

# **Economic Impacts of Michigan Museums**

## **Executive Summary**

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Museums are a tangible and important component of cultural/heritage tourism in Michigan. The objectives of this study were to:

1. Estimate the number of visits to Michigan museums in 2001;
2. Estimate spending profiles for a set of museum visitor segments;
3. Estimate total spending by museum visitors both inside the museum and in the local community;
4. Determine the percentage of museum visitor spending attributable to museums and the percentage related to tourism;
5. Estimate the statewide economic significance and impact of museums including the impacts of museum operations and visitor spending; and
6. Estimate the local impacts of museums on Michigan communities.

Formally, we follow the American Association of Museums definition of museums to include history museums, historic houses or sites, general museums, children's and youth museums, art museums, natural history and anthropology museums, science and technology museums, nature centers, zoos and aquaria, arboretums and botanical gardens, and other specialized museums. Under this definition, Michigan has an estimated 393 museums.

Michigan museums hosted 10.9 million general admission visits in 2001. Forty-four percent of these visits were by residents of the local area, 15% were on day trips of at least 50 miles, and 41% of visits involved an overnight stay in the area. About 60 percent of overnight trips involved a stay at a hotel or bed and breakfast, while 40% of overnight visitors stayed with friends and relatives, in campgrounds or an owned seasonal home. The average museum visitor party consisted of 3 people. An average hotel stay was 1.6 nights if visiting the museum was the primary trip purpose and 2.7 nights if not.

Consistent with previous studies, Michigan museum visitors have somewhat higher income and educational levels than the general population, although museums serve a wide spectrum of age, educational and income groups. While sampling of individuals within travel parties may not have been completely random, women constituted 68% of the sample.

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## Visitor Spending

As is the case for tourists more generally, spending by museum visitors depends on the trip type. Local visitors to museums spent an average of \$45 per party on their trip while day trip visitors from beyond 50 miles spent \$70 (Table E-1). Overnight visitors staying in hotels spent on average \$569 per party for the entire trip or \$237 per party per night in the local area. The average travel party was three people.

**Table E-1. Visitor Spending within 30 Miles of the Museum by Trip Type Segment**

Spending Category	Day Trip		Overnight Trip	
	Local	Non-local	Hotel	Others
<b>Inside the museum</b>	\$ per party per trip			
Museum or Exhibit admission	\$ 9	\$ 10	\$ 14	\$ 17
Gift shop or snack bar	8	13	15	15
<u>All other expenses</u>	<u>1</u>	<u>2</u>	<u>2</u>	<u>2</u>
Total in museum	19	25	31	34
<b>In the community</b>				
Lodging	0	0	259	79
Restaurants and bars	13	15	118	76
Grocery and take-out food	2	3	12	32
Gas and oil	5	10	34	40
Other transportation	1	2	18	16
Admissions to other museums	1	1	8	9
Other admissions	1	1	9	6
Shopping	8	11	64	51
Casino gaming	0	2	9	6
<u>All other expenses</u>	<u>0</u>	<u>0</u>	<u>5</u>	<u>4</u>
Total in community	30	45	537	319
<b>Grand Total within 30 miles</b>	<b>\$ 49</b>	<b>\$ 70</b>	<b>\$ 569</b>	<b>\$ 353</b>
Spending per party per day	\$ 49	\$ 70	\$ 237	\$ 104

Total museum visitor spending is estimated by multiplying these spending averages by the number of travel party trips associated with museum visits. Museum visitors spent \$733 million dollars within 30 miles of the museum on these trips, including \$84 million inside the museum and \$649 million in the local community. Visitors staying overnight in hotels account for 61% of all museum visitor spending (Table E-2).

An average travel party spends about \$25 in the museum, split evenly between the museum admission and other spending inside the museum. For every dollar spent in the museum, another \$7.75 is spent in the surrounding community. Local residents accounted for about 10% of all museum visitor spending or about \$76 million. Hence, \$657 million of museum visitor spending is considered tourism spending, in that it occurs on trips of more than 50 miles from home. Trips involving a visit to a Michigan museum, therefore, account for about 7.3% of all tourism trip spending in Michigan.

**Table E2. Total Michigan Museum, Visits, Trips and Spending**

Measure	Day Trip		Overnight Trip		Total
	Local	Non-local	Hotel	Others	
Museum Visits (000's)	4,803	1,638	2,620	1,856	10,917
Party trips (000's)	1,550	546	780	499	3,374
Party days	1,550	546	1,871	1,696	5,663
Total Spending (\$ Millions)	\$ 76	\$ 38	\$ 443	\$ 176	\$ 733
Spending Impact (\$ Millions) <sup>a</sup>	\$ 29	\$ 30	\$ 192	\$ 83	\$ 334
Percent of Total Spending	10%	5%	61%	24%	100%
Percent of Spending Impact	9%	9%	57%	25%	100%

a. Spending impact is the amount of spending that would be lost to local communities in the absence of museums. Spending impacts include all spending on trips where a museum visit is the primary purpose, all spending in the museum, and 25% of spending in the community for non-primary purpose trips. Spending by local residents outside the museum is excluded.

### Spending attributed to museum visits

Not all of this economic activity would necessarily be lost to the community in the absence of museums. Eighty percent of museum visitors on day trips stated that the museum was the primary purpose for their trip, while only 38% of visitors on overnight trips made the trip primarily to visit the museum. Thirty-five percent of the overnight trips were to “visit the community in general” and 18% were to visit friends and relatives. Museums are both a primary destination for generating trips to an area and also part of the package of things to do when visiting a community.

The amount of spending that would be lost to local communities in the absence of museums is estimated based on trip purposes and the percentage of spending that visitors attributed to the historic/cultural components of their trip. All spending on trips for which the museum visit was the primary purpose would be lost, assuming the trip would not be made in the absence of the museum. We also assume all spending in the museum would be lost and include 25% of spending outside the museum for trips (excluding local trips) with a primary purpose other than to visit the museum. Survey respondents whose primary purpose was not to visit the museum reported that about 25% of their spending was related to historic/cultural aspects of the trip. For multi-purpose trips, this roughly includes spending associated with extending the stay in the area by a half-day to an extra night in order to visit the museum. Under these assumptions we estimate that 46% of all visitor spending, or \$334 million, would be lost to local communities in the absence of museums (spending impact row of Table E-2). This spending forms the impact scenario below.

### Museum Operations

Only a portion of the economic activity from museum operations is captured by visitor spending. A survey of museum administrators gathered complete information on museum employment, operating expenses, and revenue. Based on responses from 182

museums, Michigan museums employed 7,600 people on a part time or full time basis, with a total payroll of \$130 million in 2001. About 50% of museum budgets go to wages and salaries, with the other half scattered across utilities, supplies, services, maintenance and other categories. The proportion of museum expenses to these categories is fairly similar across museums in different size classes. Sources of revenue vary more widely, with museums depending to varying degrees on memberships, admission fees, gift shop revenues, gifts and grants, government sources, and endowments. Overall, we estimate that about 32% of museum revenue statewide is from visitor spending inside the museum while government and endowments each account for about 15%.

The vast majority of museums are small operations having fewer than 10,000 visitors and operating budgets below \$100,000. The six or seven largest museums account for almost 50% of all museum spending and half of all museum visits statewide. Museums employ about 29 people per million dollars of operating and spend half of their budgets on wages and salaries.

**Table E-3. Total Operating, Jobs and Wages and Salaries by Museum Size Classes**

Size (Gen'l Admission Visits)	Number of Museums	Operating (\$ Millions)	Jobs	Wages and salaries (\$ Millions)
<1,000	108	\$ 3	184	\$ 2
1,000 – 9,999	144	13	893	6
10,000 – 49,999	93	53	1,339	25
50,000 – 99,999	26	36	972	17
100,000 – 1 Million	18	90	1,800	43
<u>≥ Million</u>	<u>2</u>	<u>70</u>	<u>2,400</u>	<u>37</u>
Total	391 <sup>a</sup>	265	7,588	130

a. Two museums, whose budgets were dominated by large conference operations and/or educational programs, were omitted from the financial analysis.

## Statewide Economic Impacts

Two distinct types of economic impact analysis were carried out. An “economic significance” analysis measures all of the economic activity associated with museum visits, while an “economic impact” analysis sorts out the jobs and income that would be lost in the absence of the museums. The \$733 million spent by museum visitors on trips is the stimulus for the significance analysis, while \$334 million directly associated with the museum visit is used in the impact analysis.

Impacts cover both visitor spending and overall museum operations. To avoid double counting, the 32% of museum operations supported by revenue from general admission visitors is only included in the visitor spending impact estimates.

Impacts of visitor spending are estimated by applying the visitor spending to a model of the state economy. The MITEIM model is used to make the required calculations using state level sector-specific multipliers for the Michigan economy in 2000. Impacts are reported in terms of jobs (full and part time) and wage and salary income (including payroll benefits). Direct effects are the jobs and income in museums

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and tourism businesses selling directly to visitors. Secondary effects include the indirect effects on backward linked industries and the induced effects of household spending of income earned either directly or indirectly from museum visitors or operations. The statewide multiplier for museum visitor spending is 1.58, which means that for every dollar of visitor spending an additional \$ .58 of sales is generated through secondary effects.

Including direct and secondary effects, 25,000 jobs and \$552 million in wage and salary income are associated with museums, including all visitor spending on trips involving a museum visit. Sixty percent of these jobs and income would be lost to the state economy without museums under the impact scenario. The statewide economic impacts of museums is 15,000 jobs and \$331 million in wages and salaries. Under the impact scenario, roughly three fourths of the impacts are direct effects occurring in museums and the economic sectors directly selling goods and services to visitors (e.g., hotels, restaurants, retail stores). Fifty-eight percent of the jobs and 46% of income effects are from the museum operations, including those supported by visitor spending inside the museum (Table E-4).

**Table E-4. Summary of Michigan Museum Economic Significance & Impacts on the State Economy, 2002**

	Significance <sup>a</sup>		Impact <sup>b</sup>	
	Jobs	Wages & salaries (\$ Millions)	Jobs	Wages & salaries (\$ Millions)
<b>Direct effects</b>				
Visitor spending in museum	1,740	\$ 33	1,740	\$ 33
Visitor spending in community	12,511	253	4,755	117
<u>Museum operations<sup>c</sup></u>	<u>5,083</u>	<u>90</u>	<u>5,083</u>	<u>90</u>
Total Direct effects	19,335	376	11,578	240
<b>Secondary effects</b>				
Visitor spending in museum	489	10	489	10
Visitor spending in community	4,149	148	1,589	63
<u>Museum operations<sup>c</sup></u>	<u>1,402</u>	<u>18</u>	<u>1,402</u>	<u>18</u>
Total secondary effects	6,040	176	3,480	91
<b>Total effects</b>				
Visitor spending in museum	2,229	43	2,229	43
Visitor spending in community	16,660	401	6,344	180
<u>Museum operations<sup>c</sup></u>	<u>6,485</u>	<u>108</u>	<u>6,485</u>	<u>108</u>
Total effects	25,375	552	15,059	331

a. Significance includes all spending by visitors in the local area and all museum operating expenses.

b. Impacts include all museum operating expenses, all visitor spending on primary purpose trips and in the museum, and 25% of spending in the community for non-primary purpose trips.

c. Excludes 32% of museum operations supported by visitor spending in the museum to avoid double counting.

## Local Economic Impacts

The local economic impacts of museums may be seen by focusing on the impacts of a prototype museum on the local community. Secondary effects are somewhat lower when focusing on local impacts compared to a statewide analysis as local area multipliers are smaller than for the state as a whole.<sup>2</sup> To illustrate, we use a museum in a metropolitan area that attracts 25,000 visitors. We assume a distribution of trip types the same as the overall state averages<sup>3</sup> and a museum operating budget of \$700,000, of which roughly \$200,000 comes from visitor spending in the museum and \$500,000 from other sources. Impact and significance scenarios are the same as those above.

Total spending in the local area for 25,000 visitors is \$1,812,000. Spending of \$826,000 is assumed to be lost to the community if the museum were closed. Focusing on jobs as the impact measure, this museum supports 68 jobs in total, 51 associated with visitor spending and another 17 from museum operations<sup>4</sup>. Restricting impacts to spending that would likely be lost to the region if the museum were closed, the impact is 39 jobs, including the 17 jobs from museum operations and 22 jobs attributed to visitor spending.

**Table E-4. Economic Significance & Impacts of a Museum on the Local Economy, 2002  
(Museum with 25,000 Visitors and \$700,000 operating budget)**

	Significance		Impact	
	Jobs	Wages & salaries (\$ Millions)	Jobs	Wages & salaries (\$ Millions)
<b>Visitor Spending</b>	<b>Spending = \$1,812,000</b>		<b>Spending = \$826,000</b>	
Lodging	15	\$237	6	\$94
Restaurants & bars	12	138	4	50
Museum admissions	3	49	1	9
Other Admissions & fees	3	25	3	49
Retail & Wholesale Trade	6	129	3	67
<u>Other Sectors</u>	<u>3</u>	<u>42</u>	1	18
Total Direct Effects	42	621	18	288
<u>Secondary Effects</u>	<u>9</u>	<u>253</u>	4	104
Total Visitor Spending Effects	51	874	22	392
<b>Museum Operations of \$500,000<sup>a</sup></b>				
Direct	14	250	<b>14</b>	<b>250</b>
Secondary Effects	<u>3</u>	<u>35</u>	<u>3</u>	<u>35</u>
Total Operating impacts	17	285	<b>17</b>	<b>285</b>
<b>Grand Total Impact</b>	<b>68</b>	<b>1,159</b>	<b>39</b>	<b>677</b>

a. Another \$200,000 of museum operations supported by revenue from visitor spending is included within the visitor spending impacts.

<sup>2</sup> For a typical Michigan metro area, the sales multiplier for museum visitor spending is 1.46 compared to 1.58 for the state as a whole.

<sup>3</sup> Statewide trip segment shares are 44% local, 15% non-local day trip, 24% overnight in hotel and 17% other overnight.

<sup>4</sup> Roughly five jobs in the museum are supported by the visitor spending, so the total impact of museum operations is 22 jobs.

Since the impact model is linear, doubling of visits and operating expenses will double the estimated income and jobs. It should be noted that visitor spending and economic impacts of a particular museum will depend on several factors, in particular, (1) the number and kinds of visitors, (2) the extent of museum operations, including those not supported directly by revenue from visitor spending in the museum, (3) the regional setting, and (4) the importance of the museum in generating trips to the area. The mix of visitors is particularly important, as overnight visitors spend considerably more in the local area than those on day trips or local visitors. Isolating the economic impact versus significance of a particular museum is difficult as those visitors with the greatest spending are also the most likely to come to the area for a variety of activities.

### **Methods and Limitations**

Estimates in this report are based on trip spending reports of approximately 1,300 museum visitors sampled at 35 Michigan museums in 2002. Only general admission visitors were sampled, so our results exclude spending associated with organized programs and special events<sup>5</sup>. Estimates of overall visits and museum operating budgets, revenue and employment were derived from 182 responses to a survey of museum administrators. The Michigan tourism economic impact model (MITEIM) along with multipliers from an input-output model of the Michigan economy (estimated with the IMPLAN system) were used to compute visitor spending and economic impacts.

Survey results are subject to sampling, non-response and measurement errors. Spending averages in Table E-1 are subject to sampling errors of 4-9% (95% confidence level). Visitor survey responses represent 20% of visitors contacted on-site and 34% of those agreeing to the survey. The response rate to the museum administrator survey was 46%, although not all museums completed it fully. Operating budget estimates for museums are based on 128 responses, while revenues are based on 90 museums. Results were expanded to state totals within six museum size classes in order to represent the mix of large and small museums.

Economic impact analysis traces the flow of money spent by visitors and museums within state or local economies. It does not measure most of the educational and cultural values that we normally associate with museums. Economic impacts measure the contribution of market transactions associated with museums to state and local economies

The original impetus for this study was to assess the impact of cultural/heritage tourism. Museums represent only one element of this broad travel market. Museums were selected for this study as they represent a tangible set of facilities and programs and provide convenient locations for sampling visitors. A more comprehensive analysis of cultural/heritage tourism can be assembled by tackling other parts of the cultural/heritage tourism market, although this will require definitions of what trips, activities and providers should be included. For example, all trips to Mackinac Island can be considered as cultural/heritage tourism and some analysts would also include sporting events, performing arts, and national park visits as cultural/heritage tourism .

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<sup>5</sup> Operational expenses of museums in support of these activities are included in the analysis of museum operations.