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Economic Contribution of Attendees of East Grand Forks Ice Arena Youth Events

A report of the Economic Impact Analysis Program

Authored by Brigid Tuck and Rani Bhattacharyya



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Executive Summary: Economic Contribution of Attendees of East Grand Forks Youth Ice Arena Events

As part of its mission, East Grand Forks Parks and Recreation offers a variety of youth programming, including youth hockey and figure skating. To offer this programming, the department operates multiple ice arenas. East Grand Forks Parks and Recreation is considering upgrading its ice arenas and facilities. Before moving forward, leaders were interested in understanding the economic contribution of youth activities in the community. Thus, they partnered with University of Minnesota Extension to conduct this study.

In winter 2021-2022, Extension surveyed attendees of youth hockey and figure skating events to gather data on spending in the community. Volunteers gathered surveys from events at the Civic Center, VFW, and Blue Line arenas. The survey received 140 responses.

Major findings from the analysis are as follows.

Total economic contribution: Ice arena youth event visitors generated \$2.1 million of economic activity in Polk County during the winter of 2021-2022. This included \$574,410 of income for county residents. The events supported 40 jobs. Businesses that benefited the most directly from the visitors include hotels, restaurants, and bars. Other industries, however, also benefited, including repair and maintenance construction, real estate, and management of companies.

Number of visitors: Extension estimated there were 9,379 youth ice event visitors during the 2021-2022 season. This included 3,955 overnight visitors and 5,424 day trippers.

Visitor spending: Visitors who stayed overnight during their trip spent, on average, \$133.30 per person per day. Major expenses included lodging and dining out. Those visiting for only the day spent, on average, \$64.50. Extension found the 9,379 visitors directly spent nearly \$1.7 million in the East Grand Forks area.

Accommodations: The overwhelming majority of ice event attendees stayed in hotels (91 percent). Of those hotel guests, 70 percent stayed at a property located in Grand Forks.

Visitor activities: The survey asked attendees what activities they engaged in during their visit. The most common activities included dining, youth skating, youth sports, and downtown shopping. No survey respondents engaged in cross-country skiing, snowshoeing, snowmobiling, or ice fishing, indicating there may be some opportunities to cross-market recreation opportunities.

Influence on visitor destination: The hockey and figure skating events are definitely drawing people to East Grand Forks. Only 15 percent of respondents would have come to East Grand Forks in absence of the event. Four in 10 attendees plan to return within a year, mostly for youth sports. By and large, visitors were satisfied with their trip.

Demographics: Most visitors traveled as families with children ages 13 to 17. Household incomes of the visitors are relatively high, with 40 percent at \$150,000 or more. Survey respondents came from locations across Minnesota and the Dakotas.

Project Background

As part of its mission, East Grand Forks Parks and Recreation offers a variety of youth programming, including youth hockey and figure skating. To offer this programming, the department operates multiple ice arenas.

For many parks and recreation departments, hosting tournaments is a critical source of revenue. As such, most departments compete to be tournament hosts. In an effort to remain competitive in attracting tournaments, East Grand Forks Parks and Recreation is considering upgrading its ice arenas and facilities.

Before seeking public funding, however, East Grand Forks Parks and Recreation was interested in understanding the economic contribution of youth hockey and figure skating activities in the community. During winter 2021-2022, Extension surveyed attendees of youth hockey and skating events to gather data on spending in the community. Volunteers gathered surveys from events at the Civic Center, VFW, and Blue Line arenas. Extension received 140 responses to the survey.

Economic Contribution

Economic contribution is comprised of direct, indirect, and induced effects. The direct effect is the initial change or activity in the economy. In this analysis, the direct effect is spending by visitors while attending youth hockey and figure skating events at East Grand Forks' ice arenas.

Indirect and induced effects are the impacts on businesses and workers that serve the visitors. Indirect effects relate to the supply chain. For example, when visitors spend the night in a local hotel, the hotel has to purchase goods and services from its suppliers, thus increasing demand on those supply chains. Induced effects relate to labor spending. A hotel worker, for example, receives income for working the weekend of a hockey tournament. The worker then spends the wages on groceries and rent, creating activity on those supply chains. The next section of this report explains Extension's approach to quantifying the direct effect for this analysis. Extension then used the input-output model, IMPLAN, to measure the indirect and induced effects.

Direct Effect

As mentioned, the direct effect is spending by visitors attending youth events at East Grand Forks' ice arenas. Visitor spending, in turn, is calculated by multiplying per person spending by the number of visitors.

Spending

To measure visitor spending, East Grand Forks Parks and Recreation partnered with Extension to survey attendees of ice arena events. The survey was conducted in a mixed methods approach, using both an online version of the survey and a paper version for intercept surveying. Initially, survey participation was encouraged through the distribution of postcards that contained a QR code with a link to the online survey. Due to low response rates, the project team chose to conduct intercept surveys during the second half of the study and included an incentive option for both online and paper survey participants to enter into a raffle for a \$50 gift certificate at a local restaurant.

The survey results showed that visitors who stayed overnight during their trip spent, on average, \$133.30 per person per day (Table 1). Major expenses included lodging and dining out. Those visiting for only the day spent, on average, \$64.50.



The survey results indicated that across all visitors, the average number of nights spent in the region to attend the event was 2.5. Thus, on average, overnight visitors spent \$333.40 per person per trip to East Grand Forks.

Table 1: East Grand Forks Youth Ice Arena Event Visitors: Spending Profile

Category	Per Person/Per Day		Per Person/Per Trip	
	Overnight	Day Only	Overnight	Day Only
Lodging	\$47.70	\$0	\$119.30	\$0
Restaurants/Bars	\$29.30	\$17.10	\$73.20	\$17.10
Transportation	\$18.90	\$21.80	\$47.30	\$21.80
Shopping	\$18.60	\$9.10	\$46.60	\$9.10
Youth Sports Related	\$10.10	\$11.80	\$25.20	\$11.80
Groceries	\$5.90	\$2.40	\$14.70	\$2.40
Recreation	\$2.40	\$0.90	\$6.10	\$0.90
Miscellaneous	\$0.40	\$1.40	\$1.00	\$1.40
Total	\$133.30	\$64.50	\$333.40	\$64.50

Visitors

The second step in quantifying the direct effect is to determine the number of visitors attending youth hockey and figure skating events. To do this, Extension started with the number of teams and skaters participating in tournaments and events during the 2021 - 2022 season (Table 2).

On average, each hockey team carries 14 players. The survey data shows 3.1 people traveled per player. For example, on the weekend of November 27-28, 2021, nine teams played in East Grand Forks, for a total of 126 players. If each player brought three people (including themselves), that equates to 390 visitors for that weekend. For figure skating events, East Grand Forks Parks and Recreation had registration figures. For the December event, COVID protocols limited attendees to one additional person per skater.

Based on this approach, Extension estimates 9,379 youth ice event visitors in the 2021-2022 season. As shown, visitors staying overnight spent more while in East Grand Forks than people coming only for the day. To account for this, East Grand Forks Parks and Recreation categorized the weekend as either mostly hockey teams from within the area and likely to come for the day or as mostly teams from outside the region and likely to spend the night (Table 2). All figure skating attendees were assumed to stay overnight.



Table 2: East Grand Forks Youth Ice Arena Events: Estimated Number of Visitors

Hockey:	Teams	Players Per Team	Total Players	People Per Player	Total Visitors	Local vs. Visiting Teams
November 13-14	7	14	98	3.1	304	Local
November 19-21	19	14	266	3.1	825	Visiting
November 27-28	9	14	126	3.1	391	Visiting
December 3-5	14	14	196	3.1	608	Local
December 10-11	4	14	56	3.1	174	Visiting
December 12	5	14	70	3.1	217	Local
December 17-19	6	14	84	3.1	260	Visiting
January 7-9	20	14	280	3.1	868	Local
January 14-16	14	14	196	3.1	608	Local
January 28-30	22	14	308	3.1	955	Local
February 4-6	17	14	238	3.1	738	Local
February 11-13	15	14	210	3.1	651	Local
February 18-20	9	14	126	3.1	391	Local
February 25-27	11	14	154	3.1	477	Local
March 3	2	14	28	3.1	87	Local
March 5	12	14	168	3.1	521	Local
March 18-20	7	14	98	3.1	304	Visiting
Hockey Total					8,379	
Figure Skating:	Skaters			People Per Skater		
December 10-11	185			2	370	Visiting
January 14-17	210			3	630	Visiting
Figure Skating Total					1,000	
Total					9,379	

Total Direct Effect

Total direct effect is the number of visitors times the spending per person per trip. The data shows an estimated 3,955 overnight visitors and 5,424 day trippers. Using those figures and the spending profiles, Extension finds the 9,379 visitors spent nearly \$1.7 million in the East Grand Forks area during their hockey or figure skating-related trip (Table 3).

Table 3: East Grand Forks Youth Ice Arena Event Visitors: Total Direct Spending

Category	Total Spending
Lodging	\$471,810
Restaurants/Bars	\$382,220
Transportation	\$305,460
Shopping	\$233,690
Youth Sports Related	\$163,670
Groceries	\$71,320
Recreation	\$28,890
Miscellaneous	\$11,030
Total	\$1,668,090



Total Economic Contribution

With indirect and induced effects included, visitors to East Grand Forks for youth hockey and figure skating events in 2021-2022 generated \$2.1 million in economic activity (Table 4). This included \$574,410 of income for area residents. The events supported 40 jobs.

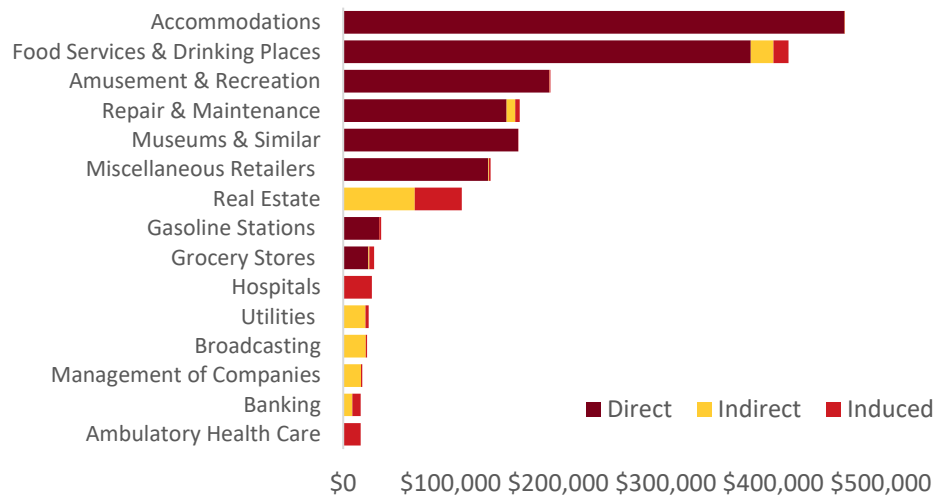
Table 4: East Grand Forks Youth Ice Arena Event Visitors: Total Economic Contribution

Category	Output	Labor Income	Employment
Direct	\$1,668,090	\$445,400	19
Indirect	\$274,730	\$71,940	11
Induced	\$203,680	\$57,070	10
Total	\$2,146,500	\$574,410	40

Top Industries Affected

Youth ice arena visitors generated \$2.1 million of economic activity in Polk County during winter 2021 to 2022. Businesses that benefited the most directly from the visitors include hotels, restaurants, and bars, as expected, given visitor spending (Chart 1). Other industries, however, also benefited, including repair and maintenance construction, real estate, and management of companies.

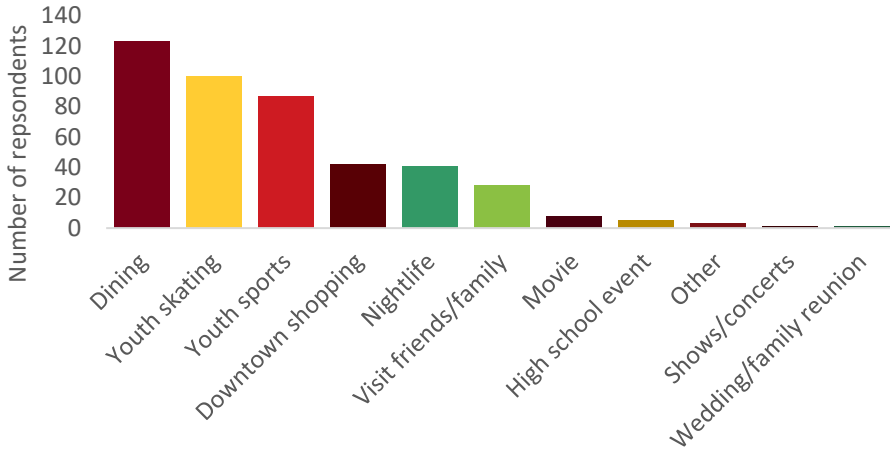
Chart 1: East Grand Forks Youth Ice Arena Event Visitors: Top Industries Impacted



The spending data is consistent with visitor reports on their activities. The survey asked attendees what activities they engaged in during their visit. The most common activities included dining, youth skating, youth sports, and downtown shopping (Chart 2). The survey also asked about participation in a wide range of outdoor recreation options, including cross-county skiing, snowshoeing, snowmobiling, and ice fishing. No survey respondents engaged in those activities, indicating there may be some opportunity to cross-market recreation opportunities.

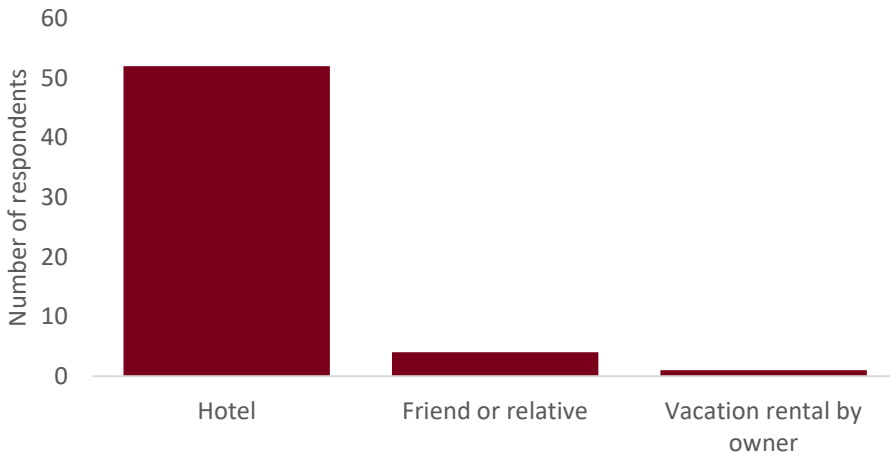


Chart 2: East Grand Forks Youth Ice Arena Event Visitors: Activities Most Frequently Engaged In During Visit



By and large, visitors are using hotel accommodations (Chart 3). Only a handful of respondents indicated they stayed with friend or relative or in a vacation rental by owner.

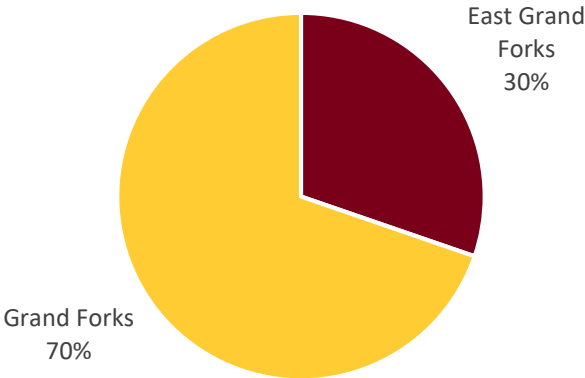
Chart 3: East Grand Forks Youth Ice Arena Event Visitors: Type of Accommodation Used



Many youth ice arena visitors spent the night in a hotel in Grand Forks versus East Grand Forks (Chart 4). With an estimated 3,955 overnight visitors, there are approximately 2,770 visitors staying in Grand Forks that could potentially be in East Grand Forks if there were more hotel accommodations available.



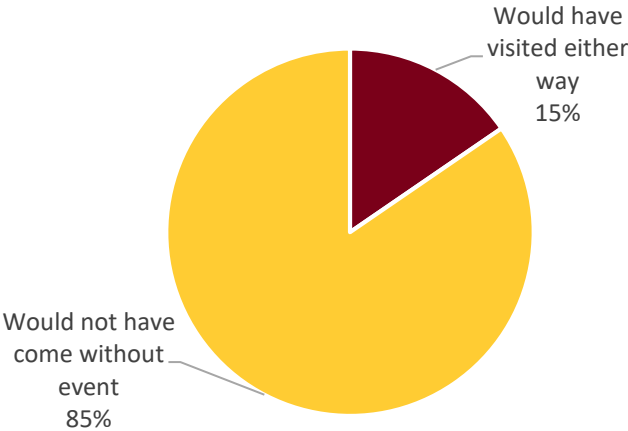
Chart 4: East Grand Forks Youth Ice Arena Event Visitors: Hotel Location



Influence on Visitor Destination

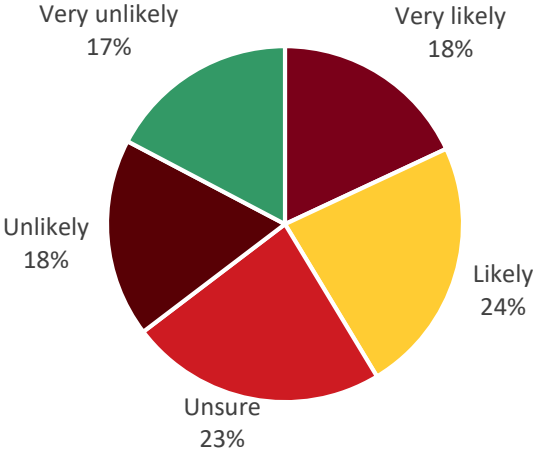
Survey respondents’ primary reason for traveling to East Grand Forks was to attend the youth ice event (Chart 5). Only 15 percent of respondents would have come to East Grand Forks in absence of the event.

Chart 5: East Grand Forks Youth Ice Arena Event Visitors: Role of Youth Ice Event in Decision to Visit East Grand Forks



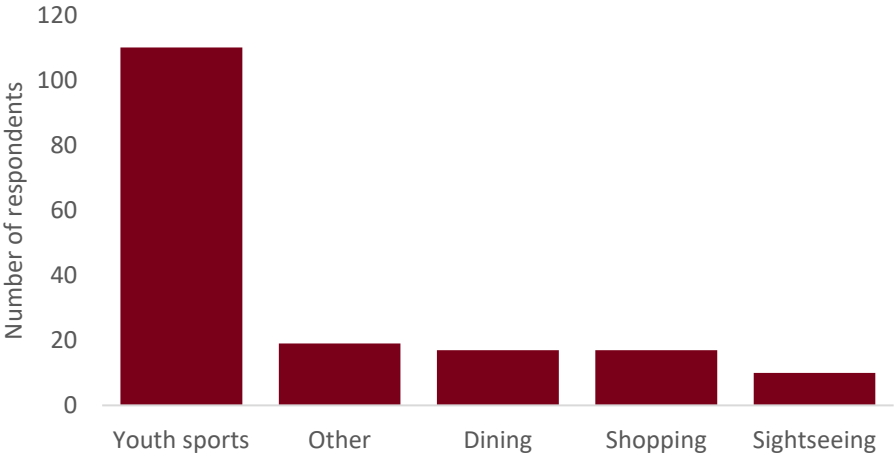
The survey results indicate that youth ice events drive return visits to East Grand Forks. More than four out of every 10 visitors planned to come back to the community within the year (Chart 6).

Chart 6: East Grand Forks Youth Ice Arena Event Visitors: Likelihood of Returning to East Grand Forks Within a Year



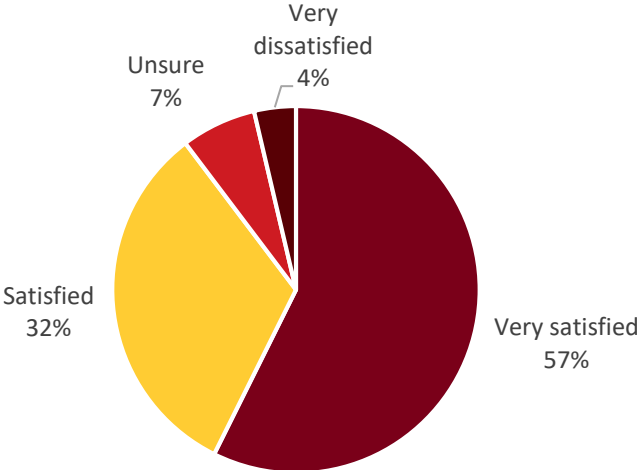
Visitors are mostly planning to return to attend more youth sporting events (Chart 7).

Chart 7: East Grand Forks Youth Ice Arena Event Visitors: Reason for Return Trip to East Grand Forks



By and large, visitors were satisfied with their trip to East Grand Forks (Chart 8). Ninety-five percent of respondents said the youth hockey event was the activity they enjoyed the most while in the community. Other responses included dining (4 percent of respondents) and shopping (1 percent of respondents).

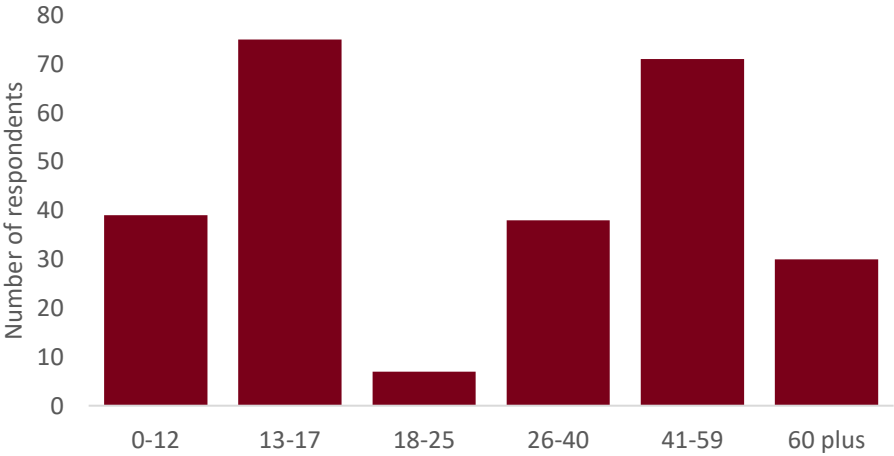
Chart 8: East Grand Forks Youth Ice Areana Event Visitors: Overall Level of Satisfaction with East Grand Forks Trip



Demographics

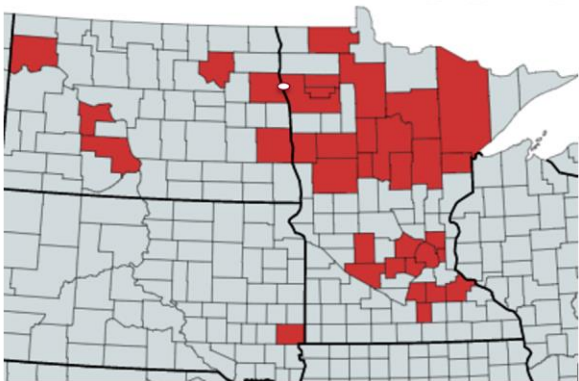
The survey also gathered some demographic data (Chart 9). Unsurprisingly, when asked which ages were in their travel party, the most frequently reported age categories were ages 13 to 17 (the players) and ages 41 to 50 (likely the parents). Most players traveled in family units (one or two kids under 18 with one or two adults), but a few did travel together as a team.

Chart 9: East Grand Forks Youth Ice Arena Event Visitors: Number of Travel Parties Containing Members in Specified Age Categories



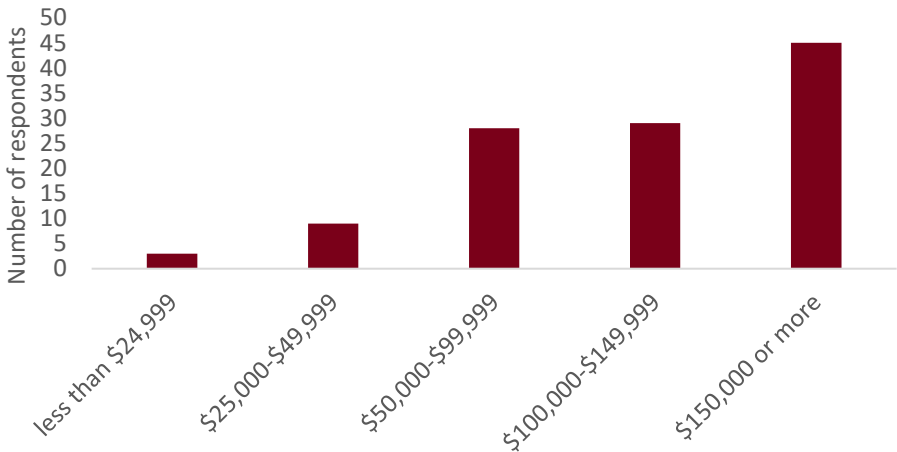
Survey respondents traveled from across Minnesota and the Dakotas to attend the events. Map 1 shows the home zip codes of survey respondents. These represent a sample of the total visitors, but provides a sense of just how far players and families are traveling.

Map 1: East Grand Forks Youth Ice Arena Event Visitors: Home Zip Code of Survey Respondents (White Dot is East Grand Forks)



The teams attending youth hockey and skating events have relatively high household incomes. Nearly 40 percent of the people who responded to the income question reported incomes of \$150,000 or more (Chart 10).

Chart 10: East Grand Forks Youth Ice Arena Event Visitors: Household Income Levels of Survey Respondents



Sensitivity Analysis

To complete the above analysis, Extension made several assumptions. A sensitivity analysis examines how the results might change if the assumptions change. Extension ran three alternate scenarios to test the sensitivity (Table 5).

In the first scenario, instead of 14 players per team, Extension modeled 12 players per team. The results show the total number of visitors decreases to 8,180 and the economic contribution also declines to \$1.9 million.

In the second scenario, Extension modeled a lower level of per person spending at \$300 for overnight visitors and \$58 for day trippers. In this scenario, the number of visitors remains constant, but the total economic contribution declines to \$1.9 million.

Finally, in the third scenario, Extension modeled a decrease in the number of people traveling per team. Instead of 3.1 people per player, as used in the main analysis, this scenario examines 2.5 people per player. Once again, attendance declines down to 7,755 people. Correspondingly, the economic contribution drops to \$1.8 million.

These results indicate that, even with fluctuations in number of attendees and visitor spending, the total economic contribution remains in the range of \$1.8 million to \$1.9 million.

Table 5: East Grand Forks Youth Ice Arena Event Visitors: Total Economic Impact, Sensitivity Analysis

Category	Output	Labor Income	Employment	Attendance
Teams of 12 Players	\$1,922,150	\$496,630	34	8,180
Spending at 90% of estimate	\$1,931,190	\$516,970	37	9,379
2.5 people per team	\$1,853,320	\$478,280	32	7,755

Notes on the Analysis

This analysis only examines the economic contribution stemming from spending by youth ice arena event attendees. Spending by East Grand Forks to operate the facilities also generates economic contribution, both from purchases of their supplies and from spending by their employees. That impact is not included in this report.



Appendix: Methods and Terms

Special models, called input-output models, exist to conduct economic impact analysis. There are several input-output models available, and IMPLAN (IMpact Analysis for PLANning, MIG, Inc.) is one such model. Many economists use IMPLAN for economic contribution analysis because it can measure output and employment impacts, is available on a county-by-county basis, and is flexible for the user. While IMPLAN has some limitations and qualifications, it is one of the best tools available to economists for input-output modeling. Understanding the IMPLAN tool's capabilities and limitations helps ensure the best results from the model.

One of the most critical aspects of understanding economic impact analysis is the distinction between the "local" and "non-local" economy. The model-building process identifies the local economy. Either the group requesting the study or the analyst defines the local area. Typically, the study area (the local economy) is a county or a group of counties that share economic linkages. In this report, the study area is Polk County.

A few definitions are essential to properly interpret the results of an IMPLAN analysis. These terms and their definitions are provided below.

Output

Output is measured in dollars and is equivalent to total sales. It can include significant "double counting." As an example, think of a screen printer creating customized T-shirts for hockey tournament attendees. The value of T-shirt is counted when it is sold to the screen printer and then again when it is sold to the final wearer. The value of the T-shirt is built into the price of each of these items, and then the sale of each item is added to determine total sales (or output).

Employment

IMPLAN includes total wage and salaried employees, as well as the self-employed, in employment estimates. Because employment is measured in jobs and not in dollar values, it tends to be a very stable metric. In this report, one job is one job, regardless if it is a full-time, part-time, or seasonal job.

Labor Income

Labor income measures the value added to the product by the labor component. So, in the screen printing example, when the plain T-shirt is sold to the screen printer, a certain percentage of the sale is for the labor to sew the T-shirt. Then when the customized T-shirt is sold to the final consumer, it includes some markup for the screen printer's labor costs in the price. These individual value increments for labor can be measured, which amounts to labor income. Labor income does *not* include double counting.

Labor income includes both employee compensation and proprietor income. It is measured as wages, salaries, and benefits.

Direct Impact

Direct impact is equivalent to the initial activity in the economy. In this study, it is spending by people attending youth skating events in East Grand Forks.



Indirect Impact

The indirect impact is the summation of changes in the local economy that occur due to spending for inputs (goods and services) by the industry or industries directly impacted. For instance, if employment in a manufacturing plant increases by 100 jobs, this implies a corresponding increase in output by the plant. As the plant increases output, it must also purchase more inputs, such as electricity, steel, and equipment. As the plant increases its purchase of these items, its suppliers must also increase production, and so forth. As these ripples move through the economy, they can be captured and measured. Ripples related to the purchase of goods and services are indirect impacts. In this study, indirect impacts are those associated with spending by East Grand Forks ice arena youth events.

Induced Impact

The induced impact is the summation of changes in the local economy that occur due to spending by labor—that is, spending by employees in the industry or industries directly impacted. For instance, if employment in a manufacturing plant increases by 100 jobs, the new employees will have more money to spend on housing, groceries, and going out to dinner. As they spend their new income, more activity occurs in the local economy. This can be quantified and is called the induced impact. Primarily, in this study, the induced impacts are economic changes related to spending by workers that serve the visiting East Grand Forks hockey and figure skating families.

Total Impact

The total impact is the summation of the direct, indirect, and induced impacts.

