83.6	44.2	2.0	9.3	175.4
<u>Donations</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
<b>Grand Total</b>	<b>68.4</b>	<b>1,050.6</b>	<b>2,655.3</b>	<b>479.2</b>	<b>136.1</b>	<b>372.3</b>	<b>4,761.9</b>
Total in park	20.5	246.8	155.9	46.3	53.7	152.5	675.8
Total outside park	47.9	803.8	2,499.3	433.0	82.4	219.7	4,086.1
Segment Percent of Total	1%	22%	56%	10%	3%	8%	100%



Overnight visitors staying in motels accounted for 56% of the total spending. Lodging accounted for 28% of the total spending, restaurants and bars 17% and gas and oil 21%.

Not all of this spending would be lost to the region in the absence of the park as most visitors did not make the trip primarily to visit the park. Spending directly attributed to the park visit was estimated by counting all spending for trips where the park was the primary reason for the trip. If the park visit was not the primary purpose of the trip, one night of spending was counted for overnight trips and the spending average for local day trips was counted for non-primary purpose day trips. All spending inside the park was attributed to the park visit, but all spending by local visitors outside the park was excluded.

These attributions yield a total of \$4.2 million in visitor spending attributed to the park visit, representing 89% of the overall visitor spending total. Overnight trips still account for the majority of spending attributed to the park. Visitors in motels account for 58%, campers 13% and day trips 20% (Table 7).

**Table 7. Total Spending Attributed to Park Visits, 2004 (\$000s)**

	Local	Day trip	Motel	Camp out	Camp in	Other OVN	All Visitors
<b>In Park</b>							
Admissions	7.2	101.2	78.4	19.7	9.8	69.1	285.4
Souvenirs	13.3	145.6	64.4	21.7	18.8	83.5	347.3
Camping fees	0.0	0.0	13.2	4.9	25.1	0.0	43.1
<b>In Community</b>							
Motel, hotel cabin or B&B		0.0	1,001.8	0.0	0.0	0.0	1,001.8
Camping fees		0.0	37.6	102.1	7.0	0.0	146.8
Restaurants & bars		130.0	491.9	45.1	9.8	29.5	706.2
Groceries, take-out food/drinks		117.5	105.8	36.4	15.7	26.2	301.6
Gas & oil		309.7	285.9	143.7	34.6	75.5	849.4
Local transportation		31.8	192.4	0.0	5.8	5.0	234.9
Admissions & fees		19.1	44.9	7.9	1.4	7.2	80.6
Souvenirs and other expenses		6.9	120.7	50.0	6.9	45.0	229.6
<u>Donations</u>		0.0	0.0	0.0	0.0	0.0	0.0
<b>Total Attributed to Park</b>	<b>20.5</b>	<b>861.8</b>	<b>2,437.1</b>	<b>431.5</b>	<b>134.9</b>	<b>341.1</b>	<b>4,226.8</b>
Percent of all spending attributed to the park	30%	82%	92%	90%	99%	92%	89%

## Economic Impacts of Visitor Spending

The economic impacts of Craters of the Moon NM and Preserve visitor spending on the local economy were estimated by applying the spending attributed to the park (Table 7) to a set of economic ratios and multipliers representing the local economy. Multipliers for the region were estimated with the IMPLAN system using 2001 data. The tourism sales multiplier for the region is 1.30. Every dollar of direct sales to visitors generates another \$ .30 in secondary sales through indirect and induced effects<sup>4</sup>.

Impacts are estimated based on the visitor spending attributed to the park in Table 7<sup>5</sup>. Including direct and secondary effects, the \$4.2 million spent by park visitors<sup>6</sup> supports 66 jobs in the area and generates \$2.85 million in sales<sup>7</sup>, \$1.54 million in personal income and \$2.22 million in value added (Table 8). Personal income covers wages and salaries, including payroll benefits. Value added is the preferred measure of the contribution 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. The largest direct effects are in lodging establishments, restaurants, and retail trade.

**Table 8. Economic Impacts of Visitor Spending Attributed to the Park, 2004.**

Sector/Spending category	Sales \$000's	Jobs	Personal Income \$000's	Value Added \$000's
<b>Direct Effects</b>				
Motel, hotel cabin or B&B	1,002	20	437	709
Camping fees	147	1	12	29
Restaurants & bars	706	15	327	370
Admissions & fees	81	1	32	51
Local transportation	235	8	118	129
Retail Trade	554	10	264	346
Wholesale Trade	82	1	31	54
<u>Local Production of goods</u>	<u>40</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Direct Effects</b>	<b>2,846</b>	<b>56</b>	<b>1,222</b>	<b>1,688</b>
<u>Secondary Effects</u>	<u>857</u>	<u>10</u>	<u>321</u>	<u>532</u>
<b>Total Effects</b>	<b>3,703</b>	<b>66</b>	<b>1,543</b>	<b>2,220</b>

<sup>4</sup> 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.

<sup>5</sup> The local economic impact of all \$4.8 million in visitor spending (Table 6) is reported in Appendix C.

<sup>6</sup> Revenues received by the park (park admissions and donations) are excluded in estimating visitor spending impacts as the impacts resulting from park revenues are covered as part of park operations.

<sup>7</sup> Direct sales are less than spending as only retail margins on purchases of groceries, gas and souvenirs are attributed to the local economy.

## 2005 Update

The spending and impact estimates may be updated to 2005 based on reported recreation visits in 2005. Recreation visits increased by 11% in 2005 to 203,332. The visitor segment mix, party sizes and lengths of stay were assumed unchanged from 2004. Spending averages measured in the 2004 visitor survey were price adjusted to 2005 using Bureau of Labor Statistics price indices for each spending category. Spending averages increased by about five percent in 2005 compared to 2004.

The increase in visits along with a five percent increase in per visitor spending, increased total visitor spending to \$5.1 million in 2005 (Table 9).

**Table 9. Update of Spending Estimates to 2005**

	Local	Day trip	Motel	Camp out	Camp in	Other OVN	Total
Average Spending							
2004	24	31	220	122	64	32	71
2005	25	32	232	130	68	34	75
Total Spending (\$000's)							
2004	68	1,051	2,655	479	136	372	4,762
2005	80	1,227	3,102	567	160	438	5,137
Spending Attributed to the Park (\$000's)							
2004	7	757	2,339	400	108	361	3,972
2005	8	796	2,461	426	114	382	4,187

The park itself employed 14 people in FY 2005 with a total payroll of \$988,000, including payroll benefits. Including secondary effects, the local impact of park operations in 2005 was 20 jobs, \$1.1 million in personal income and \$1.2 million total value added. Including both visitor spending and park operations, the total impact of the park on the local economy in 2005 was 89 jobs and \$3.5 million value added. Park operations account for 23% of the employment effects and 32% of value added.

## Study Limitations and Error

The accuracy of the MGM2 estimates rests on the accuracy of the three inputs: visits, spending averages, and multipliers. Recreation visit estimates rely on counting procedures at the park, which may miss some visitors and count others more than once during their visit.

Spending averages are derived from the 2004 Craters of the Moon NM and Preserve Visitor Survey. Estimates from the survey are subject to sampling errors, measurement errors and seasonal/sampling biases. The overall spending average is subject to sampling errors of 14%.

Spending averages can also be sensitive to decisions about outliers and treatment of missing data. To estimate spending averages incomplete spending data had to be filled and decisions had to be made about the handling of missing spending data and zero spending reports. Spending averages were estimated under conservative assumptions.

First, cases reporting some expenses but leaving other categories blank were filled with zeros. Thirty-seven respondents that did not complete the spending question were assumed to spend no money on the trip. Another twenty-eight cases reported no spending in the local area. Omitting cases with missing spending data instead of treating them as zeros would increase the spending average from \$71 to \$78. This change would increase overall spending totals and impacts by about 9% (see Appendix B, Table B1).

Outliers have a larger impact on the spending results. Five cases reporting expenses of more than \$1,000 were omitted from the spending analysis. Sixteen cases reporting party sizes of more than seven people and three cases staying more than seven nights in the area were also omitted<sup>8</sup>. Spending averages including the outliers are \$108 per party, almost 50 percent higher than the \$71 average with outliers omitted.

The sample only covers visitors during a single week. Segment shares were adjusted to an annual basis using park overnight stay data, but otherwise the survey respondents were assumed to be representative of visitors during the rest of the year in order to extrapolate to annual totals.

Multipliers are derived from an input-output model of the local economy using IMPLAN. Input-output models rest on a number of assumptions, however, errors due to the multipliers will be small compared to potential errors in visit counts and spending estimates. Visits are taken from NPS public use statistics.

As the park was not the primary motivation for the trip to the region for most visitors, some of the spending would likely not be lost in the absence of the park. Since local overnight stays were short, counting one night of spending for non-primary purpose trips doesn't significantly reduce the spending estimates. In the light of limited development in the defined local region, some of the reported overnight stays and spending may have taken place near Twin Falls or Idaho Falls.

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<sup>8</sup> Reports of spending for long stays are deemed unreliable. Spending reported for large parties may not include everyone in the party. Since spending averages are applied to all visits, omitting these cases is equivalent to substituting the average spending of visitors in the corresponding visitor segment for these outliers.

## REFERENCES

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## 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, sole 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 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 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 businesses 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 their incomes 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"> <li>▪ Direct effects accrue largely to tourism-related businesses in the area</li> <li>▪ Indirect effects accrue to a broader set of businesses that serve these tourism firms.</li> <li>▪ Induced effects are distributed widely across a variety of local businesses.</li> </ul>

## Appendix B: Handling of Missing Spending Data and Outliers

To compute spending averages and to sum spending across categories, spending categories with missing spending data had to be filled. If spending was reported in any category, the remaining categories were assumed to be zero. This yielded 361 cases with valid spending data, 28 cases reporting zero spending and 37 cases not completing the spending question. Cases with missing or no spending reported were local residents, day trips, or overnight trips without any local lodging expenses. It was assumed that these cases spent no money in the local area.

**Table B-1. Valid, Zero and Missing Spending Data by Segment**

	Local	Day trip	Motel	Camp out	Camp in	Other OVN	Total
Report some spending	11	152	71	35	48	44	361
Missing spending data	2	24	0	0	0	11	37
<u>Zero spending</u>	0	25	0	0	0	3	28
Total cases	13	201	71	35	48	58	426
Percent zero	0%	12%	0%	0%	0%	5%	7%
Percent missing	15%	12%	0%	0%	0%	19%	9%

Five cases reporting spending of more than \$1,000 were dropped when computing spending averages. Another 3 cases with lengths of stay greater than seven and 16 cases with party sizes more than 7 were also omitted, yielding a final sample of 402 cases for the spending analysis. The overall spending average is \$108 omitting outliers compared to \$71 with outliers.

**Table B-2. Spending Averages by Segment, with and without outliers**

Segment	With outliers			Without outliers			Pct Error <sup>a</sup>
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	
Local	23	13	31	24	12	32	78%
Day trip	71	201	559	31	194	52	24%
Motel	294	71	312	220	64	133	15%
Camp	138	35	170	122	34	143	39%
Camp in park	77	48	75	64	43	56	26%
<u>Other OVN</u>	<u>32</u>	<u>58</u>	<u>36</u>	<u>32</u>	<u>55</u>	<u>37</u>	<u>30%</u>
Total	108	426	417	71	402	106	14%

a. Pct errors computed at a 95% confidence level

## Appendix C. Impacts of all Visitor Spending, 2004

Table C1 gives the impacts of \$4.8 million in visitor spending on the local economy. All visitor spending in the region except park admissions and camping fees inside the park are included in this analysis. Impacts attributed to the park in Table 8 are about 16% less than the impacts when all visitor spending is included.

**Table C-1. Impacts of all Visitor Spending on Local Economy, 2004**

<b>Sector/Spending category</b>	<b>Sales \$000's</b>	<b>Jobs</b>	<b>Personal Income \$000's</b>	<b>Value Added \$000's</b>
<b>Direct Effects</b>				
Motel, hotel cabin or B&B	1,125	22	491	797
Camping fees	148	1	12	29
Restaurants & bars	805	17	373	421
Admissions & fees	125	1	49	79
Local transportation	397	13	200	219
Retail Trade	563	10	268	351
Wholesale Trade	85	1	32	56
<u>Local Production of goods</u>	<u>45</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total Direct Effects</b>	3,293	67	1,426	1,952
<u>Secondary Effects</u>	<u>993</u>	<u>11</u>	<u>372</u>	<u>615</u>
<b>Total Effects</b>	4,286	78	1,798	2,567