

Understanding **Tourism Impacts** IN THE WESTERN U.P.

May 2024



ECONOMIC GROWTH INSTITUTE

The Economic Growth Institute leverages the University of Michigan and other public/private resources, research, technologies, and expertise to foster innovation and equitable economic growth. EGI has provided innovative economic development programming and applied research for almost 40 years.

SPECIAL THANKS:

The success of this study depended on the support and participation of many individuals and organizations including the Baraga County, Keweenaw, Lake Gogebic Area, Ironwood Area, and Ontonagon County Chambers of Commerce; Iron County Economic Chamber Alliance; Baraga, Visit Keweenaw, Porcupine Mountains & Ontonagon Area, and Western U.P. Convention & Visitor Bureaus; local governments across the six counties; and countless local businesses and organizations who engaged in conversations with our project team and assisted with distributing materials.

ACKNOWLEDGEMENT:

This report was prepared by the University of Michigan as subrecipient of Western Upper Peninsula Planning and Development Region, using Federal funds under award #06-69-06408 from the Economic Development Administration (EDA), U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of EDA. ELI MCCLAIN RESEARCH PROJECT MANAGER

> DR. SARAH CRANE DIRECTOR OF RESEARCH

KASEY LANESE RESEARCH ASSOCIATE

FUQIANG WANG RESEARCH ASSOCIATE

JANKEESH SANDHU RESEARCH PROJECT MANAGER

> KATHLEEN TOMASIAN ASSISTANT IN RESEARCH

Contents

Executive Summary......4 Western U.P.8 Baraga County......48 Gogebic County......61 Houghton County.....74 Iron County......91 Keweenaw County.....104 Ontonagon County.....121 Appendix A: Methodology......134 Appendix B: Additional Data......152 Sources & Credits.....163



Executive Summary

This report provides a detailed overview of trends in the Western U.P. tourism sector and an analysis of the economic impacts of tourism on the region. The Western U.P. stretches across 6,028.8 square miles of land and contains a rich wealth of natural and cultural heritage assets. The region is comprised of six counties-Baraga, Gogebic, Houghton, Iron, Keweenaw, and Ontonagon-and forms part of the broader Upper Peninsula Prosperity Region. The goal of this report is provide regionally-specific and timely data on visitation, visitor patterns, spending figures, and economic impacts to aid local leaders and policymakers in decision making and resource allocation.

Key findings from the report are as follows:

Visitation: The Western U.P. region saw increased visitation as COVID-19 pandemic related restrictions eased and has continued to see strong visitation numbers above 2019 figures. 2023 Visitor Trips are estimated at 2,076,847 (Pages 10-11).

Lodging Areas & Day Trip Areas: Tourism to the Western U.P. is generally regional in nature. Half of all day trip visitors surveyed reported visiting two or more areas, while 21.5% of overnight visitors report staying in two or more areas on their trip.

Trip Length: Overnight trip travel parties generally stay in the region for 4 days. 84% of all travel parties surveyed report staying in the region for 7 or fewer days per trip (Page 14).

Party Size: Travel parties to the Western U.P. are generally comprised of two individuals and over two-thirds of all travel parties surveyed report having three or fewer members (Page 15).

Visitor Origins: While visitors report traveling from across the country and from a variety of foreign nations, we find that travel to the Western U.P is largely regional in nature with the majority of visitors coming from Michigan, Wisconsin, Minnesota, and Illinois (Pages 16-17).

Executive Summary

Purpose of Trip & Activities: Leisure travel is overwhelmingly the most reported purpose of trip in the Western U.P. While in the region, visitors report engaging in a variety of activities that allow them to engage with the natural environment and the cultural heritage of the area (Pages 18-25).

Visitor Spending: Visitor spending varies by destination, season, activities and other variables. Typically, travel parties spend \$356.61 per person for a 4-day overnight trip and \$101.63 per person on a day trip to the region (Pages 26-33).

Net Promoter ScoreSM: Travel parties report high levels of satisfaction with their trip to the Western U.P., with the majority classified as very likely to recommend visiting to their friends. The overall NPS[®] for the visitor sample is 74.5 with variation across visitor segments based on season of trip, activities, trip destinations, visitor origin, and household income (Pages 35-38).*

Economic Impact Analysis: This report contains economic impact analysis of the visitor spending and the industries locally supported by this economic activity. Analysis has been conducted for the Western U.P. six-county region, as well as for each county individually (Pages 40-44; 51-55; 62-66; 77-81; 88-92; 103-107; 114-118).

*"Net Promoter[®], NPS[®], NPS Prism[®], and the NPS-related emoticons are registered trademarks of Bain & Company, Inc., NICE Systems, Inc., and Fred Reichheld. Net Promoter Score SM and Net Promoter System SM are service marks of Bain & Company, Inc., NICE Systems, Inc., and Fred Reichheld."

Project Introduction

Through the collaboration between the Western Upper Peninsula Planning and Development Region (WUPPDR), Visit Keweenaw, and University of Michigan Economic Growth Institute, this project identifies and analyzes regional tourism trends and related economic impacts. Tourism is an important economic factor in the region; however, there has been a critical lack of available regionally-specific tourism data to inform local leaders and policymakers. Through five phases the team has collected and analyzed market data, built local partnerships, and informed community members to help improve decision making and resource allocation.

PROJECT TIMELINE

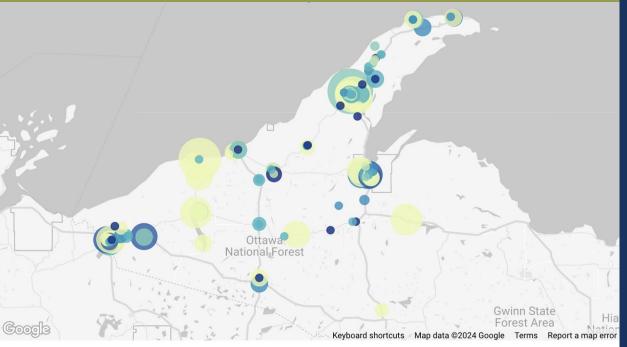
Sept. 2022 - Jan. 2023: Scoping, Survey Design, & Data Collection Jan. 2023 - Apr. 2023: Survey Data Collection Phase 1 May 2023 - Nov. 2023: Survey Data Collection Phase 2 Nov. 2023 - Mar. 2024: Data Analysis Mar. 2024 - Apr. 2024: Reporting & Dissemination

DATA COLLECTION

Two central data collection methods were employed by the project team. Survey instruments were designed to collect trip data at the travel party and respondent levels and were promoted using printed materials, social media, and email newsletters. Printed materials with links and QR codes for the survey were distributed to **more than 175 locations** across the region with the support of local partners and stakeholders. From the survey instruments, the team collected primary data from **3,334** respondents traveling to the Western U.P. on a day or overnight trip.

Secondary data was collected from dozens of sources including local, state and federal campgrounds, visitor centers, short-term rental analytics platforms and incorporated into visitation estimates (See Appendix A for more details).

Survey Distribution & Sample



terials Distributed Location Ty

Distribution Locations

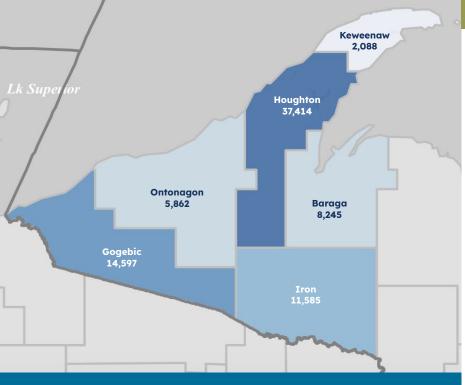
175+

Valid Survey Responses

3,334

Visitors Represented

10,639

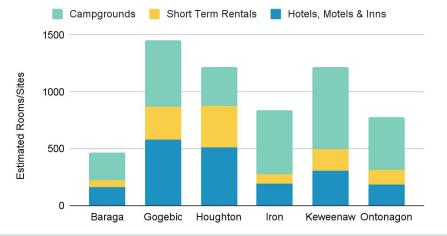


Western U.P.

OVERVIEW

REGION	SQ. MILES (LAND)
Baraga	898.4
Gogebic	1,102.1
Houghton	1,009.1
Iron	1,166.1
Keweenaw	540.1
Ontonagon	1,311.0

	Baraga	Gogebic	Houghton	Iron	Keweenaw	Ontonagon	Western U.P.
Total population	8,245	14,597	37,414	11,585	2,088	5,862	79,791
White	79.8%	94.7%	94.5%	96.6%	99.6%	97.8%	93.7%
Black or African American	9.0%	2.5%	1.5%	1.0%	0.3%	1.2%	2.3%
American Indian and Alaska Native	16.4%	3.8%	1.4%	1.9%	2.3%	2.4%	3.6%
Asian	0.8%	0.7%	3.2%	1.0%	0.0%	0.9%	1.9%
Native Hawaiian and Other Pacific Islander	0.3%	0.4%	0.1%	0.4%	0.0%	0.0%	0.2%
Some Other Race	0.8%	1.5%	2.2%	2.6%	1.0%	1.1%	1.8%



Campgrounds Short Term Rentals Hotels, Motels & Inns

Lodging Sector

SUMMER SEASON (JUNE-AUGUST)

Lodging offerings in the Western U.P. vary by county and season, with each county having a distinct mix of available visitor lodging types. There are an estimated **5,972** rooms, sites, and rentals available across the region during the summer months. Roughly 24% of these offerings are located in Gogebic County, 20% in Houghton, 20% in Keweenaw, 14% in Iron, 13% in Ontonagon, and 8% in Baraga.

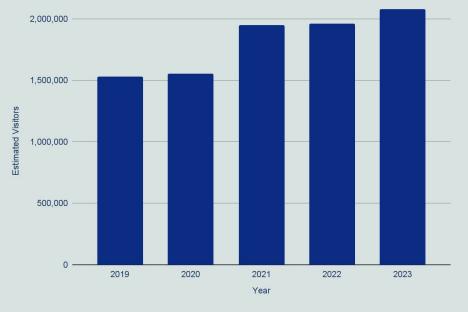
*Campground closures were assessed via campground booking records and published seasonal closure data. Closure was assessed at the campground level and does not account for potential reductions in the number of operational sites.

Lodging Sector WINTER SEASON (DECEMBER-MARCH)

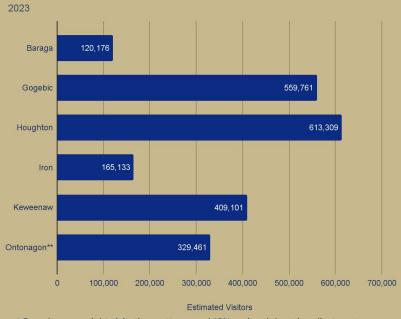
There are roughly **42% fewer** lodging offerings across the region (**3,486**) in the winter due partially to the seasonal closure of most campgrounds* as well as some motels and short term vacation rentals. Roughly 26% of these winter offerings are located in Houghton County, with 24% in Gogebic County, 18% in Keweenaw, 17% in Ontonagon, 7% in Iron and 7% in Baraga.

Estimated Visitors Per Year

2019-2023



Estimated Visitor Trips by County*



* Based on overnight visitation patterns and 19% regional day trip adjustment.

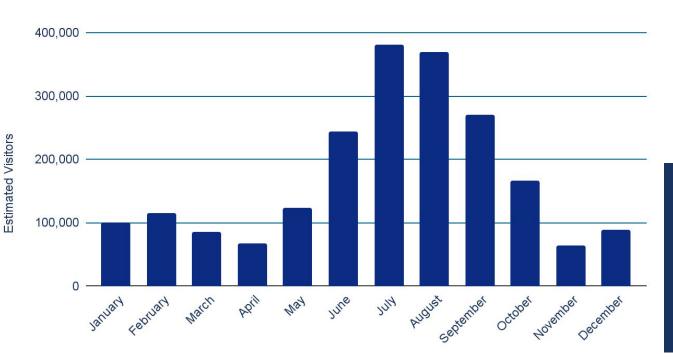
Visitor Estimates

ANNUAL VISITATION

We estimate that there were **2,076,847** visitors trips taken to the Western U.P. in 2023. This reflects a 6.4% increase in visitor trips from 2021 and a 35% increase from pre-pandemic 2019 levels.

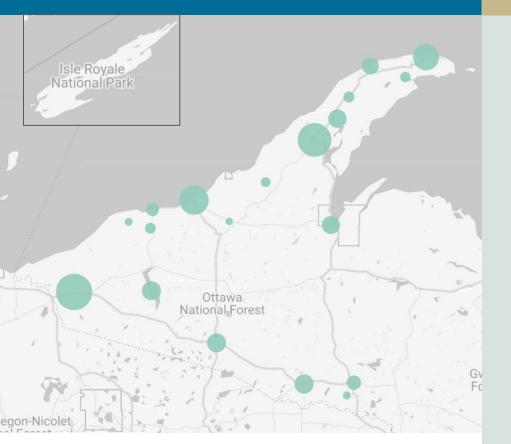
** Ontonagon county estimates do not reflect high levels visitation to the Porcupine Mountains Wilderness State Park by visitors staying in other Western U.P. counties. Sources: Local, State, and Federal Campground Data, PA59 Audits, AirDNA, Visit Keweenaw See Appendix A for more detail on our Visitor Estimation Methodology

Visitor Estimates by Month and Trip Type



Day 19% Overnight 81%

The majority of trips to the Western U.P. occur between the months of June and October, with the highest peak occurring in July. There is a smaller peak period in the winter months between December and March, with a high point in February.



% of Sample



Day trip areas with 1% or more of the visitor sample represented on the map

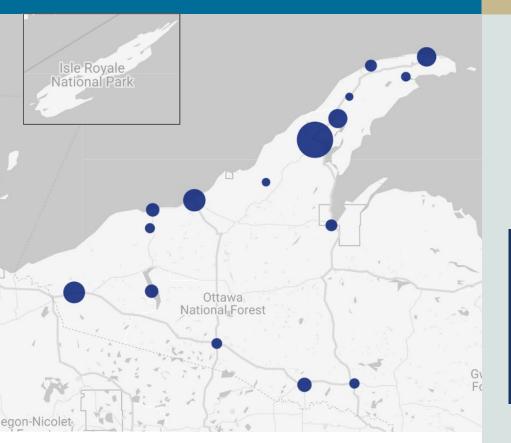
Reported Day Trip Areas

355 DAY TRIPS VISITS REPRESENTED IN SAMPLE

19% of visitor trips to the Western U.P. are estimated to be day trips. Top reported day trip areas include Ironwood/Bessemer/Wakefield (31.3% of visitors), Houghton/Hancock (28.6%) Ontonagon (23.9%), Copper Harbor (20.6%) and Iron River (13.2%). **Half of all day trip visitors report two or more areas on their trip**.

Median Travel Party Size

2 Persons



% of Sample



Lodging areas with 1% or more of the visitor sample represented on the map

Reported Lodging Areas

2,976 OVERNIGHT TRIPS VISITS REPRESENTED IN SAMPLE

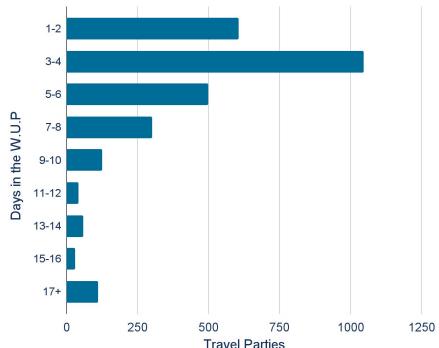
81% of visitor trips are estimated to include at least one night in the Western U.P. Top reported overnight lodging areas include Houghton/Hancock (27.2%), Ontonagon (14.4%), Ironwood/Bessemer/Wakefield (13.9%), Copper Harbor (11.7%) and Calumet/Lake Linden (11.4%). Roughly one fifth (21.5%) of overnight trip visitors report staying in two or more areas on their trip.

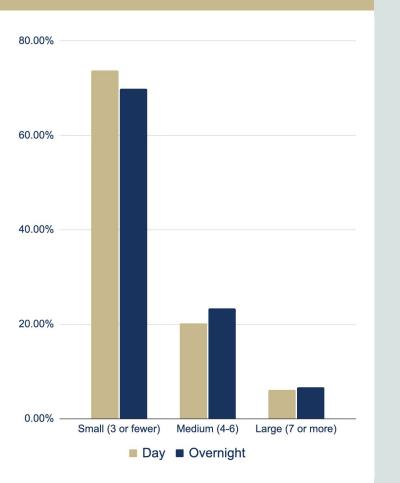
Median Trip LengthMedian Travel Party Size4 Days2 Persons

Length of Stay

IN THE WESTERN U.P.

The median length of stay for overnight travel parties in the Western U.P. is **4 days**. The median trip length varies slightly throughout the year rising to 4.25 days in the winter and dropping to 3.5 days in the spring. **84% of travel parties spend 7 or fewer days on their trip to the region while 95% of travel parties spend 14 days or fewer**.



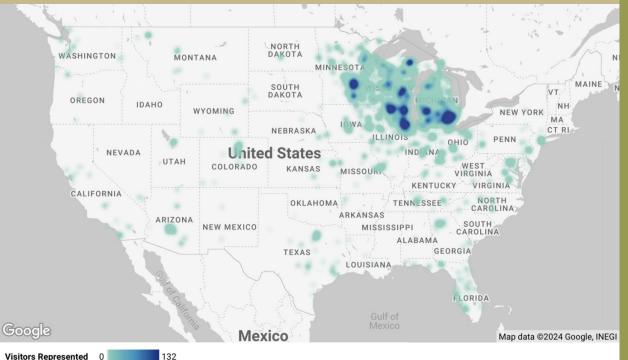


Travel Party Size

The median travel party size is **2 persons** and remains consistent across all seasons. **Over two-thirds of all travel parties are composed of 3 or fewer visitors** (73.7% day trip / 69.9% overnight trip). Roughly one-fifth of travel parties contain 4-6 visitors (20.2% day / 23.3% overnight) while 6% have 7 or more visitors (6.1% day / 6.7% overnight).

Visitor Origins

BY ZIP CODE OF TRAVEL PARTY



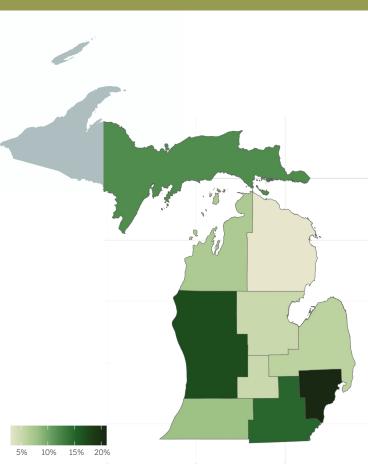
Travel parties reported visiting the Western U.P. from 48 states as well as foreign countries including the United Kingdom and Canada. The majority of visitors are engaged in regional travel. Over 80% of all visitors reside in one of four midwestern states: Michigan (35.5%), Wisconsin (29.7%), Minnesota (10.3%), and Illinois (8.7%).

Visitors Represented 0

Michigan Visitors

BY MEDC PROSPERITY REGION

Prosperity Region	% of Michigan Visitors
Detroit Metro Prosperity Region	21%
West Michigan Prosperity Alliance	17%
Southeast Michigan Prosperity Region	15%
Upper Peninsula Prosperity Alliance	12%
Southwest Prosperity Region	8%
Northwest Prosperity Region	7%
East Michigan Prosperity Region	6%
East Central Michigan Prosperity Region	5%
South Central Prosperity Region	5%
Northeast Prosperity Region	3%

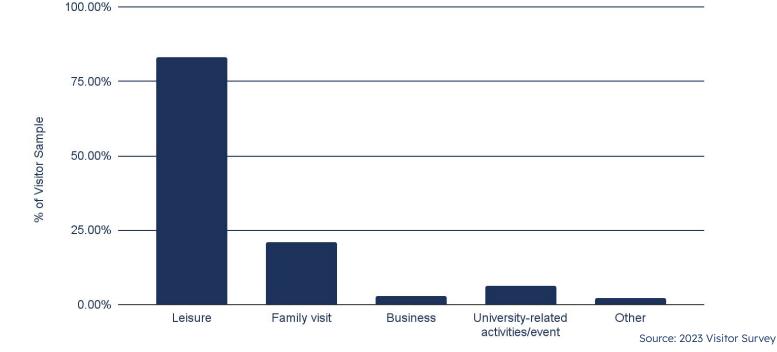


Purpose of Trip

Visitors to the Western U.P. are largely engaged in leisure travel. Roughly 83% of visitors report engaging in leisure travel while 21% report that they are engaged in a family visit. Smaller portions of the sample were engaged in business (3%) and/or university-related events (6%).

18

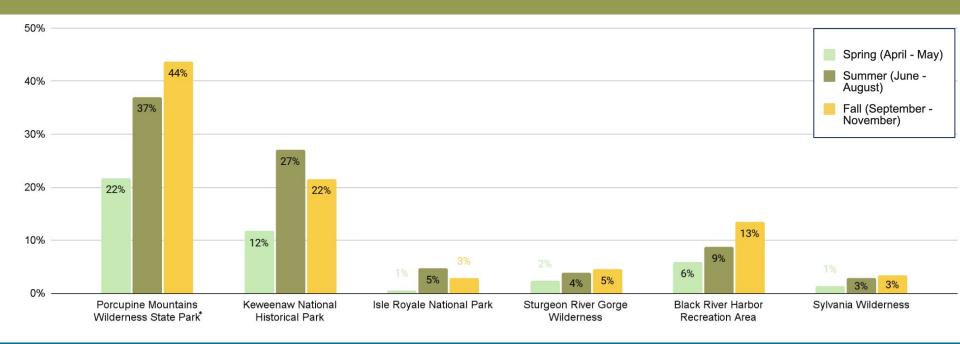
Percentages sum up to more than 100% due to selection of more than one purpose of trip.

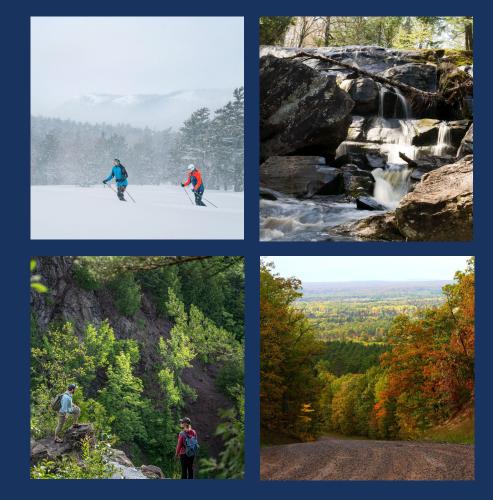


Reported Park Visitation

MAY - NOVEMBER

The Western U.P. contains 8 state parks, 2 national parks, 1 national forest, and a variety of county and local parks. Visitors were asked to report their visitation to 6 selected parks and natural areas. A larger portion of seasonal visitors report visiting the Keweenaw National Historical Park and Isle Royale in the Summer than in the Spring or Fall. For the other four parks included in this question a larger portion of the seasonal visitors reported visiting in the Fall followed by Summer and Spring.





Top Activities

BY VISITATION SEASON

Visitors come to the Western U.P. to engage in a variety of activities. Respondents were asked to report the activities their travel party was engaged in over the course of their trip. Activity responses were standardized-and in some cases-condensed into broader activity groups. The following pages contain the top 10 reported activity groups presented as a percentage of the seasonal visitor sample. As respondents could report more than one activity, the percentages add up to more than 100%.

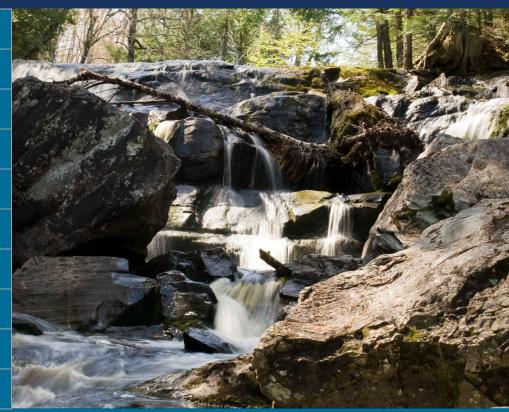
Top Reported Activity Groups: Winter (Dec-Mar)

Downhill Skiing/Snowboarding	37%
Snowmobiling	29%
Cross-Country Skiing	27%
Snowshoeing	14%
Northern Lights/Dark Sky Viewing	13%
Special Events	12%
Arts, Culture, & History	11%
Casinos	5%
Hunting & Fishing	5%
Biking	3%



Top Reported Activity Groups: Spring (Apr-May)

Arts, Culture, & History	35%
Waterfall Viewing	32%
Hiking	31%
Northern Lights/Dark Sky Viewing	28%
Special Events	16%
Rockhounding	14%
Beach Activities	12%
Off-Road Vehicles	11%
Skiing	10%
Hunting & Fishing	9%



Top Reported Activity Groups: Summer (Jun-Aug)



Hiking	68%
Waterfall Viewing	60%
Beach Activities	48%
Arts, Culture, & History	44%
Northern Lights/Dark Sky Viewing	30%
Rockhounding	32%
Camping	25%
Hunting & Fishing	23%
Off-Road Vehicles	18%
Paddlesports	16%

Top Reported Activity Groups: Fall (Sept-Nov)

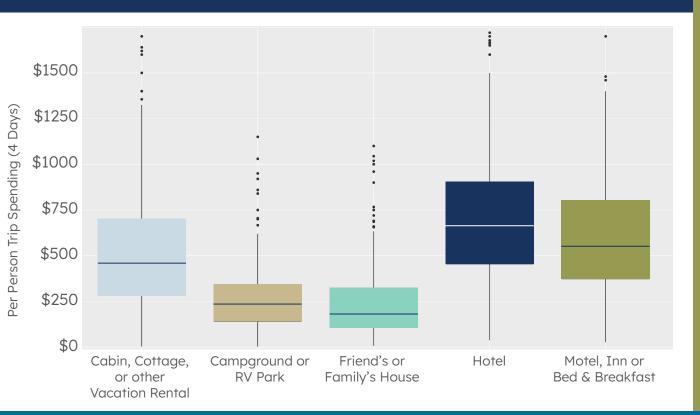


Top Reported Activity Groups by Trip Season

Winter (Dec-Mar)		Spring (Apr-May)		Summer (Jun-Aug)		Fall (Sept-Nov)	
Downhill Skiing/Snowboarding	37%	Arts, Culture, & History	35%	Hiking	68%	Hiking	61%
Snowmobiling	29%	Waterfall Viewing	32%	Waterfall Viewing	60%	Waterfall Viewing	55%
Cross-Country Skiing	27%	Hiking	31%	Beach Activities	48%	Off-Road Vehicles	39%
Snowshoeing	14%	Northern Lights/Dark Sky Viewing	28%	Arts, Culture, & History	44%	Northern Lights/Dark Sky Viewing	35%
Northern Lights/Dark Sky Viewing	13%	Special Events	16%	Northern Lights/Dark Sky Viewing	30%	Arts, Culture, & History	32%
Special Events	12%	Rockhounding	14%	Rockhounding	32%	Rockhounding	26%
Arts, Culture, & History	11%	Beach Activities	12%	Camping	25%	Beach Activities	22%
Casinos	5%	Off-Road Vehicles	11%	Hunting & Fishing	23%	Camping	19%
Hunting & Fishing	5%	Skiing	10%	Off-Road Vehicles	18%	Hunting & Fishing	18%
Biking	3%	Hunting & Fishing	9%	Paddlesports	16%	Special Events	8%

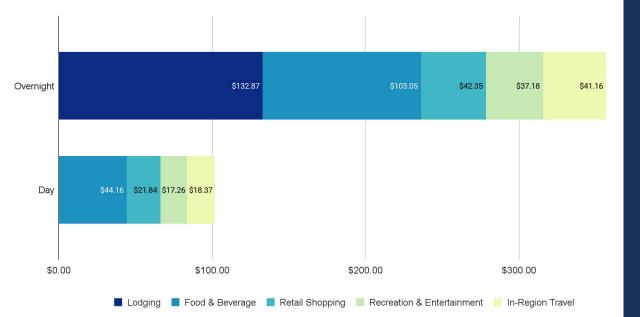
Spending by Overnight Visitors

BY SINGLE-REPORTED LODGING TYPE



person spending Per on overnight trips varies significantly based on lodging type. Travel parties staying at a friend or family member's house (median \$178.88) or at a campground or RV park (median \$232.84) generally report the lower trip spending than those staying at a cabin, cottage, or other vacation rental (median \$457.16) or at motel. bed & breakfast (median \$550). Travel Parties staying in a generally report the highest per person spending (median \$662).

Visitor Spending Patterns: Overnight & Day Trips

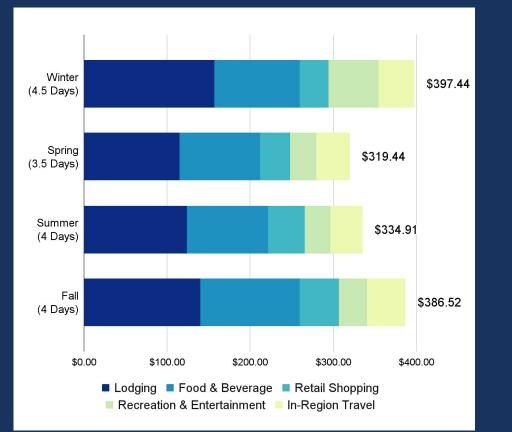


Median Overnight Trip Spending Per Person (4 Days)

\$356.61

Median Day Trip Spending Per Person

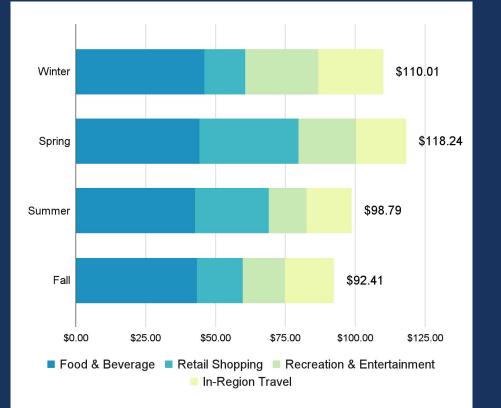
\$101.63



Overnight Trip Seasonal Spending

MEDIAN SPENDING PER PERSON

Median overnight trip spending per person varies throughout the year and is dependent on both daily spending and trip length figures. While there is some variation in the proportion of spending across the five major categories, generally 36-40% of dollars are spent on Lodging, 26-31% are spent on Food & Beverage, 9-13% on Retail Shopping, 9-15% on Recreation & Entertainment, and 11-13% on In-Region Travel.

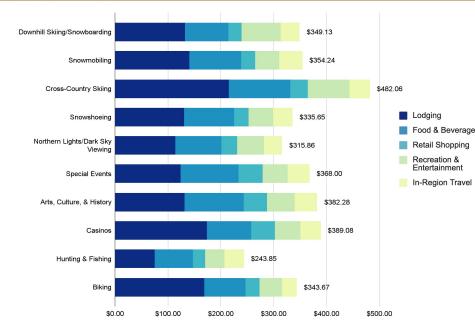


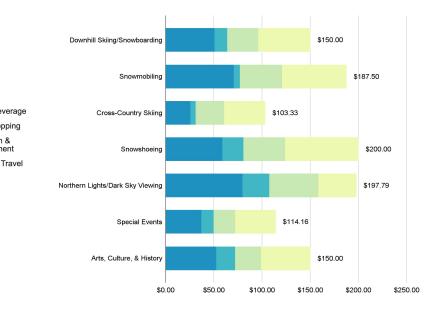
Day Trip Seasonal Spending

MEDIAN SPENDING PER PERSON

Median day trip spending per person varies throughout the year—with the highest rate of spending occurring in the Spring, and the lowest occurring in the Fall. The primary expense category for day trip visitors is Food & Beverage (38-47% of per person spending). Across the four seasons visitors spend on average between 13-30% of their dollars on Retail Shopping, 14-24% on Recreation & Entertainment, and 15-21% on In-Region Travel.

DAY TRIP SPENDING**



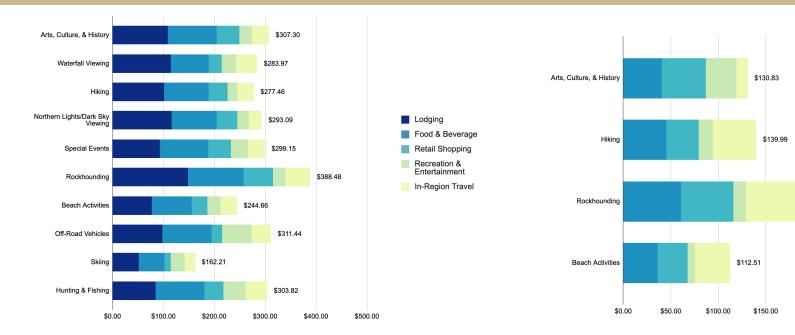


Winter Trip Spending BY TOP ACTIVITY GROUPS

* Winter overnight trip spending is estimated using a 4.25 day trip length.

** Day trip spending for Casinos, Hunting & Fishing, and Biking are not presented due to insufficient data.

DAY TRIP SPENDING**



Spring Trip Spending BY TOP ACTIVITY GROUPS

* Spring overnight trip spending is estimated using a 3.5 day trip length.

** Day Trip spending for Special Events, Off-Road Vehicles, Skiing, Hunting & Fishing, and Biking are not presented due to insufficient data. \$200.00

\$209.17

\$250.00

DAY TRIP SPENDING

\$147.69

\$162.50

\$162.50

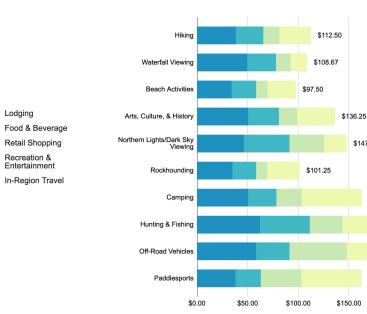
\$200.00

\$220.00

\$250.00

\$203.75





Summer Trip Spending

BY TOP ACTIVITY GROUPS

* Summer overnight trip spending is estimated using a 4 day trip length.

DAY TRIP SPENDING



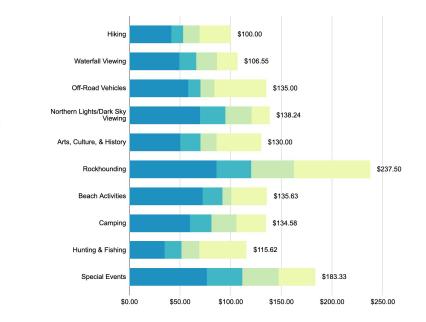
Lodging

Food & Beverage

Retail Shopping

In-Region Travel

Recreation & Entertainment

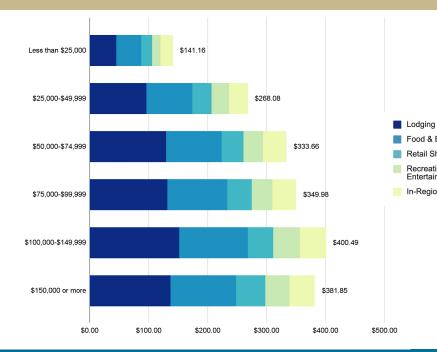


Fall Trip Spending

BY TOP ACTIVITY GROUPS

* Fall overnight trip spending is estimated using a 4 day trip length.

DAY TRIP SPENDING



Food & Beverage

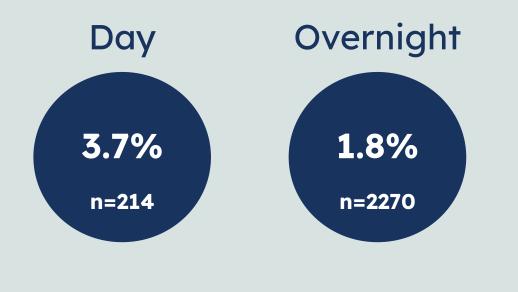
Retail Shopping Recreation & Entertainment In-Region Travel



Trip Spending

BY REPORTED HOUSEHOLD INCOME

*Overnight trip spending is estimated using the median trip length for each household income group. The median reported trip length for the Less than \$25,000 household income group is 3 days. The median reported trip length for all other household income groups is 4 days.





our EV on this trip because it has been difficult/impossible to reach Copper Harbor and the Porkies." ~ Survey Respondent

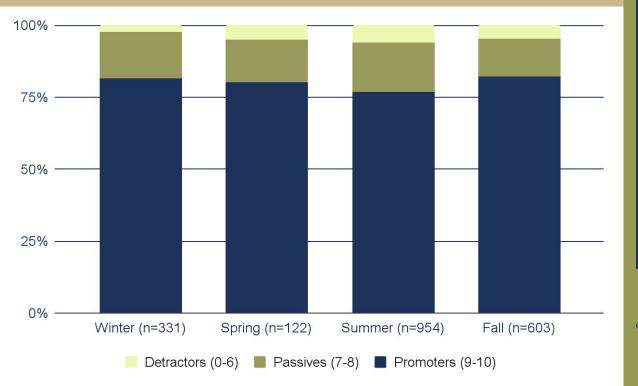
Electric Vehicle Usage

BY TRAVEL PARTIES TO THE WUP

Travel parties responding to the survey in Phase 2 (May-November) were asked to report if they traveled in a fully electric vehicle on their trip. Additionally, 3.7% of surveyed travel parties to the Keweenaw Peninsula during the same period report that increased EV charging infrastructure would increased the length or quality of their visit.

Net Promoter Score[™]

BY SEASON OF VISIT



Net Promoter Score (NPS[®]) is an indicator of satisfaction measuring the loyalty of individuals to a company, destination, or experience. Survey respondents were asked **"How likely are you to recommend visiting the Western Upper Peninsula to your friends?"** The score ranges from -100 to +100 and is calculated by subtracting the percentage of detractor travel parties (0-6) from the percentage of promoter travel parties (9-10).

The overall Net Promoter Score for the Western U.P. is **74.5** with variation across the visitor seasons ranging from **79.2** in Winter to **71.1** in the Summer. The NPS for the Spring season is **75.4** while for the Fall season it sits at **77.3**. The dip in NPS in the Summer months may be due in part to the impacts of the increased scale of tourism on visitor experience and resource availability; however, additional research is needed to further explore these patterns.

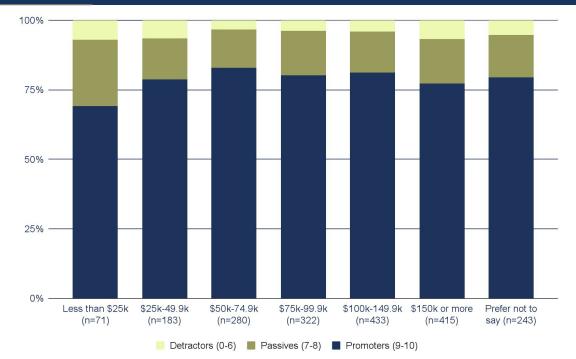
Source: 2023 Visitor Survey "Net Promoter®, NPS®, NPS Prism®, and the NPS-related emoticons are registered trademarks of Bain & Company, Inc., NICE Systems, Inc., and Fred Reichheld. Net Promoter Score SM and Net Promoter System SM are service marks of Bain & Company, Inc., NICE Systems, Inc., and Fred Reichheld." **36**

BY RESPONDENT HOUSEHOLD INCOME

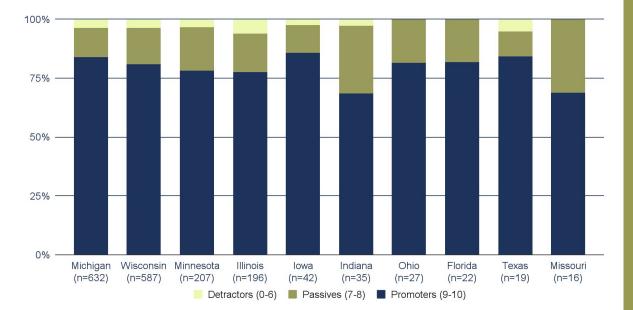
Net Promoter Score (NPS) is an indicator of satisfaction measuring the loyalty of individuals to a company, destination, or experience. Survey respondents were asked **"How likely are you to recommend visiting the Western Upper Peninsula to your friends?"** The score ranges from -100 to +100 and is calculated by subtracting the percentage of detractor travel parties (0-6) from the percentage of promoter travel parties (9-10).

Net Promoter Score varies across visitor demographics including reported household income. Across the 6 income brackets, NPS ranges from **62.0** (**<\$25K)** to **79.6** (**\$50K-74.9K)**.

HOUSEHOLD INCOME	NPS
Less than \$25K	62.0
\$25K-49.9K	72.1
\$50K-74.9K	79.6
\$75K-99.9K	76.4
\$100K-149.9K	77.1
\$150K or more	70.6
Prefer not to say	74.1



BY TOP VISITOR ORIGINS

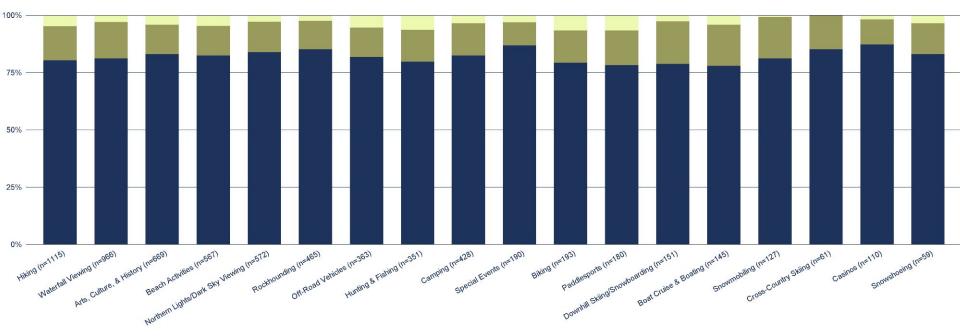


NPS varies by state of visitor origin but remains high across the top ten states. The highest NPS is recorded from visitors from Iowa (83.3), followed by Florida (81.8), and Ohio (81.5). Within the top 10 states the lowest NPS is recorded from visitors from Indiana (65.7), followed by Missouri (68.8), and Illinois (71.4). The remaining state origin NPS are Minnesota (74.9), Wisconsin (77.2), Texas (78.9), and Michigan (80.2). Additionally, Net Promoter Scores for the top Metropolitan Statistical Areas by reported zip code highlight additional variation in visitor satisfaction.

TOP REPORTED MSA's	NPS
Chicago-Naperville-Elgin, IL-IN-WI (n=174)	67.8
Detroit-Warren-Dearborn, MI (n=162)	77.8
Minneapolis-St. Paul-Bloomington, MN-WI (n=137)	73.0
Milwaukee-Waukesha-West Allis, WI (n=95)	78.9
Madison, WI (n=93)	84.9

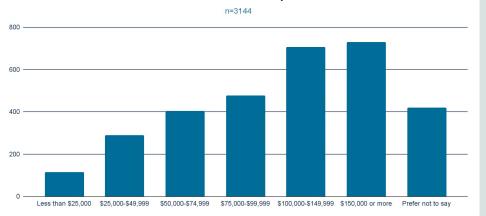
BY TOP ACTIVITY GROUPS

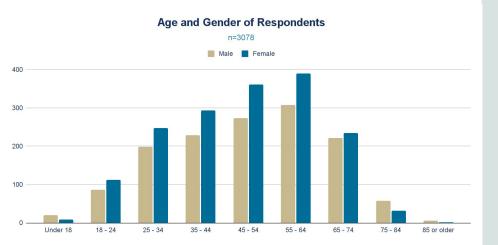
NPS varies slightly by major activity groups, suggesting that activity-specific concerns may exist and be affecting visitor experiences. Among the top activity groups, travel parties engaged in Casinos (85.5) and Cross-Country Skiing (85.2) have the highest NPS, while those engaged in Paddlesports (71.7) and Biking (72.5) have the lowest. Overall, travel parties engaged in all activities report high levels of satisfaction.



Detractors (0-6) Passives (7-8) Promoters (9-10)

Household Income of Respondents





Respondent Demographics

Respondents to the survey were asked to answer a select number of demographic questions to better understand the response sample. While these patterns do reflect a subset of the visitor population, they are not necessarily representative of it, nor of all of the visitors represented by the survey sample. Roughly **46%** of respondents report household incomes of **\$100K or more.** 52% of respondents identified themselves as Female while 44% identified as Male.

94% of respondents reported that they identified as white with the next largest portion of visitors reporting "Other" racial background.

The economic contribution of tourist spending is estimated through IMPLAN, a regional economic analysis software application. IMPLAN is based on Input-Output modeling, which is a type of applied economic analysis that tracks the interdependence among various producing and consuming industries of an economy. It measures the relationship between a given set of demands for final goods and services and the inputs required to satisfy those demands. IMPLAN uses annual, regional data to map buy-sell relationships to predict how specific economic changes will impact a given regional economy. In the case of tourism in the Western Upper Peninsula, it measures how spending impacts the local economy.

Data for the model include the overnight and day trip spending data gathered through the survey and 2022 visitation estimates, which match the most current annual economic dataset. For a detailed breakdown of the methodology, please see Appendix A.

The results indicate impacts at the direct, indirect, and induced levels. Direct impacts are those resulting directly from tourism spending. Indirect impacts are from the business-to-business purchases rippling into the economy. Induced impacts are the labor income impacts from employees represented in the direct and indirect effects.

DIRECT Impacts directly from tourist spending

INDIRECT Impacts from B2B purchases

INDUCED Impacts from labor income

DEFINITIONS

Direct Impacts Impacts directly from tourism spending. Estimated by EGI researchers based on Visitor Survey and Visitor Estimates.	7	Employment Employment includ of full-time, part-t seasonal employm proprietor employ	de a mixture ime and nent as well as	the cost of its in contribution to (termediate inpu GDP which inclu	etween an industry's total c ts. It is a measure of the des Labor Income, Other P duction and Imports (TOP)	roperty
Indirect Impacts Impacts from business to business purchases that stem	-	IMPACT	EMPLOYMENT	LABOR INCOME	VALUE ADDED	ουτρυτ	
from the direct industry impacts into the economy.		DIRECT					
into the economy.		INDIRECT					
Induced Impacts		- INDUCED					
Impacts from labor income from the employees in the direct and indirect industries.			oor Income			total value of an industry's	
Total Impacts Combination of Direct, Indirect, and Induced Impacts.		Lab	oor income captures emp npensation (wages and b I proprietor income.		production and is the measure of the value added plus intermediate expenditures. For Industries that do not hold inventory, output equals revenues (sales).		

WESTERN U.P.

IMPACT	EMPLOYMENT	LABOR INCOME	VALUE ADDED	Ουτρυτ
DIRECT	2,401	\$72.6 M	\$157.7 M	\$249.5 M
INDIRECT	303	\$11.7 M	\$19.3 M	\$49.5 M
INDUCED	355	\$14.9 M	\$31.6 M	\$58.8 M
TOTAL	3,060	\$99.2 M	\$208.6 M	\$357.8 M



6% LOCAL OUTPUT SUPPORTED by tourism

Sources: 2023 Visitor Survey, IMPLAN 2022 See Appendix A for more detail on our Impact Analysis Methodology

43

1,163 Lodging Jobs



13118Food &TransportationBeverage JobsJobs_____

Tourism Industries

DIRECT IMPACTS

These employment numbers represent the industries directly supported by tourism spending. Descriptions of these industries are in Appendix A. All jobs are presented as annual (lasting twelve months). Seasonal jobs are included as fractional jobs, meaning a job lasting 3 months equals 0.25 jobs.

1,043.9 Lodging FTEs



Recreation & Entertainment FTEs

10416.8Food &TransportationBeverage FTEsFTEs

Tourism Industries

DIRECT IMPACTS

These Full-Time Equivalent (FTE) employment numbers represent the industries directly supported by tourism spending after adjusted for industry specific part-time/full-time worker mixes. Descriptions of these industries are in Appendix A.

219.2

Retail FTEs

Top Indirect & Induced Industries Supported	Jobs
Food & Beverage	131
Healthcare & Social Services	79
Retail	64
Other Services	60
Finance & Insurance	45
Professional, Scientific, and Technical Services	43
Recreation & Entertainment	41
Real Estate and Rental and Leasing	40
Transportation & Warehousing	35
Administrative, Support, Waste Management and Remediation Services	28
TOTAL	566

Additional Industries Supported

INDIRECT & INDUCED IMPACTS

These employment numbers represent the industries strongly supported through the ripple effects of tourism spending. The top 10 industries listed here represent 86% of the induced & indirect effects (658 jobs) in the economy.

Tax Impacts REVENUE SUPPORTED BY TOURISM

The tax revenue supported by tourist spending is evaluated in four jurisdictions: sub-county general, sub-county special district, county and state levels. Like the overall economic impacts, these are also broken down into direct, indirect, and induced impacts, with the largest impacts at the direct level.

IMPACT	SUB COUNTY GENERAL	SUB COUNTY SPECIAL DISTRICT	COUNTY	STATE
DIRECT	\$3.8 M	\$7.6 M	\$4.5 M	\$23.8 M
INDIRECT	\$171 K	\$339 K	\$203 K	\$1.3 M
INDUCED	\$339 K	\$673 K	\$402 K	\$2.4 M
TOTAL	\$4.3 M	\$8.6 M	\$5.2 M	\$27.4 M

Sub-county general taxes refer to the impacts on cities or townships within the county, while sub-county special taxes refer to the impacts on the special districts such as police, fire, and schools. The majority of these taxes are property taxes with a few special assessments or "other" taxes. See Appendix A for more detailed definitions.

REGION	SQ. MILES (LAND)	
Houghton	1,009.1	

Houghton County OVERVIEW

	Houghton
Total population	37,414
White	94.50%
Black or African American	1.50%
American Indian and Alaska Native	1.40%
Asian	3.20%
Native Hawaiian and Other Pacific Islander	0.10%
Some Other Race	2.20%



Trip Details

3 Days

Median Length of Time Spent in Houghton County

4 Days

Median Length of Trip to Western U.P.

35% of Travel Parties

Report visiting or staying in at least one other county on their trip to the Western U.P.

75% of Represented Visitors

Report Leisure Travel as the purpose of their visit Top 3 Reported Visitor Origins

Michigan (40%) Wisconsin (23%) Minnesota (9%)

WINTER ACTIVITIES	%	SPRING ACTIVITIES	%
Cross-Country Skiing	38	Waterfall Viewing	43
Snowmobiling	20	Arts, Culture, & History	43
Special Events	15	Northern Lights/Dark Sky Viewing	39
Arts, Culture, & History	13	Hiking	34
Downhill Skiing/Snowboarding	13	Special Events	22

SUMMER ACTIVITIES		FALL ACTIVITIES	%
Hiking	66	Hiking	67
Waterfall Viewing	63	Waterfall Viewing	60
Arts, Culture, & History	53	Arts, Culture, & History	47
Beach Activities	51	Northern Lights/Dark Sky Viewing	39
Rockhounding	36	Rockhounding	38

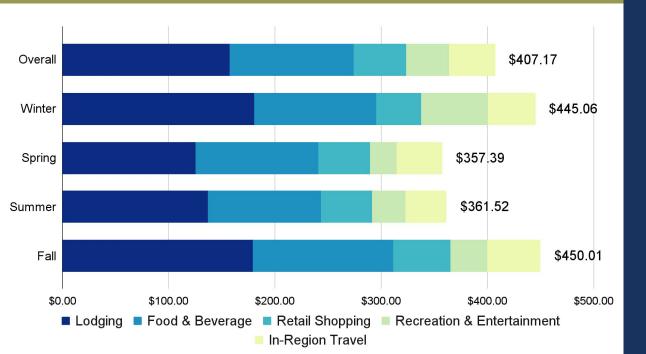
Top Seasonal Activities

IN HOUGHTON COUNTY

Reported activities were analyzed from the sample of visitors that reported staying in Houghton County for at least part of their overnight trip, or spending time in Houghton County as part of a day trip. The top five activity groups for each season are presented as a percentage of the seasonal visitor sample. As respondents could report more than one activity, the percentages may add up to more than 100%.

Overnight Trip Regional Spending

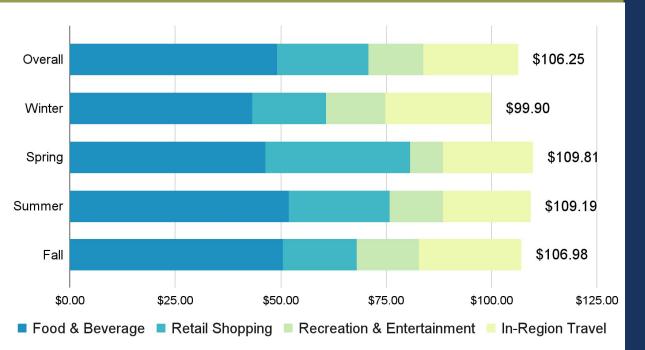
FOR VISITORS TO HOUGHTON COUNTY



Using a 4-day median trip length estimate we the regional trip per person spending at **\$407.17** with seasonal variation. Assuming spending is distributed equally across each day, and that spending occurs in the counties of the reported lodging areas, \$305.38 of the total spending would occur in Houghton County.

Day Trip Regional Spending

FOR VISITORS TO HOUGHTON COUNTY



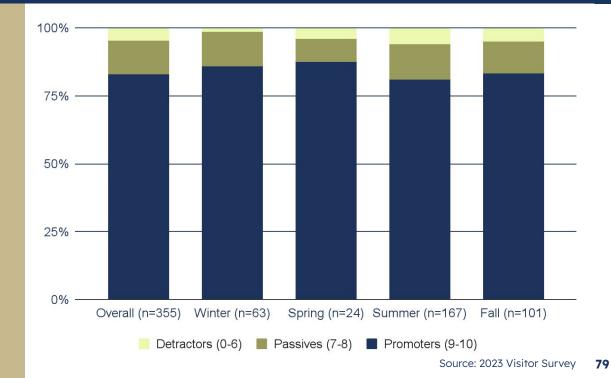
The median regional per person spending for day trip travelers is **\$106.25** with seasonal variation, as presented in the chart to the left. As 74% of day trip parties visiting Houghton County reported travelling to at least one other county on their trip, these figures should be interpreted as regional spending.

IN HOUGHTON COUNTY

Net Promoter Score (NPS) is an indicator of satisfaction measuring the loyalty of individuals to a company, destination, or experience. Survey respondents were asked **"How likely are you to recommend visiting the Western Upper Peninsula to your friends?"** The score ranges from -100 to +100 and is calculated by subtracting the percentage of detractor travel parties (0-6) from the percentage of promoter travel parties (9-10).

Net Promoter Score varies across the visitor seasons ranging from **84.1** in the Winter to **74.9** in the Summer. The NPS for the Spring season is **83.3**, while for the Fall season it sits at **78.2**.

OVERALL NPS 78.0

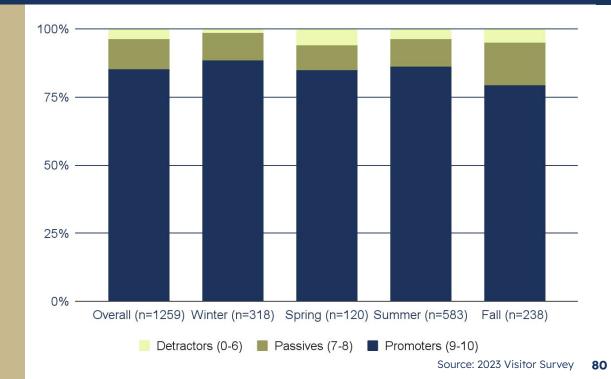


IN HOUGHTON COUNTY

In addition to the Net Promoter Score question reported on page 72, survey respondents reporting visiting the Keweenaw Peninsula were asked how likely **"I would recommend visiting the Keweenaw to my friends"**. The score ranges from -100 to +100 and is calculated by subtracting the percentage of detractor travel parties (0-6) from the percentage of promoter travel parties (9-10).

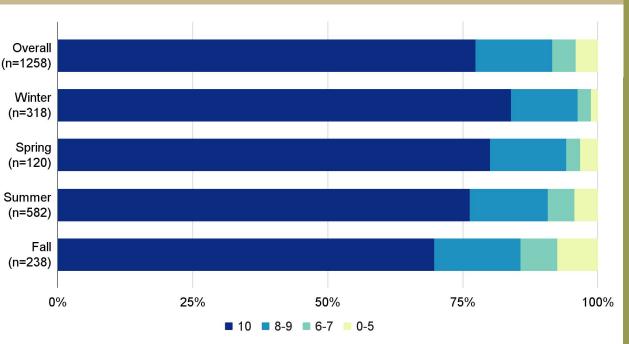
Net Promoter Score varies across the visitor seasons ranging from **86.8** in the Winter to **74.4** in the Fall. The NPS for the Spring season is **79.2**, while for the Summer season it sits at **82.5**.

OVERALL NPS **81.7**



Respondent Likeliness to Return

IN HOUGHTON COUNTY



Visitors to the Keweenaw Peninsula were asked to respond to the statement: **"I would plan on visiting the Keweenaw again in the future**" on a scale from 0 (Not Likely at All), to 10 (Extremely Likely).

In the sample of responses reporting at least one lodging or day trip area in Houghton County (n=1258), **77% of respondents selected Extremely Likely-10** with an additional 7% selecting 9. Only 4% of respondents selected a five or below on the scale.

Respondents traveling in the Winter more frequently selected Extremely Likely-10 (84%) than those in any other season.

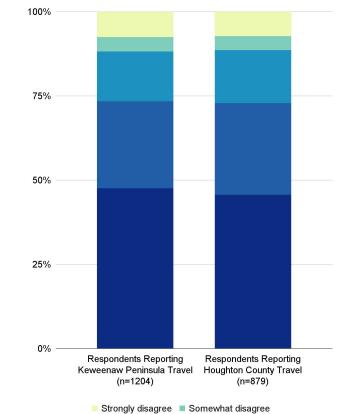
Visitor Perspectives on Sustainable Practices

IN HOUGHTON COUNTY

Respondents reporting at least one lodging area or day trip area in the Keweenaw Peninsula between May and November were asked to select the response that best described their level of agreement with the following statement:

"It is important to me that the destinations I visit implement sustainable practices to mitigate impacts of tourism on the local environment and community."

46% of respondents reporting at least one lodging or day trip area in Houghton County said that they **strongly agreed** with the statement, with an additional **27%** of respondents reporting that they **somewhat agreed** with the statement.



Neither agree nor disagree Somewhat agree Strongly agree

High Level Them	ies	Select Subcategories	
Transportation & Infrastructure	32%	Road Quality; Internet & Cell Service; EV Chargers; Rest Stops & Bathrooms; Parking; Transportation Options & Availability	
Nothing	28%	Nothing is missing; Concern of Over Development; Impacts on Environment & Communities	
Food & Beverage	17%	Variety; Quantity; Open Hours; Options for Dietary Restrictions; Affordability	
Cultural, Natural Heritage & Recreation	12%	Recreation Rentals; Historic Preservation & Interpretation; Natural Preservation; Tours & Events; Accessibility	
Accommodations	12%	Variety; Quantity; Affordability; Accessibility	
Retail Shopping & Services	7%	Retail Variety; Open Hours & Season; Gear Shops; Local Businesses	
Information & Signage	7%	Regional Guidebooks & Directories; Improved Street, Trail & Attraction Signage; Accurate Online Information	

Visitor Recommendations IN THE KEWEENAW PENINSULA

Phase 2 respondents (May-November) were asked "What services, experiences or accommodations are missing in the Keweenaw that would increase the length or quality of your visit?" (n=723). Responses were coded inductively into high level themes and subcategories with the top seven high level themes reported here. The responses illustrate both visitor desires for the region to maintain its rural wilderness identity (Nothing- 28%; Cultural, Natural Heritage & Recreation- 12%), and increased development of Infrastructure & Transportation (32%) options, as well as Lodging (12%), Food & Beverage (17%), and Retail (7%) sectors. Visitors also provided a variety of recommendations around improving online information about the region and wayfinding resources in the area. An expanded table of recommendations can be found in Appendix B.

The economic contribution tourist spending is estimated through IMPLAN, a regional economic analysis software application. IMPLAN is based on Input-Output modeling, which is a type of applied economic analysis that tracks the interdependence among various producing and consuming industries of an economy. It measures the relationship between a given set of demands for final goods and services and the inputs required to satisfy those demands. IMPLAN uses annual, regional data to map buy-sell relationships to predict how specific economic changes will impact a given regional economy. In the case of tourism in the Western Upper Peninsula, it measures how spending impacts the local economy.

Data for the model include the overnight and day trip spending data gathered through the survey and 2022 visitation estimates, which match the most current annual economic dataset. For a detailed breakdown of the methodology, please see Appendix A.

The results indicate impacts at the direct, indirect, and induced levels. Direct impacts are those resulting directly from tourism spending. Indirect impacts are from the business-to-business purchases rippling into the economy. Induced impacts are the labor income impacts from employees represented in the direct and indirect effects.

DIRECT Impacts directly from tourist spending

INDIRECT Impacts from B2B purchases

INDUCED Impacts from labor income

DEFINITIONS

Direct Impacts Impacts directly from tourism spending. Estimated by EGI researchers based on Visitor Survey and Visitor Estimates.	7	Employment Employment includ of full-time, part-t seasonal employm proprietor employ	de a mixture ime and nent as well as	the cost of its in contribution to (termediate inpu GDP which inclu	etween an industry's total c ts. It is a measure of the des Labor Income, Other P duction and Imports (TOP)	roperty
Indirect Impacts Impacts from business to business purchases that stem	_	IMPACT	EMPLOYMENT	LABOR INCOME	VALUE ADDED	ουτρυτ	
from the direct industry impacts into the economy.		DIRECT					
into the economy.		INDIRECT					
Induced Impacts		- INDUCED					
Impacts from labor income from the employees in the direct and indirect industries.			oor Income			total value of an industry's	
Total Impacts Combination of Direct, Indirect, and Induced Impacts.		Lab	oor income captures emp npensation (wages and b I proprietor income.		production and is the measure of the value added plus intermediate expenditures. For Industries that do not hold inventory, output equals revenues (sales).		

HOUGHTON COUNTY

IMPACT	EMPLOYMENT	LABOR INCOME	VALUE ADDED	Ουτρυτ
DIRECT	755	\$21.5 M	\$49.4 M	\$79.4 M
INDIRECT	99	\$3.6 M	\$6.2 M	\$15.2 M
INDUCED	148	\$6.4 M	\$12.6 M	\$23.2 M
TOTAL	1,002	\$31.5 M	\$68.3 M	\$117.8 M



4% LOCAL OUTPUT **SUPPORTED** by tourism

Sources: 2023 Visitor Survey, IMPLAN 2022 See Appendix A for more detail on our Impact Analysis Methodology 86 **394** Lodging Jobs



45 Food & Beverage Jobs 87TransportationJobs

Tourism Industries

DIRECT IMPACTS, HOUGHTON CO.

These employment numbers represent the industries directly supported by tourism spending. Descriptions of these industries are in Appendix A. All jobs are presented as annual (lasting twelve months). Seasonal jobs are included as fractional jobs, meaning a job lasting 3 months equals 0.25 jobs.

353.7 Lodging FTEs



35.781.2Food &TransportationBeverage FTEsFTEs

Tourism Industries

DIRECT IMPACTS, HOUGHTON CO.

These Full-Time Equivalent (FTE) employment numbers represent the industries directly supported by tourism spending after adjusted for industry specific part-time/full-time worker mixes. Descriptions of these industries are in Appendix A.

Top Indirect & Induced Industries Supported	Jobs
Food & Beverage	52
Healthcare & Social Assistance	40
Retail	25
Other Services (except Public Administration)	19
Real Estate and Rental and Leasing	16
Finance & Insurance	16
Administrative, Support, Waste Management and Remediation Services	15
Recreation & Entertainment	14
Professional, Scientific, and Technical Services	13
Transportation and Warehousing	11
TOTAL	221

Additional Industries Supported

INDIRECT & INDUCED IMPACTS

These employment numbers represent the industries strongly supported through the ripple effects of tourism spending. The top 10 industries listed here represent 90% of of the induced & indirect effects (247 jobs) in the economy.

Tax Impacts REVENUE SUPPORTED BY TOURISM

The tax revenue supported by tourist spending is evaluated in four jurisdictions: sub-county general, sub-county special district, county and state levels. Like the overall economic impacts, these are also broken down into direct, indirect, and induced impacts, with the largest impacts at the direct level.

IMPACT	SUB COUNTY GENERAL	SUB COUNTY SPECIAL DISTRICT	COUNTY	STATE
DIRECT	\$1.1 M	\$2.5 M	\$1.1 M	\$7.7 M
INDIRECT	\$68 K	\$152K	\$70 K	\$522 K
INDUCED	\$124 K	\$278 K	\$128 K	\$963 K
TOTAL	\$1.3 M	\$2.9 M	\$1.3 M	\$9.1 M

Sub-county general taxes refer to the impacts on cities or townships within the county, while sub-county special taxes refer to the impacts on the special districts such as police, fire, and schools. The majority of these taxes are property taxes with a few special assessments or "other" taxes. See Appendix A for more detailed definitions.

	Keweenaw
Total population	2,088
White	99.60%
Black or African American	0.30%
American Indian and Alaska Native	2.30%
Asian	0.00%
Native Hawaiian and Other Pacific Islander	0.00%
Some Other Race	1.00%

- - -

SQ. MILES (LAND)

Keweenaw County

540.1

OVERVIEW

REGION Keweenaw



Trip Details

3 Days

Median Length of Time Spent in Keweenaw County

5 Days

Median Length of Trip to Western U.P.

57% of Travel Parties

Report visiting or staying in at least one other county on their trip to the Western U.P.

90% of Represented Visitors

Report Leisure Travel as the purpose of their visit Top 3 Reported Visitor Origins

Michigan (46%) Wisconsin (20%) Minnesota (6%)

WINTER ACTIVITIES	%	SPRING ACTIVITIES	%
Downhill Skiing/Snowboarding	66	Waterfall Viewing	53
Snowmobiling	17	Biking	44
Northern Lights/Dark Sky		Hiking	44
Viewing		Northern Lights/Dark Sky	
Cross-Country Skiing	14	Viewing	35
Snowshoeing	11	Arts, Culture, & History	26

SUMMER ACTIVITIES	%	FALL ACTIVITIES	%
Hiking	72	Hiking	76
Waterfall Viewing	66	Waterfall Viewing	64
Arts, Culture, & History	54	Arts, Culture, & History	46
Beach Activities	45	Northern Lights/Dark Sky Viewing	44
Rockhounding	41	Camping	37

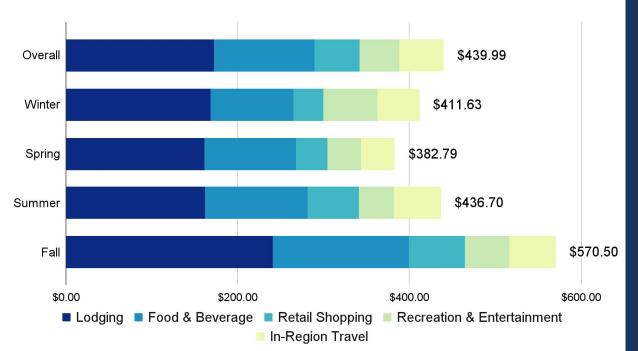
Top Seasonal Activities

IN KEWEENAW COUNTY

Reported activities were analyzed from the sample of visitors that reported staying in Keweenaw County for at least part of their overnight trip, or spending time in Keweenaw County as part of a day trip. The top five activity groups for each season are presented as a percentage of the seasonal visitor sample. As respondents could report more than one activity, the percentages may add up to more than 100%.

Overnight Trip Regional Spending

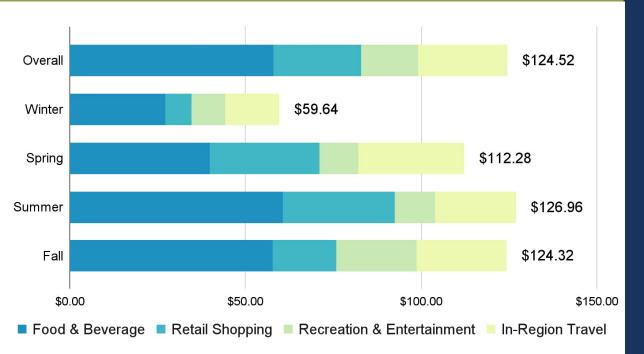
FOR VISITORS TO KEWEENAW COUNTY



Using a 5-day median trip length we estimate the regional trip per person spending at **\$439.99** with seasonal variation. Assuming spending is distributed equally across each day and that spending occurs in the counties of the reported lodging areas, \$264 of the total spending would occur in Keweenaw County.

Day Trip Regional Spending

FOR VISITORS TO KEWEENAW COUNTY



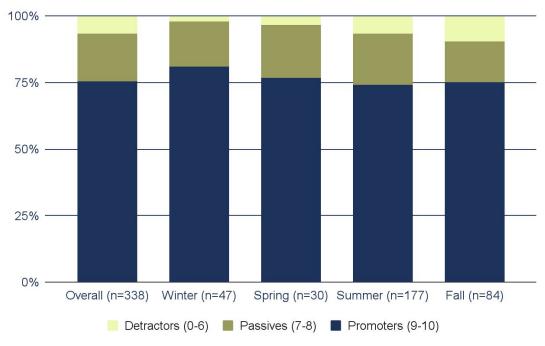
The median regional per person spending for day trip travelers is **\$124.52** with seasonal variation, as presented in the chart to the left. As 83% of day trip parties visiting Keweenaw County reported travelling to at least one other county on their trip, these figures should be interpreted as regional spending.

IN KEWEENAW COUNTY

Net Promoter Score (NPS) is an indicator of satisfaction measuring the loyalty of individuals to a company, destination, or experience. Survey respondents were asked **"How likely are you to recommend visiting the Western Upper Peninsula to your friends?"** The score ranges from -100 to +100 and is calculated by subtracting the percentage of detractor travel parties (0-6) from the percentage of promoter travel parties (9-10).

Net Promoter Score varies across the visitor seasons ranging from **83.8** in the Fall to **80.4** in the Summer. The NPS for the Spring season is **82.4**, while for the Winter season it sits at **81.3**.

OVERALL NPS **81.6**



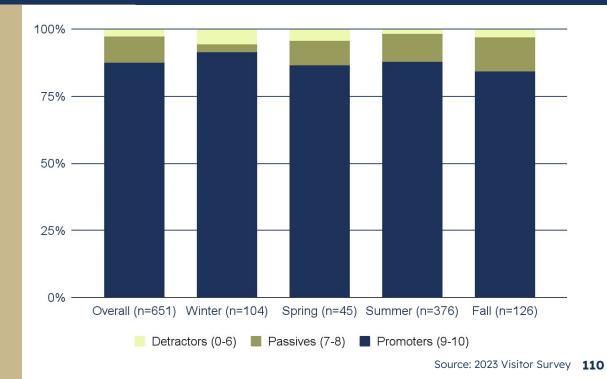
Source: 2023 Visitor Survey 109

IN KEWEENAW COUNTY

In addition to the Net Promoter Score question reported on page 72, survey respondents reporting visiting the Keweenaw Peninsula were asked how likely **"I would recommend visiting the Keweenaw to my friends"**. The score ranges from -100 to +100 and is calculated by subtracting the percentage of detractor travel parties (0-6) from the percentage of promoter travel parties (9-10).

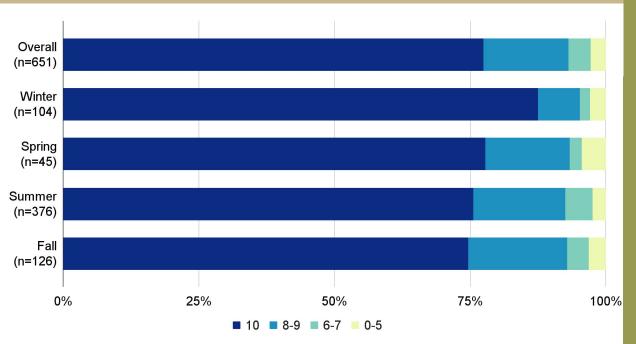
Net Promoter Score varies across the visitor seasons ranging from **86.2** in the Summer to **81.0** in the Fall. The NPS for the Spring season is **82.2**, while for the Winter season it sits at **85.6**.

OVERALL NPS 84.8



Respondent Likeliness to Return

IN KEWEENAW COUNTY



Visitors to the Keweenaw Peninsula were asked to respond to the statement: **"I would plan on visiting the Keweenaw again in the future**" on a scale from 0 (Not Likely at All), to 10 (Extremely Likely).

In the sample of responses reporting at least one lodging or day trip area in Keweenaw County (n=651), **77% of respondents selected Extremely Likely-10** with an additional 8% selecting 9. Less than 3% of respondents selected a five or below on the scale.

Respondents traveling in the Winter more frequently selected Extremely Likely-10 (87%) than those in any other season.

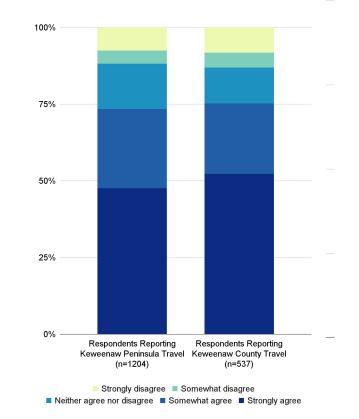
Visitor Perspectives on Sustainable Practices

IN KEWEENAW COUNTY

Respondents reporting at least one lodging area or day trip area in the Keweenaw Peninsula between May and November were asked to select the response that best described their level of agreement with the following statement:

"It is important to me that the destinations I visit implement sustainable practices to mitigate impacts of tourism on the local environment and community."

52% of respondents reporting at least one lodging or day trip area in Keweenaw County said that they **strongly agreed** with the statement, with an additional **23%** of respondents reporting that they **somewhat agreed** with the statement.



High Level Themes		Select Subcategories
Transportation & Infrastructure	32%	Road Quality; Internet & Cell Service; EV Chargers; Rest Stops & Bathrooms; Parking; Transportation Options & Availability
Nothing	28%	Nothing is missing; Concern of Over Development; Impacts on Environment & Communities
Food & Beverage	17%	Variety; Quantity; Open Hours; Options for Dietary Restrictions; Affordability
Cultural, Natural Heritage & Recreation	12%	Recreation Rentals; Historic Preservation & Interpretation; Natural Preservation; Tours & Events; Accessibility
Accommodations	12%	Variety; Quantity; Affordability; Accessibility
Retail Shopping & Services	7%	Retail Variety; Open Hours & Season; Gear Shops; Local Businesses
Information & Signage	7%	Regional Guidebooks & Directories; Improved Street, Trail & Attraction Signage; Accurate Online Information

Visitor Recommendations IN THE KEWEENAW PENINSULA

Phase 2 respondents (May-November) were asked "What services, experiences or accommodations are missing in the Keweenaw that would increase the length or quality of your visit?" (n=723). Responses were coded inductively into high level themes and subcategories with the top seven high level themes reported here. The responses illustrate both visitor desires for the region to maintain its rural wilderness identity (Nothing- 28%; Cultural, Natural Heritage & Recreation- 12%), and increased development of Infrastructure & Transportation (32%) options, as well as Lodging (12%), Food & Beverage (17%), and Retail (7%) sectors. Visitors also provided a variety of recommendations around improving online information about the region and wayfinding resources in the area. An expanded table of recommendations can be found in Appendix B.

Economic Impact Analysis

The economic contribution tourist spending is estimated through IMPLAN, a regional economic analysis software application. IMPLAN is based on Input-Output modeling, which is a type of applied economic analysis that tracks the interdependence among various producing and consuming industries of an economy. It measures the relationship between a given set of demands for final goods and services and the inputs required to satisfy those demands. IMPLAN uses annual, regional data to map buy-sell relationships to predict how specific economic changes will impact a given regional economy. In the case of tourism in the Western Upper Peninsula, it measures how spending impacts the local economy.

Data for the model include the overnight and day trip spending data gathered through the survey and 2022 visitation estimates, which match the most current annual economic dataset. For a detailed breakdown of the methodology, please see Appendix A.

The results indicate impacts at the direct, indirect, and induced levels. Direct impacts are those resulting directly from tourism spending. Indirect impacts are from the business-to-business purchases rippling into the economy. Induced impacts are the labor income impacts from employees represented in the direct and indirect effects.

DIRECT Impacts directly from tourist spending

INDIRECT Impacts from B2B purchases

INDUCED Impacts from labor income

Economic Impact Analysis

DEFINITIONS

Direct Impacts Impacts directly from tourism spending. Estimated by EGI researchers based on Visitor Survey and Visitor Estimates.	۱ ך	Employment Employment incluc of full-time, part-ti seasonal employm proprietor employm	ime and nent as well as	Value Added Value added is the difference between an industry's total output and the cost of its intermediate inputs. It is a measure of the contribution to GDP which includes Labor Income, Other Property Income (OPI), and Taxes on Production and Imports (TOPI).				
Indirect Impacts Impacts from business to business purchases that stem	1	IMPACT	EMPLOYMENT	LABOR INCOMI		ουτρυτ		
from the direct industry impacts into the economy.		DIRECT						
into the economy.		INDIRECT						
Induced Impacts		INDUCED						
Impacts from labor income from the employees in the direct and indirect industries.		TOTAL				total value of an		
Total Impacts Combination of Direct, Indirect, and Induced Impacts.		Lab	oor Income or income captures emp npensation (wages and b I proprietor income.	production and is the measure of the value added plus intermediate expenditures. For Industries that do not hold inventory, output equals revenues (sales).				

Economic Impact Analysis

KEWEENAW COUNTY

IMPACT	EMPLOYMENT	LABOR INCOME	VALUE ADDED	Ουτρυτ
DIRECT	441	\$18 M	\$34 M	\$53 M
INDIRECT	30	\$1 M	\$1.5 M	\$4 M
INDUCED	23	\$611 K	\$2 M	\$4 M
TOTAL	495	\$20 M	\$38 M	\$61 M

65% LOCAL JOBS SUPPORTED by tourism

52% LOCAL OUTPUT SUPPORTED by tourism

Sources: 2023 Visitor Survey, IMPLAN 2022 See Appendix A for more detail on our Impact Analysis _______Methodology **116**



Tourism Industries

DIRECT IMPACTS, KEWEENAW CO.

These employment numbers represent the industries directly supported by tourism spending. Descriptions of these industries are in Appendix A. All jobs are presented as annual (lasting twelve months). Seasonal jobs are included as fractional jobs, meaning a job lasting 3 months equals 0.25 jobs.

230 Lodging FTEs 7857Recreation &
Entertainment FTEsRetail FTEs

21.5.94Food &TransportationBeverage FTEsFTEs_____

Tourism Industries

DIRECT IMPACTS, KEWEENAW CO.

These Full-Time Equivalent (FTE) employment numbers represent the industries directly supported by tourism spending after adjusted for industry specific part-time/full-time worker mixes. Descriptions of these industries are in Appendix A.

Top Indirect & Induced Industries Supported	Jobs
Food & Beverage	20
Professional, Scientific, and Technical Services	5
Retail	5
Recreation & Entertainment	4
Healthcare & Social Assistance	3
Administrative, Support, Waste Management and Remediation Services	3
Finance & Insurance	3
Other Services (except Public Administration)	3
Transportation and Warehousing	2
Information	2
TOTAL	50

Additional Industries Supported

INDIRECT & INDUCED IMPACTS

These employment numbers represent the industries strongly supported through the ripple effects of tourism spending. The top 10 industries listed here represent 88% of the induced & indirect effects (53 jobs) in the economy.

Tax Impacts

REVENUE SUPPORTED BY TOURISM

The tax revenue supported by tourist spending is evaluated in four jurisdictions: sub-county general, sub-county special district, county and state levels. Like the overall economic impacts, these are also broken down into direct, indirect, and induced impacts, with the largest impacts at the direct level.

IMPACT	SUB COUNTY GENERAL	SUB COUNTY SPECIAL DISTRICT	COUNTY	STATE
DIRECT	\$1 M	\$197 K	\$1.5 M	\$3.6 M
INDIRECT	\$21 K	\$4 K	\$31 K	\$88 K
INDUCED	\$46 K	\$9 K	\$68 K	\$150 K
TOTAL	\$1.1 M	\$210 K	\$1.6 M	\$3.8 M

Sub-county general taxes refer to the impacts on cities or townships within the county, while sub-county special taxes refer to the impacts on the special districts such as police, fire, and schools. The majority of these taxes are property taxes with a few special assessments or "other" taxes. See Appendix A for more detailed definitions.

* IMPLAN's modeling estimates that tourism spending in Keweenaw County contributes substantially to tax revenues. However, a significant portion of Keweenaw county's land used for lodging (camping) and recreation is not taxable at regular ad valorem rates/basis. Therefore, the model was adjusted to account for this by reducing estimated tax contributions from lodging (hotel, motel, camping) and recreation revenue by 41% (except for state sales tax), which corresponds to the estimated percent of lodging on public campgrounds. This is a conservative approach, however, appropriate given the unique nature of Keweenaw County.

SURVEY DESIGN & DATA COLLECTION

Survey instruments were designed in consultation with WUPPDR and Visit Keweenaw staff and built on Qualtrics using logic-based question progression. The aim of the survey instruments was to collect primary data to assist in responding to the following questions:

- 1. What are the economic impacts of tourism in the Western U.P.?
- 2. What are the key tourism industries in the Western U.P. and how do they vary across the region?
- 3. What kinds of visitors travel to the Western U.P., how do they engage with the region, and how satisfied are they?
 - a. Demographic Data
 - b. Trip Details (Lodging/Day Trip Areas; Length of Stay; Party Size; Activities; Spending Patterns, etc.)
 - c. Visitor Satisfaction

The survey team employed an iterative survey design process to improve ease of response and increase the granularity of the data collected. Phase 1 survey instruments were developed between December 2022 and January 2023 and launched in January 2023. Two distinct survey instruments were created during this phase—one focused on the Keweenaw Peninsula (Houghton & Keweenaw counties) and one focused on the whole Western U.P.—with similar survey structure and questions. Printed materials were developed by the project team and distributed to tourism related businesses and other locations around the region by project staff and regional stakeholders. Printed materials included a QR code and shortened URL that directed visitors to the survey instrument on Qualtrics.

A complementary survey instrument was developed between February and March to collect responses from individuals who had visited the region recently (within 1 year of responding to the survey) but whose trips had already concluded. These questions were modeled off of the in-person survey instruments with changes to the language tense. Additionally, this survey instrument merged the two in-person instruments through additional logic-based question progression. This secondary survey instrument was distributed through at least 13 channels including email newsletters from local CVBs and visitor centers, activity-based groups, special event registration lists, and social media accounts for tourism related organizations.

Between March and April the research team developed a second iteration of the in-person survey instrument that included additional questions and updated seasonal activity groups. This Phase 2 survey instrument included the updated logic-based question progression to allow for distribution of a single in-person survey. Additionally, the the complementary email/social media survey instrument was updated

SURVEY DESIGN & DATA COLLECTION

to reflect these changes. New printed materials were created and distributed across the region by project staff and regional stakeholders. Phase 2 survey instruments were launched in May 2023 and collected responses through the beginning of November 2023.

In addition to the printed materials and digital distribution, 5 tablets with the survey instrument were installed in visitor centers across the region during the data collection period: Ironwood Chamber of Commerce Visitor Center; Iron County Economic Chamber Alliance Visitor Center; Porcupine Mountains State Park Visitor Center (Ski Chalet), Wakefield Historical Museum, Visit Keweenaw Calumet Visitor Center.

Across the multiple survey instruments discussed above the project team collected 4,756 responses. After the data collection period closed, responses were assessed across four main criteria: progress, completeness, origin of visitor, trip destination.

 Progress: Given the varying length of survey instruments, different progress thresholds were applied for each instrument. Phase 1 in-person Western U.P ≥ 50; Phase 1 in-person Keweenaw Peninsula ≥ 48; Email/Social Media & Phase 2 ≥ 40

- Completeness: As only a select number of questions required a response to proceed with the survey, completeness of the records was also assessed to ensure that responses include key data including Destination(s), Duration of Trip, Party Size, Purpose of Trip and Activities
- Origin of Visitor: A response was considered invalid if all destinations (lodging areas or day trip areas) were located within the same county as an individual's home location (based on Zip Code). Responses where an individual's trip is partially contained within their home county were marked for further review and removed from regional level analysis
- Trip Destination: A response was considered invalid if all destinations (lodging areas & day trip areas) were located outside of the Western U.P. region. Responses where an individual's trip was partially located outside of the Western U.P. region were marked for further review and care was taken to adjust response data to account for out of region travel

After assessing the responses across the four criteria, the survey sample contained 3,334 valid responses. After assessing the validity of responses the sample underwent additional processing and cleaning to standardize the data before analysis.

SURVEY DATA ANALYSIS

The research team performed exploratory data analysis methods on the survey sample and various sample segments to define the range, distribution, representative statistics, and outliers for variables across the dataset, and identified relationships between key variables. Response data was analyzed both at the trip party and visitor levels for the majority of variables. Analysis was undertaken in Google Sheets, Google Looker Studio, and RStudio with a range of tables and plots created.

NUMERICAL VARIABLES

For continuous variables (Length of Trip, Party Size, Trip Spending etc.), min, lower, middle, and upper quartiles, max, median and standard deviation were calculated. Graphs and charts including box plots and histograms were plotted to visualize the distribution of observations and identify outliers. In almost all cases the median was found to be the most representative figure of the sample. For variables including Length of Trip and Party Size, continuous variables were binned into mutually exclusive categories for further analysis of identified visitor segments. For example, the variable Travel Party size was grouped into three categories-Small (\leq 3), Medium (4-6), and Large (7+)-to better segment and visualize the types of travel parties visiting the region and their frequency in the sample.

Reported trip spending was standardized to average per person per day spending for each reported trip across the five spending categories (Lodging, Food & Beverage, Retail Shopping, Recreation & Entertainment, & Travel Spending). Median total per person per day spending was selected in all cases as the most representative figure. Across each of the five spending categories the research team represented the reported dollar figures as a percentage of total reported spending and calculated the average distribution of spending accordingly. With median spending per person per day and average spending distribution figures produced, the team produced estimated per person per day spending figures for each of the five categories. The travel spending figure was divided in half to account for travel costs assumed to be incurred outside of the Western U.P. (Clouse, 2019).

SURVEY DATA ANALYSIS

Per person per day spending figures were then multiplied by the median length of trip to produce estimated per person trip spending figures. Analysis of visitor spending was undertaken at the regional and county levels and was segmented by season of trip, trip type and reported activity groups.

Net Promoter Score[®] and similarly structured questions allow respondents to report the likelihood that they will do "x" on a scale from 0 (Not Likely at All) to 10 (Extremely Likely). All NPS[®] style questions were analyzed at the travel party level. Responses were categorized into Promoters (9-10), Passives (7-8), and Detractors (0-6) groups and the frequency of each group was calculated. The research team then calculated the Net Promoter Score by subtracting the percentage of Detractors from the percentage of Promoters, multiplying the result by 100 and rounding to the nearest tenth. The sample was segmented by season of visit, county, activity group, origin of travel party, and reported household income and individual Net Promoter Scores were calculated for each group. While the segmentation of the sample by season of visit, origin of travel party, and reported household income results in mutually exclusive subsets, county and activity group segmentation results in overlapping segments due to the nature of the data structure. Respondent Likeliness to Return responses for visitors to the Keweenaw Peninsula, while built on a 0-10 NPS style scale, was not grouped into Promoters, Passives, and Detractors and instead the frequency of each number was calculated.

"Net Promoter[®], NPS[®], NPS Prism[®], and the NPS-related emoticons are registered trademarks of Bain & Company, Inc., NICE Systems, Inc., and Fred Reichheld. Net Promoter Score SM and Net Promoter System SM are service marks of Bain & Company, Inc., NICE Systems, Inc., and Fred Reichheld."

CATEGORICAL & OPEN TEXT VARIABLES

Demographic questions including Age, Gender, Race & Ethnicity and Household Income were asked for the survey respondent only, rather than the entire travel party, and are therefore not generalizable to the entire sample of visitors represented by the survey responses. The frequency of each response option was

SURVEY DATA ANALYSIS

calculated and column charts were created to visualize distribution patterns.

Reported park visitation, purpose of visit, and reported activities questions all allowed for multi-selection responses and were analyzed as percentages of the represented visitor sample with the sum totalling to more than 100%. As the reported activity question allowed for open-text responses, all text responses were first reviewed and coded using a standardized two tiered structure to allow for proper analysis. The data was segmented by season of visit (Reported park visitation), county of visit (purpose of visit), or both (reported activities) with the percentages relative to the underlying sample of visitors represented.

Questions regarding electric vehicle usage and visitor perspectives on sustainable practices allowed for only single selection and the selection rate for each response option was calculated and presented as a percentage of travel parties or respondents in the sample. Electric vehicle usage was segmented by trip type while visitor perspectives on sustainable practices data was segmented by county of trip

723 open-text responses to the question "What services, experiences or accommodations are missing in the Keweenaw that would increase the length or quality of your visit?" were coded in Qualtrics Text iQ using an inductive coding approach. Responses were coded once before the code structure (High level themes and sub-themes) were assessed and refined. Responses were then reviewed with additional codes assigned as necessary. All responses received at least one code. Code frequency is presented as a percentage of responses to the question. See Appendix B for a detailed table of identified high level themes, subthemes and frequencies.

GEOGRAPHICAL VARIABLES

Visitor origin data was collected through reported respondent zip codes and country, province, city, and or postal code for international visitors. Visitor origins by zip code were visualized in Google Looker Studio and were scaled by the reported size of each

SURVEY DATA ANALYSIS

travel party. The research team utilized a zip code geolocation database to map reported zip codes to US states and counties, MSAs, and Michigan Prosperity Regions, and analyzed visitor origins using these groupings. All visitor origin figures are presented as portions of the represented visitor sample assuming that all visitors in a travel party share the same zip code as the respondent.

Reported lodging & day trip areas were standardized and geolocated to the central point of the defined area. The frequency of each area, presented as the percentage of represented day or overnight visitors that reported visiting or staying in the area, was calculated and mapped using bubble maps in Google Looker Studio. All day trip and lodging areas were assigned to their corresponding county which served as the basis for county level segmentation discussed in the sections above. For select areas that span two counties, (e.g. Bergland/Marenisco/Lake Gogebic), the area was assigned to both (Gogebic & Ontonagon) and days spent in the lodging area were split equally between the two counties.

SECONDARY DATA COLLECTION

The research team collected secondary data on travel, visitation and occupancy rates from a variety of sources as detailed below. This data contributed to the visitation estimation methodology as detailed in the subsequent section and served as valuable reference points when analyzing the 2023 visitor survey data.

STATE PARK & FOREST DATA

The research team submitted a FOIA request to the Michigan Department of Natural Resources (DNR) for data on Day and Overnight visitor data, occupancy rates, and booking zip codes from MIDNRreservations.com for the years 2018-2022 for the Baraga, Bewabic, Fort Wilkins, Lake Gogebic, Porcupine Mountains Wilderness, F.J. McLain, and Twin Lakes state parks. The team also submitted a FOIA request to the DNR for monthly and annual revenue data from the following State forest campgrounds for the years 2018-2022: King Lake, Beaufort, Big Eric's Bridge, Big Lake, Deer Lake, Glidden Lake, Emily Lake.

NATIONAL PARKS SERVICE DATA

The research team accessed the National Parks Service Visitor Use Statistics [https://irma.nps.gov/Stats/] database to download monthly and annual data from 2018-2023 for Isle Royale National Park and the Keweenaw National Historical Park including day visitors and overnight stays (Isle Royale only).

USDA OTTAWA NATIONAL FOREST DATA

The research team received National Forest Campground unit, capacity, and season length data from National Forest staff for 20 campgrounds within the forest boundaries.

PA 59 AUDIT REPORTS

The research team accessed PA 59 report public audit files [https://www.michigan.org/industry/PA59reports] for the following Destination Marketing Organizations (DMOs) in the Western U.P. for the years 2017 to 2022: Iron County Lodging Association; Baraga County Convention and Visitors Bureau; Keweenaw Convention and Visitors Bureau (Visit Keweenaw); Porcupine Mountains Ontonagon Area CVB; and Western Upper Peninsula Convention and Visitors Bureau. These files include key information on revenue generated through lodging area assessments.

AIR SERVICE DEMAND

The research team accessed air service demand data from the

SECONDARY DATA COLLECTION

Michigan Department of Transportation (MDOT) [https://mdotjboss.state.mi.us/AIRSTATS/AIRSTATSHome.htm] for the Houghton County Memorial and Gogebic-Iron County Airports.

STR PARTICIPATION LISTS

The research team requested participation lists for Baraga, Iron, Ontonagon and Gogebic Counties to complement data provided by Visit Keweenaw on the lodging market availability. This data includes the name and location of lodging facilities and the number of reported rooms at the property.

US CENSUS BUREAU DATA

The research team utilized the U.S. Census Bureau's data portal to collect secondary data on county level population statistics, and land coverage.

SHORT TERM RENTAL MARKET DATA

The research team purchased access to AirDNA Market Summary Reports for the 6 Western U.P. counties including monthly Listings, Room Nights, Occupancy, ADR, and RevPAr from March 2015 through November 2023.

LOCAL CAMPGROUND & VISITATION DATA

The research team communicated with county, city, and other municipalities, along with community based organizations such as chambers of commerce, and visitor bureau to request data from visitor centers and occupancy at campgrounds and seasonal RV parks. The team received data from the following entities: Bates Township; City of Crystal Falls; City of Hancock; City of Houghton; City of Wakefield; Gogebic County Forestry and Parks Commission; Iron County Economic Chamber Alliance; Lake Linden Village; Ontonagon County Historical Society; Ontonagon Township; Stannard Township; Stanton Township; Wakefield Chamber of Commerce; Wakefield Historical Society.

VISIT KEWEENAW VISITATION DATA

The research team received data on lodging market availability, lodging assessments, visitor estimations, and other tourism related data from project partners at Visit Keweenaw.

ADDITIONAL DESKTOP RESEARCH

The research team conducted additional desktop research to identify lodging providers, available rooms & sites and seasonality of lodging offerings.

Appendix A: Methodology VISITOR ESTIMATION

The research team developed monthly county-level visitor estimates using the lodging data sources as described in the section above. This estimation methodology is based in part on the work of staff at Visit Keweenaw. The estimation methodology consists of 4 main phases: lodging assessment district (LAD) occupancy estimation, campground occupancy estimation; party size, length of stay, and multi-location adjustments; and family and friends & day trip estimates.

LAD OCCUPANCY ESTIMATION

Lodging assessment district occupancy was estimated using PA 59 Annual Audit filings for the 5 DMOs in the Western U.P.. Total lodging district revenue was calculated using reported assessment revenue for each fiscal year and PA 59 Assessment results accessed through Visit Keweenaw. It is assumed that these rates have not changed since 2019. Monthly room occupancy and revenue distribution from Visit Keweenaw was analyzed to identify seasonal patterns of the data. The research team then computed 3 and 4 year averages for each month's percentage of fiscal year total gross revenue. The research team selected the three year average to minimize the impact of 2020 COVID-19 lockdown related changes on the estimates for other years. The resulting 3 year averages were January 6.71%; February 8.85%; March 5.76%; April 3.22%; May 4.93%; June 8.12%; July 15.49%, August 16.89%; September 13.55%; October 9.53%; November 2.75%; December 4.22%. These figures were applied to the remaining 4 assessment districts to calculate estimated revenue per month. Embedded in these estimates is the assumption that all areas of the Western U.P. see similar seasonal patterns of lodging revenue influenced both by varying ADR and occupancy rates. Three sets of monthly booked room night figures were estimated for each county: the first based on Visit Keweenaw district's ADR, the second based on county specific occupancy rates from short term rental market (AirDNA), and third based on estimated ADRs produced through desktop research on lodging rates in each county. Total Available room nights for all three estimates were calculated based on desktop research on seasonal lodging availability in each county. After reviewing the three sets of figures the research team selected the set which produced the most reasonable booked lodging night estimates for each county.

CAMPGROUND OCCUPANCY ESTIMATION

Campground data for local, county, state, and federal campgrounds was collected and analyzed to produce estimated visitation figures. Monthly state park overnight visitation figures were drawn from

Appendix A: Methodology VISITOR ESTIMATION

datasets provided by DNR through a FOIA request. Isle Royale National Park overnight visitation figures were drawn from monthly visitation reports and included in the database. State forest campsite occupancy rates were calculated using reported monthly revenue provided by DNR and the daily site fee for each site. All other campground data was entered into the database. For campgrounds where neither the occupancy rate nor the booked campsite nights were known a county-specific monthly weighted average occupancy rate based on the other campgrounds in the county was applied. The average occupancy rate was weighted by the number of campsites at each campground to control for a wide range of campground sizes. The assumption made in this process is that all campgrounds in a county see similar levels of occupancy to each other in the same period of the year.

PARTY SIZE, TRIP LENGTH, MULTI-AREA ADJUSTMENTS

Booked room nights and campsites alongside short term rental booked listing night data sourced from AirDNA were adjusted using party size, length of stay and multi-location figures to estimate the number of visitor trips represented by the listing night estimates. The following lodging type-specific mean party size figures were sourced from 2023 visitor survey dataset trips taken between May and November 2023: Cabin, Cottage or other Vacation Rental (3.9); Campground or RV Park (2.8), Hotel, Motel, Inn, or Bed & Breakfast (2.8). Lodging type-specific mean length of stay figures were calculated using 2023 visitor survey dataset trips taken between May and November 2023. These figures reflect the average number of nights for each selected lodging type (Reported days-1): Cabin, Cottage or other Vacation Rental (3.5); Camparound or RV Park (3.5), Hotel, Motel, Inn, or Bed & Breakfast (1.5). Additionally, the project team calculated a multi-location adjustment figure again using 2023 visitor survey dataset trips taken between May and November 2023. To calculate this figure the research team segmented the sample by the number of reported lodging areas and calculated the total number of visitor days and the median number of days per lodging area for each group. Each segment's days per lodging area was then divided by four (the overall median trip length). Visitor days for each segment were calculated as a % of all visitor days in the sample and a weighted mean was calculated between these two sets of figures resulting in a multi-location adjustment figure of 0.9003. Monthly estimated booked nights figures were multiplied by the party size figure and then divided by the product of the length of stay and multi-location adjustment figure resulting in the monthly visitors for each lodaing category.

Appendix A: Methodology VISITOR ESTIMATION

FAMILY & FRIEND LODGING VISITATION

Monthly overnight visitor figures across the three lodging categories were used as the basis to calculate the number of overnight visitors staying with family and friends. Returning to the 2023 visitor survey data subset of trips taken between May and November 2023, of the respondents that reported only 1 lodging type, 20% of visitors represented stayed with family and friends. The difference between this figure and the 21% of visitors reporting Family visit as the purpose of their visit is assumed to account for family visits where the visitors are not staying overnight with their family members. The overnight visitation figures across short term rentals, hotels, motels, inns, bed & breakfasts and campgrounds were multiplied by 1.25 to account for these visitors staying with family and friends. This resulting figure for each county reflects the total estimated overnight visitor trips.

MULTI-COUNTY ADJUSTMENT

Once county level estimates were produced, the team adjusted the total visitation number using a multiplier of 0.94534 to account for visitors staying in more than one county on their trip to the Western U.P.

DAY TRIP ADJUSTMENT

Within the sample of responses from the 2023 Visitor Survey, Day trips accounted for 10% of all responses. Given the fact that overnight visitors had a greater chance of encountering the survey promotional materials, we believe that this sample does not adequately reflect the split of the visitor population between day and overnight visitors. The research team reviewed previous tourism studies for Michigan produced by Compass International which reported that 43% of all person trips to the Upper Peninsula in 2022 were day trips. The research team calculated a weighted average between the survey sample and the 2022 Compass International figure with weights of 2.5 and 1 respectively. Day trip visitor trips to the Western U.P are estimated to make up 19% of the total visitor trip population.

2023 VISITATION

Given the lack of all data sources for the 2023 calendar year when undertaking visitation estimation in Fall & Winter 2023, the research team produced 2023 visitation estimates using 2022 figures and patterns seen in preliminary 2023 data sources. The research team assumed a 6% increase in visitation across the entire Western U.P. region. Trip type and county distribution rations were assumed to remain the same between 2022 and 2023.

IMPACT ANALYSIS

APPROACH:

The economic contribution of tourist spending is estimated through IMPLAN, a regional economic analysis software application. IMPLAN is based on Input-Output modeling, which is a type of applied economic analysis that tracks the interdependence among various producing and consuming industries of an economy. It measures the relationship between a given set of demands for final goods and services and the inputs required to satisfy those demands. IMPLAN uses annual, regional data to map buy-sell relationships to predict how specific economic changes will impact a given regional economy. In the case of tourism in the Western Upper Peninsula, it measures how spending impacts the local economy.

Data for the model include overnight and day trip spending data gathered through the survey adjusted for multi-county trips and 2022 visitation estimates, which match the most current annual economic dataset. Data input into the model for the entire Western U.P. region includes the following:

- Day trip visitors were estimated to be 372,265
- Overnight visitors estimates (1,587,025) were based on 2022 visitation to match the economic dataset. The following adjustments were made when estimating the impacts of lodging:

- We estimated that 20% of overnight visitors are staying with family and friends based on local stakeholder estimates. Thus 317, 405 were removed from total lodging estimates.
- Based on the Visitation Estimation Methodology detailed above, 14% of overnight visitors are estimated to stay in short term rentals (222,183). These impacts were modeled as household income events. The number of overnight STR visitors was converted to total estimated revenue (\$133.12 per person). Then this income was distributed between households based on the total number of households in that category in 2022. This resulted in the following distribution:

Household category	Total income
Households 70-100k	\$12,997,942
Households 100-150k	\$10,297,372
Households 150-200k	\$3,388,106
Households GT200k	\$2,838,098

 The remaining 1,047,436 are assumed to stay in hotels, motels or campgrounds and are modeled within that category.

This methodology was then duplicated for each county.

IMPACT ANALYSIS

INDUSTRY AGGREGATION SCHEME

To match the data collected through the survey, the research team created a custom industry aggregation scheme in IMPLAN. The following industries are grouped together:

- Lodging Industry: This industry represents all types of public and private accommodations, including hotels, motels, and campgrounds.
- Recreation & Entertainment Industry: This industry grouping includes rentals of sports equipment, museums, tours, gambling, sports events, and more.
- Retail Industry: This includes all retail industries, except food and beverage stores.
- Food & Beverage Industry: This includes all types of restaurants as well as retail food & beverage. Due to the significant role of camping and STRs, we assumed these expenditures by tourists at all these types of businesses.

• Transportation Industry: This included air, water, passenger and tourist transportation as well as spending at gas stations. All other industries are defined with a 2-digit NAICS codes, defined on the next page. The results indicate impacts at the direct, indirect, and induced levels. Direct impacts are those resulting directly from tourism spending. Indirect impacts are from the business-to-business purchases rippling into the economy. Induced impacts are the labor income impacts from employees represented in the direct and indirect effects.

TAX IMPACTS

For taxes, all results are presented at the direct, indirect, and induced levels. The majority of the county-level tax results are property taxes, other taxes and limited special assessment taxes. "Other taxes" include alcoholic beverage license, amusements license, business license, business registration renewal, concession license, corporation license, documentary fee, documentary and stock transfer, fishing license, franchise tax, food and beverage license fees, hunting license, gun license, mortgage recording, Nonemployee Compensation (NEC), occupation and business license, other license, permit, public utility license, tourism license, stamp tax.

IMPACT ANALYSIS

INDIRECT & INDUCED INDUSTRY DEFINITIONS

The indirect and induced industries represented are at the 2-digit NAICS codes, excluding the custom industry aggregation scheme for the tourism industries, described on the previous page. These supported industries include:

Administrative and Support and Waste Management and Remediation Services: The Administrative and Support and Waste Management and Remediation Services sector comprises establishments performing routine support activities for the day-to-day operations of other organizations. These essential activities are often undertaken in-house by establishments in many sectors of the economy. The establishments in this sector specialize in one or more of these support activities and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services. **Finance and Insurance:** The Finance and Insurance sector comprises establishments primarily engaged in financial transactions (transactions involving the creation, liquidation, or change in ownership of financial assets) and/or in facilitating financial transactions.

Health Care and Social Assistance: The Health Care and Social Assistance sector comprises establishments providing health care and social assistance for individuals. The sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. The industries in this sector are arranged on a continuum starting with establishments providing medical care exclusively, continuing with those providing health care and social assistance. Establishments in this sector deliver services by trained professionals. All industries in the sector share this commonality of process, namely, labor inputs of health practitioners or social workers with the requisite expertise. Many of the industries in the sector are defined based on the educational degree held by the practitioners included in the industry.

IMPACT ANALYSIS

Information: The Information sector comprises establishments engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data.

Management of Companies and Enterprises: The Management of Companies and Enterprises sector comprises (1) establishments that hold the securities of (or other equity interests in) companies and enterprises for the purpose of owning a controlling interest or influencing management decisions or (2) establishments (except government establishments) that administer, oversee, and manage establishments of the company or enterprise and that normally undertake the strategic or organizational planning and decision-making role of the company or enterprise. Establishments that administer, oversee, and manage may hold the securities of the company or enterprise.

Other Services (except Public Administration): The Other Services (except Public Administration) sector comprises establishments engaged in providing services not specifically provided for elsewhere in the classification system. Establishments in this sector are primarily engaged in activities such as equipment and machinery repairing, promoting or administering religious activities, grantmaking, advocacy, and providing dry cleaning and laundry services, personal care services, death care services, pet care (except veterinary) services, photofinishing services, temporary parking services, and dating services.

Other governmental enterprises: This represents government agencies that cover a substantial portion of their operating costs by selling goods and services to the public. They operate much like private sector firms, hiring labor and purchasing other inputs to produce goods that are sold through markets. Other Federal\State\Local government enterprises (i.e., those other than postal, electric utility, and transportation services) include things such as government owned and operated liquor stores, airports, sewer and sanitation services, gas, and water supply.

IMPACT ANALYSIS

Professional, Scientific, and Technical Services: The Professional, Scientific, and Technical Services sector comprises establishments that specialize in performing professional, scientific, and technical activities for others. These activities require a high degree of expertise and training. The establishments in this sector specialize according to expertise and provide these services to clients in a variety of industries and, in some cases, to households. Activities performed include: legal advice and representation; accounting, bookkeeping, and payroll services; architectural, engineering, and specialized design services; computer services; consulting services; research services; advertising services; veterinary services; and other professional, scientific, and technical services.

Real Estate and Rental and Leasing: The Real Estate and Rental and Leasing sector comprises establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets, and establishments providing related services. The major allow the use of their own assets by others. The assets may be tangible, as is the case of real estate and equipment, or intangible, as is the case with patents and trademarks.

IMPACT ANALYSIS - ASSUMPTIONS

MODEL ASSUMPTIONS

While key assumptions were made and approved by the research team, IMPLAN provided economic language and other supporting services. Within the model, the **following assumptions are embedded:**

- **Constant Returns to Scale**: The same quantity of inputs is needed per unit of Output, regardless of the level of production (Adams & Stewart, 1956; Christ, 1955; MIller & Blair, 2009). In other words, if Output increases by 10%, input requirements will also increase by 10%.
- Fix input structure/ no substitute effects: There is no input substitution in the production of any one Commodity (Adams & Stewart, 1956; Bess & Ambargis, 2011; Christ, 1955; MIller & Blair, 2009). This means that the same recipe of inputs will always be used to create the Output unless changes to the IMPLAN production function are made.
- **Industry homogeneity**: All firms within an Industry are characterized by a common production process. If the production structure of the initially-affected local firm is not consistent with the average relationships of the firms that make up the industry in the I-O accounts, then the impact

of the change on the local economy will differ from that implied by a regional multiplier (Bess & Ambargis, 2011). In IMPLAN, edits can be made to the production function of an industry in order to model the operations of a distinct firm.

- No supply constraints: There are no restrictions to inputs, raw materials, and employment (Christ, 1955). The assumption is that there are sufficient inputs to produce an unlimited amount of product. It is up to the user to decide whether this is a reasonable assumption for their study area and analysis, especially when dealing with large-scale impacts.
- Technology assumption: An Industry, and the production of . Commodities, uses the same technology to produce each of its products (Guo, Lawson, & Planting, 2002). In other words, an Industry's Leontief Production Function is a weighted average of the inputs required to produce the primary product and each of the byproducts, weighted by the Output of each of the products. The technology assumption is used to convert make-use tables (or supply-use tables for international datasets) into a symmetric I-O table. IMPLAN is an Industry Technology Assumption (ITA) model for all Industries which do not have any redefinitions into or out of them. For the Industries which do contain redefinitions, the production functions contain purchases of some Commodities necessary to make the secondary Commodity that has been redefined into it; thereby falling under the Commodity Technology Assumption (CTA).

IMPACT ANALYSIS - ASSUMPTIONS

- **Constant byproduct coefficients:** As a requirement of the technology assumption, Industry byproduct coefficients are constant. An Industry will always produce the same mix of Commodities regardless of the level of production. In other words, an Industry will not increase the Output of one product without proportionately increasing the Output of all its other products.
- The model is static: No price changes are built in IMPLAN and the underlying data and relationships are not affected by impact runs (Bess & Ambargis, 2011). Input-Output models do not account for general equilibrium effects such as offsetting gains or losses in other Industries or geographies nor the diversion of funds from other projects. I-O and SAM models assume that consumer preferences, government policy, technology, and prices all remain constant. In IMPLAN, the relationships for a given year do not change unless intentionally modified.
- **Backward linkages**: Type I multipliers measure only the backward linkages, also known as upstream effects (Bess & Ambargis, 2011). Input-Output analysis does not look at forward linkages in terms of how an Industry's production is used as an input for other production or for final use, also known as downstream effects.

Time delineated: The length of time that it takes for the economy to settle at its new equilibrium after an initial change in economic activity is unclear because time is not explicitly included. One can assume the adjustment will be completed in one year because the flows in the underlying industry data are measured over the same length of time. However, the actual adjustment period varies and is dependent on the change in final demand and the related industry structure that is unique to each study (Bess & Ambargis, 2011). In IMPLAN, the Dollar Year must be specified on the impacts screen. Results can be viewed in any dollar year regardless of the Dollar Year of the Impacts.

REPORTED ACTIVITY GROUPS DETAIL*

Activity Group	Activity	Winter (n=2472)	Spring (n=667)	Summer (n=5035)	Fall (n=2465)
Arts, Culture, & History	-	10.60%	34.63%	44.07%	31.64%
Arts, Culture, & History	Historical Tours/Mine Tours	5.38%	20.54%	30.03%	21.42%
Arts, Culture, & History	Museums	5.02%	20.54%	25.74%	18.17%
-	Beach Activities	-	12.29%	47.83%	21.87%
Biking	-	3.11%	8.40%	15.55%	6.69%
Biking	Fat-Tire	3.03%	-	-	-
Biking	Leisure	-	2.55%	10.72%	2.84%
Biking	Mountain	-	6.75%	7.49%	4.50%
-	Boat Cruise & Boating	-	2.55%	11.52%	6.57%
-	Camping	-	8.25%	24.91%	19.35%
-	Casinos	5.30%	2.70%	4.59%	2.88%
-	Ice Climbing	1.01%	1.80%	-	-
-	Golf	-	-	3.14%	1.74%
-	Hiking		30.88%	67.88%	61.05%
Hunting & Fishing	-	4.81%	9.15%	23.40%	17.89%
Hunting & Fishing	Ice Fishing	4.81%	1.65%	-	-
Hunting & Fishing	Fishing	-	6.30%	23.40%	16.31%
Hunting & Fishing	Hunting	1.17%	1.80%	-	1.66%

*This table (Pages 132-133) contains all activities reported by at least 1% of a seasonal sample of represented visitors 152

REPORTED ACTIVITY GROUPS DETAIL

Activity Group	Activity	Winter (n=2472)	Spring (n=667)	Summer (n=5035)	Fall (n=2465)
Nature Viewing	-	12.90%	47.53%	66.16%	64.71%
Nature Viewing	Leaves	-			1.38%
Nature Viewing	Northern Lights	12.74	28.34%	30.49%	34.93%
Nature Viewing	Waterfalls	-	32.23%	60.32%	55.05%
Nature Viewing	Wildlife	-	1.05%	-	-
-	Off-Road Vehicles	-	10.64%	18.35%	38.66%
-	Paddlesports	-	3.15%	16.17%	6.17%
-	Pickleball	-	-	1.43%	
-	River Tubing	-	-	2.32%	1.38%
-	Rockhounding	-	14.09%	31.70%	25.76%
Skiing	-	59.91%	9.75%	-	-
Skiing	Cross-Country	27.39%	4.20%	-	-
Skiing	Downhill/Snowboarding	37.38%	5.85%	-	-
-	Snowmobiling	29.29%	4.50%	-	-
-	Snowshoeing	13.63%	5.10%	-	-
-	Special Events	12.42%	15.89%	9.87%	7.95%

High Level Theme		Su	ıb-Theme	Level 2 Sub-Theme		Level 3 Sub-Theme	
Transportation & Infrastructure	31.54%						
		Internet/Cell Service	12.59%				
		Trails	4.84%				
				UTV/ORV Trail Access and Bridge Crossing	2.21%		
				Silent Sports Trails	1.52%		
						Bike Trails	1.11%
				Trail Maintenance	0.55%		
		EV Chargers	3.73%				
		Recycling	2.35%				
		Transportation Options	2.07%				
				Public Transportation	0.83%		
				More Regular Flights	0.69%		
				Rental Cars	0.28%		
				Transportation to Isle Royale	0.28%		
		Gas Stations	1.66%				
		Parking	1.66%				
				RV Parking	0.41%		

High Level Theme		Sub-Theme		Level 2 Sub-Theme		Level 3 Sub-Theme	
Transportation & Infrastructure	31.54%						
		Rest stops and Bathrooms	1.52%				
				Public Restrooms	0.28%		
				Public Showers	0.28%		
		Road Quality	0.83%				
		Bike Lanes	0.41%				
		Marinas/Boat Launches	0.41%				
		Dump Stations	0.28%				
Nothing	27.66%						
Food & Beverage	17.15%						
		Restaurant Variety	5.12%				
		Restaurant Quantity	3.73%				
		Restaurant Open Hours	2.90%				
		Restaurant Quality	1.80%				
		Dietary Restrictions	1.66%				
		Grocery Store	1.11%				
		Alcohol	0.83%				

High Level Theme		Sub-Theme		Level 2 Sub-Theme		Level 3 Sub-Theme	
Food & Beverage	17.15%						
		Coffee Shops	0.83%				
		Food Price/Affordability	0.69%				
		Ice Cream	0.55%				
Cultural/Natural Heritage & Recreation	12.45%						
		Activities	4.70%				
				Tours	1.38%		
				Music	0.69%		
		Activities	4.70%				
				Recreational Activities for Families	0.69%		
				Entertainment for Rainy Days	0.41%		
				Street Festivals	0.41%		
				Community Events	0.14%		
				Single-Person Activities	0.14%		
		Natural Viewpoints	1.52%				
		Recreation Rentals	1.52%				
		Accessible Recreation	0.83%				

High Level Theme		Sub-Theme		Level 2 Sub-Theme		Level 3 Sub-Theme	
Cultural/Natural Heritage & Recreation	12.45%						
		Historic Preservation	0.83%				
		Artisans	0.55%				
		Boat Cruises	0.55%				
		Historical Interpretation	0.55%				
		Playgrounds	0.41%				
		Recreation limits	0.41%				
		Beaches & Beach Maintenance	0.28%				
		Dog-Friendly Recreation	0.28%				
		Historical Attractions	0.28%				
		Recreation Center	0.28%				
		Rockhounding	0.28%				
		Sports	0.28%				
				Golf	0.14%		
				Pickleball	0.14%		
		Mining Museum	0.14%				
		Movie Theater	0.14%				

High Level Theme		Sub-Theme		Level 2 Su	Level 2 Sub-Theme		Level 3 Sub-Theme	
Cultural/Natural Heritage & Recreation	12.45%							
		Native American Heritage	0.14%					
Accommodations	11.62%							
		Accommodation Price/Affordability	4.15%					
		Accommodation Quantity	4.01%					
		Dog-Friendly Accommodations	0.41%					
		Accessible Lodging	0.28%					
Retail Shopping & Services	7.47%							
		Longer Open Season	2.07%					
		Shops Open Hours	1.11%					
		Small Family Businesses	0.41%					
		Dispensaries	0.28%					
Information/Signage	7.33%							
		Maps	1.52%					
		Online Information	1.52%					
		Waterfall Information	0.97%					

VISITOR RECOMMENDATIONS IN THE KEWEENAW PENINSULA DETAIL

High Level Theme		Sub-Theme		Level 2 Sub-Theme		Level 3 Sub-Theme	
Information/Signage	7.33%						
		Street Signs	0.69%				
		Trail Signage	0.69%				
		Visitor Center	0.69%				
		Regional Guidebook	0.55%				
		Hunting/Fishing Guides	0.14%				
Mitigating Impacts of Tourism	2.21%						
Limiting Commercial Development	2.07%						

Other themes which were identified in less than 1% of the sample include: staffing concerns, sustainability, support for local businesses, local friendliness, fewer tourists, increased diversity, and fewer bugs.

LODGING AVAILABILITY BY COUNTY

BARAGA COUNTY

Hotels & Motels: 159 rooms

- · Ojibwa Casino Hotel
- · Baraga Lakeside Inn
- · L'Anse Motel
- · Motel 41
- · Three Lakes Motel
- Short Term Rentals: 64 rentals (max) Campgrounds: 247 sites
 - · L'Anse Township Park
 - · Ojibwa Campground (KBIC)
 - · King Lake SFC
 - · Beaufort Lake SFC
 - · Big Eric's Bridge SFC
 - Big Lake SFC
 - · Sturgeon River Campground ONF
 - · Ojibwa Casino RV Park
 - · Baraga State Park Campground

GOGEBIC COUNTY

Hotels & Motels: 578 rooms

- · Black River Lodge
- Magnuson Hotel Ironwood
- AmericInn Lodge & Suites
 Ironwood

- · Indianhead Ironwood
- Snowriver Mountain Resort
- · Dancing Eagles Resort
- · Bluffs Inn
- · Royal Motel
- Budget Host Cloverland Motel
- · Quality Inn Ironwood
- $\cdot\,$ Classic Motor Inn
- $\cdot\,$ Cedars Motel
- Northwoods Motel

Short Term Rentals: 288 rentals (max)

Campgrounds: 588 sites

- · Curry Park
- · Lake Gogebic County Park
- McDonald Lake County Park
- · Little Girls Point County Park
- · Sunday Lake Eddy park Campground
- · Black River Harbor Campground ONF
- Bobcat lake Campground ONF
- Henry Lake Campground ONF
- · Moosehead Lake Campground ONF
- · Pomeroy Lake Campground ONF
- · Burned Dam Campground ONF
- · Sylvania Campground ONF
- Marion Lake Campground ONF

- Sylvania Wilderness Backcountry Camping ONF
- · Lake Gogebic State Park

HOUGHTON COUNTY

- Hotels & Motels: 510 rooms
 - · AmericInn by Wyndham Calumet
 - · Country Inn & Slides by Radisson
 - · Hampton Inn & Suites by Hilton
 - Holiday inn Express
 - · Super 8 by Wyndham Houghton
 - · Independence Stay of Houghton
 - Magnuson Copper Crown
 - · QUality Inn & Suites
 - Ramada Waterfront by Wyndham
 - · The Vault Hotel
 - · Copper Country Inn
 - Laurium Manor Inn
 - · Daniell Manor
 - Parkview Lodge

Short Term Rentals: 368 rentals (max) Campgrounds: 340 sites

- · Hancock City Campground
- · Lake Linden Village Campground
- · Lakeshore Park, City of Houghton

LODGING AVAILABILITY BY COUNTY

HOUGHTON COUNTY cont.

- · Schoolcraft Township
- Campground
- · Agate Beach Park Campground
- Emily Lake SFC
- Sparrow Rapids Campground ONF
- · Bob Lake Campground ONF
- $\cdot\,$ McLain State Park
- Sturgeon River Gorge Wilderness ONF
- $\cdot\,$ Twin Lakes State Park

IRON COUNTY

Hotels & Motels: 194 rooms

- AmericInn Lodge & SUites Iron River
- · Ski Brule Iron River Resort
- · Lakeshore Motel
- · The Chicaugon Lake Inn
- · Bigfoot Hideaway Motel
- · Michi-Aho Resort
- · Root Cellar Resort

Short Term Rentals: 86 rentals (max) Campgrounds: 556 sites

- $\cdot\,$ Iron County RV Park
- Bates Township Park (Sunset Lake)
- · Pentoga Park, Iron County
- · Runkle Lake Campground
- $\cdot\,$ Deer Lake SFC
- · Glidden Lake SFC
- · Golden Lake Campground ONF
- · Lake Ottawa Campground ONF
- · Paint River Forks Campground ONF
- · Lake Ste. Kathryn Campground ONF
- · Norway Lake Campground ONF
- · Perch Lake Campground ONF
- · Bewabic State Park
- · Paint River Hills Campground
- Timber Lane Resort Campsites

KEWEENAW COUNTY

- Hotels & Motels: 305 rooms
 - · Keweenaw Mountain Lodge
 - · Rock Harbor Lodge
 - · Fitzgerald's Hotel & Restaurant
 - · Bella Vista Motel
 - · Brockway Inn
 - · King Copper Motel
 - · Lake Fanny Hooe Resort Motel

- · Mariner North Resort
- · Minnetonka Resort
- · North Port Motel
- · Dapple-Gray Bed & Breakfast
- Mount Bohemia Lodging-Motel
- · Eagle Harbor Inn
- · Trailside Lodge
- · White House Lodging

Short Term Rentals: 194 rentals (max) Campgrounds: 719 sites

- · Fort Wilkins Historic State Park
- · Isle Royale National Park
- · Sunset Bay RV Resort & Campground
- · Ahmeek Coppermine Camp
- · Trails End Campground
- · Lake Fanny Hooe Campground
- Mount Bohemia Campsites

ONTONAGON COUNTY

- Hotels & Motels: 186 rooms
 - Walleye Lodge
 - · AmericInn Lodge & Suites Silver City
 - Mountain View Lodges
 - · Superior Shores Resort
 - · The Konteka Black Bear Resort

LODGING AVAILABILITY BY COUNTY

ONTONAGON COUNTY cont.

- · Lake Gogebic Motel
- · Sunshine Motel
- · Scott's Superior Inn
- · Griswold's Lodge

Short Term Rentals: 131 rentals Campgrounds: 459 sites

- · Bergland Township Park
- Ontonagon County Park (on Lake Gogebic)
- · Ontonagon Township Park
- Stannard Township Park (Bruce Crossing)
- · Courtney Lake Campground ONF
- · Robbins Pond Campground ONF
- Porcupine Mountains Wilderness State Park
- · Sunshine Motel Campsites

Image Credits

Original Image credits. Some images have been cropped and or edited to align with the report design.

Cover Upper: Visit Keweenaw. IMG_4305 [Photograph]. Courtesy of Visit Keweenaw.

Cover Lower: Mollerus, S. (2023). Presque Isle, Porcupine Mountains 8/28/23 [Photograph]. Flickr. <u>https://flic.kr/p/2p38ZvM</u>. CC BY 2.0 DEED

Page 5: Visit Keweenaw. KeweenawIceClimb-0046 [Photograph]. Courtesy of Visit Keweenaw.

Page 20 Upper Left: Mason, D. Keweenaw-Mtn-Lodge_XC-Trails_6 [Photograph]. Pure Michigan. Courtesy of Visit Keweenaw.
Page 20 Upper Right: Emperley, R. (2010). Silver falls 22 [Photograph]. Flickr. <u>https://flic.kr/p/8aNc1N</u>. CC BY-SA 2.0 DEED
Page 20 Lower Left: Visit Keweenaw. Keweenaw-46604 [Photograph. Courtesy of Visit Keweenaw.

Page 20 Lower Right: Ottawa National Forest (2017). 171005-FS-Ottawa-RE-040 [Photograph]. Flickr. <u>https://flic.kr/p/ZjUSCN</u>. Public Domain.

Page 21: Mason, D. Keweenaw-Mtn-Lodge_XC-Trails_6 [Photograph]. Pure Michigan. Courtesy of Visit Keweenaw.

Page 22: Emperley, R. (2010). Silver falls 22 [Photograph]. Flickr. <u>https://flic.kr/p/8aNc1N</u>. CC BY-SA 2.0 DEED

Page 23: Visit Keweenaw. Keweenaw-46604 [Photograph. Courtesy of Visit Keweenaw.

Page 24: Ottawa National Forest (2017). 171005-FS-Ottawa-RE-040 [Photograph]. Flickr. https://flic.kr/p/ZjUSCN. Public Domain

Page 34: Sovich, J. (2017). Isle Royale 2017 [Photograph]. Flickr. <u>https://flic.kr/p/WVTdYp</u>. CC BY 2.0 DEED

Back Cover: Sovich, J. (2017). Isle Royale 2017 [Photograph]. Flickr. <u>https://flic.kr/p/WVTdYp</u>. CC BY 2.0 DEED



Adams, A.A. & Stewart, I.G. (1956). Input-Output Analysis: An Application. The Economic Journal, 66 (263), 442-454.

Bess R. & Ambargis, Z.O. (2011). Input-Output Models for Impact Analysis: Suggestions for Practitioners Using RIMS II Multipliers. Presented at the 50th Southern Regional Science Association Conference, New Orleans, Louisiana. <u>https://www.bea.gov/system/files/papers/WP2012-3.pdf</u>

Christ, C.F. (1955). A Review of Input-Output Analysis. In Input-Output Analysis: An Appraisal (pp. 137-182). Princeton University Press.

Clouse, Candi. (2019) "Tourism Spending." IMPLAN. support.implan.com/hc/en-us/articles/360026545913-Tourism-Spending.

- Guo, J., Lawson, A.M., & Planting, M.A. (2002). From Make-Use to Symmetric I-O Tables: An Assessment of Alternative Technology Assumptions. Presented at the 14th International Conference on Input-Output Techniques, Montreal, Canada. https://www.bea.gov/system/files/papers/WP2012-3.pdf
- Horowitz, K.J. & Planting, M.A. (2009). Concepts and Methods of the U.S. Input-Output Accounts. Bureau of Economic Analysis, US Department of Commerce. https://www.bea.gov/sites/default/files/methodologies/IOmanual_092906.pdf
- IMPLAN® model, [2022] Data, using inputs provided by the user and IMPLAN Group LLC, IMPLAN System (data and software), 16905 Northcross Dr., Suite 120, Huntersville, NC 28078 <u>www.IMPLAN.com</u>
- Miller, R.E. and P.D. Blair. (2009). Input-Output Analysis: Foundations and Extensions, Second Edition. New York: Cambridge University Press.

Reichheld, F.F. (2003). The only number you need to grow. Harvard Business Review, 81, 46-55.



734-998-6201 | economicgrowth@umich.edu | economicgrowth.umich.edu

