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**Estimating the Contribution of the FARGODOME to the Area Economy <sup>1</sup>****Nancy M. Hodur, Dean A. Bangsund, F. Larry Leistritz, and John Kaatz <sup>2</sup>**

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Tourism has become an important economic sector in many parts of the world, and many regions, states, and local areas have identified expenditures by visitors as a potential source of economic growth. Increased leisure time, enhanced mobility, and increasing real income for substantial segments of the population are some of the reasons for a growing tourism sector (Gibson 1993, Zimmerman 1988, Eadington and Redman 1991). Because visitor spending can contribute to the local economic base, increase the demand for goods and services in a number of sectors, enhance local employment opportunities, and augment local tax revenues, many communities seek to enhance tourism and visitor-oriented activities. Communities have used a variety of strategies to attract visitors; some have focused on natural or historical attractions of their local areas, while others have developed infrastructure to enhance their ability to host a variety of entertainment events, for example, concerts, sporting events, or trade shows.

While the potential for major sporting events, concerts, and other forms of entertainment to attract visitors and produce local economic impacts is widely recognized (Davidson and Schaffer 1980, Marsh 1984, Gazel and Schwer 1997, Chhabra et al. 2003), much of the literature addressing the economic impacts of sporting events and sports facilities has focused on professional sports events and franchises and on major sports facilities (e.g., arenas, stadiums) in major metropolitan areas (for example, see Baade and Matheson 2001, Porter 1999, Noll and Zimbalist 1997). However, the economic impacts of a major event in a major metropolitan area may not be representative of the economic impacts in a smaller city.

Interest in developing facilities and measuring the economic impact of sports and entertainment facilities on the local economy is not limited to major metropolitan areas. The FARGODOME is a multi-purpose sports and auditorium facility, located in a small metropolitan center (Fargo, North Dakota). Since opening its doors in 1992, the FARGODOME has hosted a wide variety of sporting events (e.g., college and high school football, rodeo, professional basketball), concerts, trade shows, and other forms of entertainment (e.g., ice shows, circuses, motor sports events). In 2002, with the facility's 10<sup>th</sup> anniversary approaching, the FARGODOME Authority (local oversight body) commissioned an assessment of the facility to estimate the economic effects of the FARGODOME on the Fargo-Moorhead (Minnesota) area economy.

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## **The FARGODOME**

Designed as a multi-purpose facility capable of hosting a variety of sports and entertainment events, the FARGODOME can seat more than 19,000 fans for football games, more than 11,600 for basketball games, and nearly 27,000 for concerts. The facility was constructed at an initial cost of \$48 million; with a subsequent \$6.8 million expansion to provide additional meeting rooms and a larger ticket lobby. Bonds were issued to pay for FARGODOME construction costs, and the proceeds of a local ½ cent sales tax were dedicated until January 1, 2009, to repaying the bonds.

During its first 10 years of operation, the FARGODOME had 1,125 event days with more than 4.5 million attendees. One event (a country concert in 1997) holds the record as the largest indoor gathering in North Dakota history. The FARGODOME has recorded an operating profit each year, with the number of events, attendance, and revenues generally exceeding initial expectations (Almquist 2003a). From the time the facility was in the planning stage, economic impacts associated with FARGODOME events had been touted as a benefit to the local community (Almquist 2003b). This study estimated the economic effects of the FARGODOME operations, event attendees, and participant expenditures on the Fargo-Moorhead area economy.

## **Study Methods**

### Economic Impact Assessments

Local economic benefits are frequently cited as a justification for public investment in stadiums and other visitor-oriented facilities (Noll and Zimbalist 1997, Baade and Matheson 2001, Siegfried and Zimbalist 2000, Jones 2001). As a result, public entities are increasingly requesting estimates of the economic impact associated with these facilities and/or the events they host (Crompton 1995, Porter 1999). However, economic impact analyses of sports facilities and other entertainment events have come under increasing criticism in recent years, with a number of authors suggesting that these studies often seriously overstate the economic benefits accruing to host communities (Crompton 1995, Matheson 2002, Noll and Zimbalist 1997).

Critiques of past economic impact studies have covered a broad range of concerns, including investigator bias (impact studies are frequently funded by project proponents), misuse of multipliers, and improper specification of the study area (Porter 1999, Matheson 2002, Crompton 1995). However, the most pervasive shortcomings of past impact analyses appear to involve problems in properly defining the direct economic impact of tourist events (Tyrrell and Johnston 2001, Baade and Matheson 2001, Chhabra et al. 2003, Davidson and Schaffer 1980). In particular, many studies have not properly distinguished between the direct economic impact of an event (i.e., the net increase in regional expenditures directly related to the event) and the total expenditures of all event visitors and participants. In order to accurately estimate the direct economic impact of an event, it is important to determine event attendees' and participants' motivation for attending or participating in a particular event as well as determine what attendees would have done in the absence of the event (Tyrrell and Johnston 2001).

Differentiating expenditures made by local residents from those made by visitors to the area is critical. For most local residents, spending at or in conjunction with a specific event (e.g., sports event or concert) is likely a substitute for another local entertainment or recreational activity (Baade and Matheson 2001). Accordingly, the net economic effect for the study area would be zero. However, some local residents may have a high degree of commitment to a particular entertainer or type of event, and would travel outside the local area to attend a specific event or attend a similar event if not available locally. Expenditures by these local attendees are often termed 'retained expenditures' and are part of the event's local economic impact (Chhabra et al. 2003, Gazel and Schwer 1997).

Generally, but not always, expenditures by non-local event attendees are included in the estimate of the event's economic impact. The role of the event in motivating a visit to the area determines whether or not the expenditures are included in an estimate of the event's economic impact. For example, some non-local attendees may have traveled to the Fargo-Moorhead area for another purpose, but attended the event because they were in the community. Often termed 'casuals,' these attendees' expenditures generally should not be included in the estimate of the event's direct economic impact. Other non-local attendees, often termed 'time-switchers,' also should be excluded from economic impact studies. Time-switchers reschedule a planned visit to the community to coincide with the event.

Displacement or 'crowding-out' of other visitors by event attendees may also lead to over-estimating the economic impact of an event (Baade and Matheson 2001). Most prevalent in major destination areas where accommodations may be scarce relative to demand, visitors attending an event may simply replace other visitors, ultimately overstating the impact of the event.

Entertainment and sporting events may also be subject to special forms of leakages. For example, depending on where an event vendor obtains most of their supplies, their contribution to the local economy may be quite small. The same may be true for visiting entertainers or sports teams, who may spend only a small fraction of their event receipts within the study area. Alternately, vendors or event participants that purchase supplies locally or hire temporary staff from local labor pools may make substantial contributions to the local economy and the economic impact of the event.

All the factors discussed above must be considered when assessing the economic impact of tourist-oriented events. To address these concerns, an intercept survey conducted at FARGODOME events asked both local and non-local attendees a series of questions to qualify the attendees' motivations for attending an event and to identify alternate activities had the event not been available. While those questions may not at first glance appear to be relevant to estimating attendee expenditures, the responses are critical to making an accurate assessment of the economic impacts of an entertainment facility.

## Event Selection

The FARGODOME has hosted a wide variety of events in its first 10 years of operation, including concerts, family events, sporting events, and trade shows. Event attendees were hypothesized to differ substantially with respect to expenditures, residence (local/non-local), age, and income, as well as other attributes depending on the event. To ensure a representative sample, 11 events, each representing a different event type, were selected to represent the mix of events held at the FARGODOME (Table 1). All FARGODOME events were categorized into one of the 11 event types, with the exception of a number of events that were excluded from the study because those events would have been held in the community regardless of the presence of the FARGODOME (e.g., high school graduations). Including those events would have overstated the estimate of the economic impact of the FARGODOME on the local community.

Table 1. Summary of Events Surveyed, FARGODOME, 2002

<u>Event Type/Event Surveyed</u>	<u>Total Attendees</u>	<u>Completed Questionnaires</u>	<u>Number of Attendees Represented</u>
<b>Adult Concerts</b>			
Eagles	12,026	245	335
Pearl Jam	8,890	297	397
<b>College Football</b>			
NDSU Football	5,100	192	294
<b>Family Shows</b>			
Disney on Ice	22,426	186	608
<b>High School / Amateur Sports</b>			
Minnesota High School Football Regional Playoffs	10,204	143	315
<b>Consumer / Trade Shows</b>			
Home and Garden Show	11,215	251	612
<b>Motor Sports</b>			
Monster Trucks	14,210	231	627
<b>Professional Sports</b>			
NBA -- Minnesota Timberwolves	2,818	140	301
<b>Festivals</b>			
Ribfest	32,108	787	1,760
<b>USA Wrestling</b>	10,477	174	501
<b>Youth Concerts</b>			
Incubus	6,378	226	369
<b>Totals</b>	<b>135,852</b>	<b>2,872</b>	<b>6,119</b>

## Data Collection

While data for FARGODOME operational expenditures (e.g., labor costs, advertising) and patron spending at the facility (e.g., concessions, parking) were readily available, information regarding other expenditures made by event patrons while in the Fargo-Moorhead area was not. To gather expenditure data from event attendees, intercept surveys were conducted at the 11 representative events. A brief written questionnaire elicited information about attendees' spending in the local area before and after the FARGODOME event and whether the spending was for the respondent only or for the respondent and members of the respondent's family or group. To qualify event attendee expenditures as discussed previously, local respondents were queried about what they would have done had the FARGODOME not hosted the event they were attending. Non-local attendees were asked if they would have visited the area if the event were not being held and whether their current trip replaced any previously planned trip to the area. The questionnaire also requested basic demographic information, as well as inquired about the respondent's length of stay in the Fargo area, and their satisfaction with various aspects of the FARGODOME and its events. Over 2,800 completed questionnaires were obtained from attendees at the 11 events (Table 1). Because the questionnaire quantified whether the spending was for the individual respondent or the individual respondent *and* the respondent's family or group, the spending data collected is representative of over 6,000 event attendees (Table 1). In addition, event participants, such as trade show exhibitors, food vendors, and sponsoring organization personnel, were surveyed at some events.

### Local Impact Area

Practically speaking, the "local area" is broader than the city limits of Fargo. In fact, the "local area" crosses state lines as Fargo is separated only by the Red River from Moorhead, MN. The Fargo-Moorhead area also has a number of growing bedroom communities, all that would be considered part of the "local area." Accordingly, the local impact area was defined to include the cities of Fargo, West Fargo, and Moorhead (MN), as well as a number of smaller towns and rural residential areas within a 15-mile radius of Fargo. The respondents' zip codes as reported on the intercept surveys were used to categorize respondents as local residents or visitors.

### Estimating Direct and Secondary Impacts

As previously discussed, event attendee expenditures were estimated using data from the intercept survey. Facility operation expenditures were available from FARGODOME records. Event attendee average expenditures were multiplied by attendance figures from FARGODOME records to estimate total direct economic impacts. To estimate economic impacts for the previous nine years of FARGODOME operations, the per attendee expenditures were applied to the number of attendees for various event types for each year. Vendor and participant expenditures for applicable event types were assumed to be equal to those observed in 2002.

Secondary economic impacts and secondary (indirect and induced) employment were estimated by allocating both FARGODOME operation expenditures and attendee expenditures to the appropriate economic sectors (e.g., shopping expenditures to “retail trade,” lodging expenditures to “business and personal services”) and applying the interdependence coefficients of the North Dakota Input-Output Model (Coon and Leistriz 2002). The model has been used extensively in estimating impacts of public facilities, as well as a variety of industrial and resource development projects in North Dakota. The model was developed from primary data from North Dakota firms and households and is closed with respect to households (meaning that households are included within the model) (Leistriz et al. 1990).

### Results

Attendance overall was fairly evenly split, with slightly more out-of town visitors than local residents attending FARGODOME events (Figure 1); however, the composition varied greatly depending on the type of event. For example, 86 percent of USA Wrestling fans and 83 percent of adult concert attendees were from outside the local area. Alternately, local attendees were far more predominate at high school/amateur sports events (75 percent) and festivals (68 percent). Attendance was closely balanced between local attendees and visitors at college football games, consumer/trade shows, and youth concerts (Figure 1).

#### Event Type

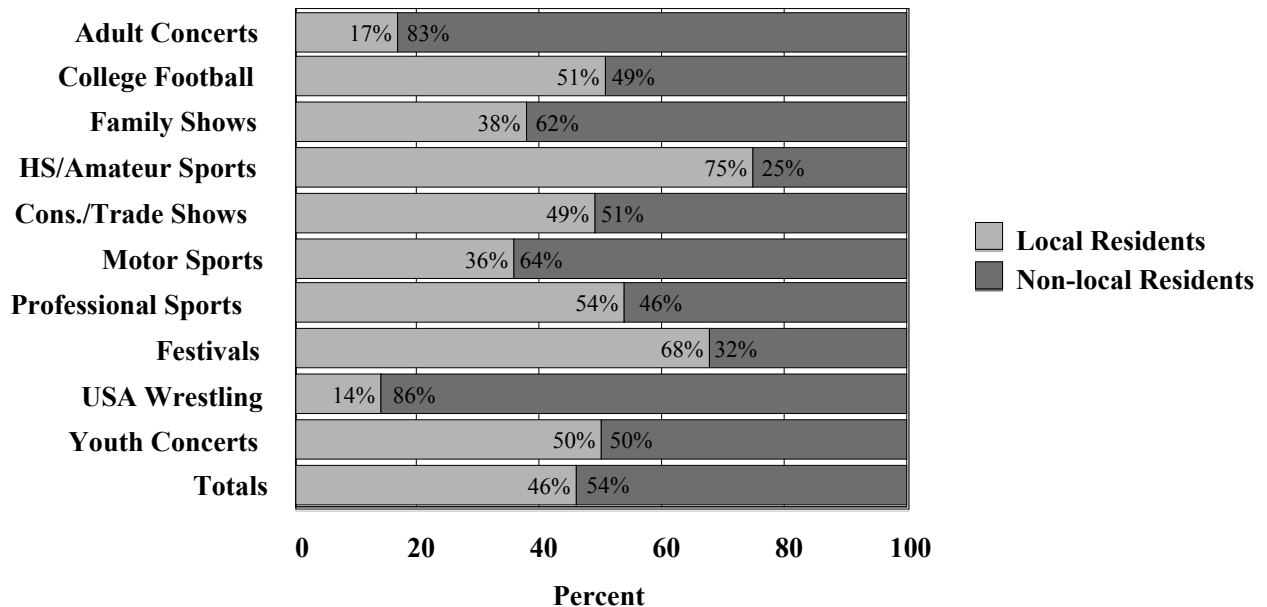


Figure 1. Residence of FARGODOME Event Attendees, by Event Type, 2002

Direct economic impacts were primarily attributable to visitors from outside the local area. The portion of direct economic impacts from expenditures by out-of-town attendees ranged from 67 percent for festivals to 100 percent for high school sporting events and USA Wrestling. Local attendees' contribution to direct economic impacts was substantially less, in most cases less than 10 percent. Local attendees' greatest contribution to total economic impacts was at festivals, where 33 percent of the event's direct economic impact was from local residents (Table 2).

The percentage of visitors that stayed overnight in the Fargo-Moorhead area in conjunction with a FARGODOME event also varied considerably depending on the event type. For example, 94 percent of USA Wrestling attendees stayed overnight in the Fargo-Moorhead area, while only 10 percent of high school/amateur sports events attendees stayed overnight. The low percentage of attendees that stayed overnight in conjunction with high school/amateur sporting events is likely because many of the events involve teams from the immediate region (less than 100 miles). Alternately, amateur wrestlers from around the country participated in a week-long tournament at the USA Wrestling event. Expenditures by the contestants and their coaches for meals, lodging, and personal items are substantial. Many spectators are family members of contestants, and many stay for the duration of the event. While high school/amateur sports and USA Wrestling represent the extremes in terms of the percentage of visitors that stay overnight, several other categories of events, specifically college football and youth and adult concerts, have substantial numbers of attendees that stay overnight in the Fargo-Moorhead area which contributes appreciably to the overall direct economic impact of the event. Overall, just over half (55 percent) of the non-local visitors stayed overnight in the Fargo-Moorhead area while attending a FARGODOME event (Table 2).

Table 2. Attributes of FARGODOME Event Attendees, 2002

Event Type	Direct Economic Impact		
	Local Attendees	Non-local Attendees	Non-local Attendees with Overnight Stay
	-- percent of direct impact --		-- percent --
Adult Concerts	2.7	97.3	44.7
College Football	3.3	96.7	47.4
Family Shows	1.2	98.8	26.3
High School/Amateur Sports	0.0	100.0	10.5
Consumer/Trade Shows	17.6	82.4	31.2
Motor Sports	3.9	96.1	29.3
Professional Sports	3.6	96.4	20.4
Festivals	32.7	67.3	25.4
USA Wrestling	0.0	100.0	93.8
Youth Concerts	23.0	77.0	50.1
Totals	4.4	95.6	54.8



Spending levels per attendee varied substantially among event types and between local attendees and out-of-town visitors (Table 3). Expenditures by non-local attendees were greater than for local attendees for all event types. Expenditures associated with the USA Wrestling event were highest for both visitors and local attendees, largely because of the multi-day nature of the event. College football games had the next highest per attendee spending for visitors, followed by adult concerts and festivals. Among local attendees, adult concert goers had the highest expenditures, followed by those attending consumer/trade shows and festivals.

Adult concerts had the greatest direct economic impact in 2002 of all event types, with \$3.8 million in direct economic impacts, followed by USA Wrestling with \$2.3 million and college football with \$1.7 million. Total direct economic impacts, of course, are a function not only of average expenditures of attendees, but also of the event attendance, the number of events held, and the percentage of expenditures that represents direct economic impacts. For example, attendee expenditures were on average higher for festivals than for motor sports. However, the overall economic impact of motor sports events was greater than for festivals because there were more motor sports events with higher overall attendance.

Of the total spending by local residents, just over 12 percent represented retained expenditures and are included in the estimate of economic impacts (i.e., the respondents that indicated they would have gone to an event outside the Fargo-Moorhead area if the event had not been held at the FARGODOME). Retained expenditures contribute to the event's local economic impact, since they represent purchasing power that would have left the area in the absence of the FARGODOME events (Table 3).

Of the total spending by out-of-town attendees, 63 percent represents direct economic impacts from FARGODOME events. The remaining 37 percent represents spending by persons who indicated that (a) the event was not their primary reason for visiting the Fargo-Moorhead area or (b) the trip to the event replaced another planned visit to the area. Accordingly, those expenditures are not included in the estimate of economic impacts. Overall, visitors accounted for more than 95 percent of the total direct economic impact of FARGODOME events (Table 3).

Table 3. Attendee Expenditures, Total Expenditures by Event Type, and Direct Economic Impacts, FARGODOME, 2002

Event Type	Average Expenditures per Attendee by Event Type <sup>1</sup>		Total Expenditures per Event Type			Direct Economic Impacts by Event Type <sup>2</sup>		
	Local Attendees	Non-local Attendees	Local Attendees	Non-local Attendees	Local & Non-local Attendees	Local Attendees	Non-local Attendees	Local & Non-local Attendees
	-----\$-----		-----\$-----			-----\$-----		
Adult Concerts	38.37	95.67	401,500	4,848,400	5,249,900	103,200	3,778,900	3,882,100
USA Wrestling	128.41	309.58	185,400	2,796,300	2,981,700	0.0	2,337,100	2,337,100
College Football	15.15	105.46	496,000	3,268,500	3,764,500	57,000	1,687,100	1,744,100
Consumer/Trade Shows	34.76	40.55	1,252,300	1,528,900	2,781,200	135,800	634,700	770,500
Motor Sports	15.26	54.01	190,600	1,176,600	1,367,200	21,700	534,500	556,200
Family Shows	7.80	29.70	107,700	657,900	765,600	4,000	382,500	387,000
Festivals	24.25	70.05	532,800	708,400	1,241,200	88,200	181,300	269,500
High School/ Amateur Sports	8.00	25.93	269,400	295,100	564,500	0.0	202,300	202,300
Professional Sports	8.54	37.36	100,200	363,400	463,600	6,200	166,000	172,200
Youth Concerts	11.96	23.92	131,700	264,800	396,500	37,700	126,300	164,000
Totals <sup>3</sup>	--	--	3,667,600	15,918,300	19,585,900	455,000	10,032,000	10,487,000

<sup>1</sup> Does not include spending on concessions, parking, tickets, souvenirs, or other items purchased at the FARGODOME.

<sup>2</sup> In the case of local attendees, direct economic impacts represent spending that would have left the region in the absence of the event. In the case of out-of-town attendees, direct economic impacts represent spending that would not have occurred in the area economy without the FARGODOME event.

<sup>3</sup> Columns may not total due to rounding.

In addition to attendee spending, vendor and participant expenditures associated with certain events were substantial (Table 4), as were the FARGODOME's operational expenditures. In 2002, vendor and participant spending added about \$2.4 million to the direct economic impact of the FARGODOME and the facility's operational outlays added another \$3.9 million. Thus, the total direct economic impact of the FARGODOME and its events was estimated at \$16.7 million in 2002.

Table 4. Total Direct Economic Impact, 2002

Impact Category	All Events
	----- \$ -----
Attendee Spending	10,487,000
FARGODOME Operations	3,862,000
Participant Spending <sup>1</sup>	1,970,000
Vendor Spending <sup>2</sup>	422,000
<b>Total</b>	<b>16,741,000</b>

<sup>1</sup> Includes spending by USA Wrestling Tournament participants and state wrestling associations.

<sup>2</sup> Includes spending by vendors at Festivals and Trade Shows.

The direct economic impact of the FARGODOME was concentrated in three sectors: *retail trade* (includes eating and drinking establishments, as well as retail and convenience stores, etc.), *business and personal services* (includes motels and hotels), and *households* (salaries and wages of FARGODOME employees). These three sectors captured more than 96 percent of the \$16.7 million in direct economic impacts for 2002 (Table 5). The secondary economic impacts, totaling \$23.6 million, were more widely distributed, with substantial amounts accruing in the *households* sector (personal income of area households) and the *retail trade* sector (Table 5). The total economic impact (direct and secondary) of \$40.3 million included \$16.3 million in added revenues for the *retail trade* sector, \$10.8 million in added income for area *households*, and \$4.9 million in added receipts for the *business and personal services* sector. These levels of increased business volume would be expected to support about 574 full-time equivalent jobs in various sectors of the area economy.

The FARGODOME's annual economic impacts over its 10-year history are summarized in Figure 2. Annual impacts ranged from \$37.9 million in 1995 to \$51.3 million in 1997. Concerts have generally been the largest single source of economic impacts, although in recent years the USA Wrestling event has grown to provide a similar level of economic stimulus. Other event types' impacts vary slightly from year to year depending on the number of events of each type held and other variable factors such as the win-loss record of the college football team.

Table 5. Direct, Secondary, and Total Economic Impacts, by Sector, FARGODOME Events and Operations, 2002

Economic Sector	Direct Impacts	Secondary Impacts	Total Economic Impacts
	-----\$-----		
Retail Trade	9,825,000	6,463,000	16,288,000
Households (economy-wide income)	2,029,000	8,736,000	10,766,000
Business and Personal Services	4,296,000	564,000	4,860,000
Finance, Insurance, and Real Estate	252,000	1,448,000	1,700,000
Communication and Public Utilities	291,000	1,276,000	1,567,000
Government	9,000	999,000	1,008,000
Construction	0	799,000	799,000
Professional and Social Services	39,000	722,000	761,000
Other Sectors	0	2,543,000	2,543,000
Totals	16,741,000	23,550,000	40,291,000

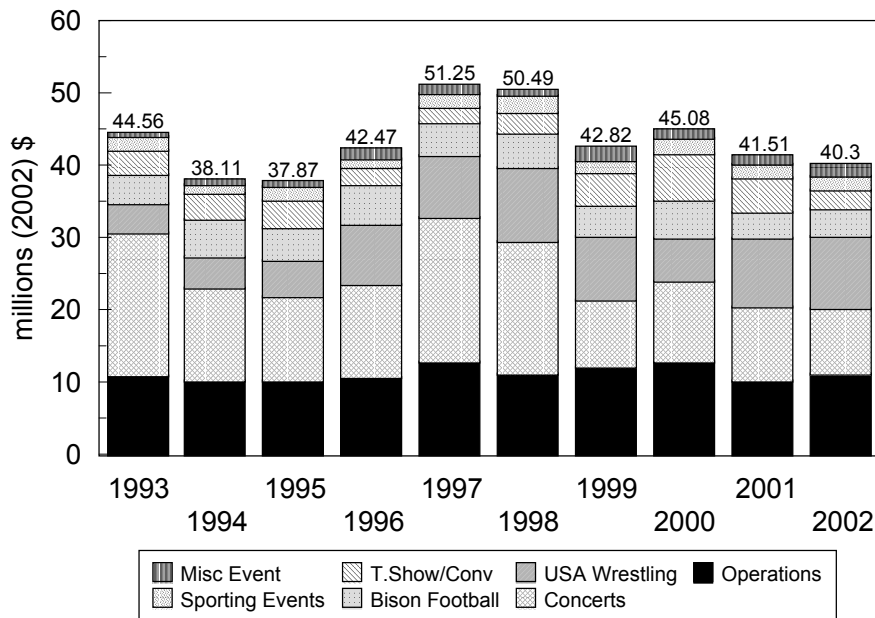


Figure 2. Total Economic Impacts (Direct and Secondary) of FARGODOME Events and Operations, 1993-2002

## Conclusions and Implications

As smaller cities consider developing visitor-oriented facilities, local economic benefits associated with increased visitor spending are often cited as justification for commitment of public resources. A realistic assessment of the local economic impacts associated with such facilities and the events they host is critical to informed public decision making. Previous attempts to estimate economic impacts of sporting events and other forms of entertainment have often focused on events held in major metropolitan areas. Further, economic impact assessments for such events have often been criticized for failing to distinguish between the total spending of event attendees and the actual direct economic impact of an event. Alternately, this study evaluated the economic impact of events hosted at a multi-purpose sports and auditorium facility in a small metropolitan center with a clear distinction between total spending and economic impacts.

Surveys of attendees at a representative cross-section of events hosted at the FARGODOME revealed that events differ substantially in their potential to draw attendees from outside the local area. Expenditure patterns of the attendees varied substantially depending on event type as well. For example, non-local attendees of adult concerts and college football games had expenditures that were two to three times greater than those of attendees at most other types of events. If local economic benefits are important to decision makers, these differences should be considered not only in facility planning (to ensure that the types of events that have a high economic impact potential can be accommodated) but also when scheduling specific events.

The study highlights the importance of addressing issues like attendee residence (local vs. non-local) and motivation for travel if a reasonable approximation of local economic impacts is to be made. For example, the total spending by attendees at the FARGODOME's 2002 events was estimated to be \$19.6 million; yet after adjustments, the direct economic impact was estimated at \$10.5 million. Had unadjusted total spending been used to approximate the direct economic impact, impacts associated with attendee spending would have been over-estimated by 87 percent.

Finally, the study results clearly demonstrate that the local economic impacts of sports and entertainment events can be substantial. Over its 10-year history, the FARGODOME's events and operations resulted in direct economic impacts totaling \$180 million and total economic impacts of \$434 million. This level of additional economic activity would support an average of more than 600 full-time equivalent jobs annually in various sectors of the local economy, in addition to the facility's 20 full-time and approximately 500 part-time employees. Clearly, the initial hopes of facility proponents that events hosted at the FARGODOME would provide a substantial stimulus to the local economy have largely been realized.

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