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Community and Economic Benefits of Bicycling in Michigan

Michigan Department of Transportation

PHASE II FINAL REPORT

Phase II Final Report

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Community and Economic Benefits of Bicycling in Michigan

Prepared for

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SECTION I.

Introduction and Executive Summary

SECTION I.
Introduction and Executive Summary

The Michigan Department of Transportation (MDOT) retained BBC Research & Consulting (BBC) and R. Neuner Consulting to study the economic and community benefits of bicycling for the state of Michigan. Phase I of this effort documented benefits associated with residents who bicycle and participate in bicycling events. It included studies of five communities throughout the state. This report is the culmination of the second phase of research and focuses on the economic and community benefits derived from out-of-state participation in bicycling events and bicycle-related tourism.

Study Objectives

The study objectives for Phase I and Phase II of the project include:

1. Estimating the community and economic benefits of bicycling in Michigan;

2. Estimating the community and economic benefits of bicycling in five case study communities throughout the state;

3. Providing in-depth qualitative information on links between bicycling and the economy according to business owners, government officials and bicycling advocates;

4. Estimating the economic benefits to Michigan from out-of-state participation in bicycling events; and

5. Estimating the economic benefits to Michigan from bicycle-related tourism.

Phase I of the project addresses the first three objectives and Phase II provides research on the fourth and fifth objectives. In addition to this report, the Phase II study also produced a customizable tool for use by bicycle event organizers to measure the economic impact of visitor spending associated with bicycling events.

Methodology

The methodology for this study is based on a comprehensive literature review of similar studies throughout the world. Below is a brief description of the types of activities studied in Phase II along with an overview of the methodology used:

- **Bicycle events.** The study included online and intercept survey responses from bicycling event participants throughout Michigan that quantified visitor spending associated with bicycling events. Estimates of the economic impact of these events were based on the proportion of out-of-state event participants, their associated spending, and the circulation of that spending through the Michigan economy.

- **Self-supported bicycle touring**. The study included online surveys with self-supported touring bicyclists on trip characteristics and spending habits. Self-supported touring bicyclists are bicyclists who do not rely on motor vehicles to carry their gear and provisions while travelling. Responses were solicited from an email newsletter from the Adventure Cycling Association and flyers available at key locations along touring routes in Michigan.
- **Touring companies**. In-depth interviews were conducted with bicycle touring companies throughout Michigan. These interviews covered a variety of topics including business trends, client demographics, and annual revenues.
- **The role of bicycling in Michigan tourism**. The study reviewed key research on tourism trends in Michigan and the role bicycling plays in attracting visitors.

Additional details on the methodology are included in Section II.

Key Results

Out-of-state participants in organized bicycling events in Michigan are responsible for $21.9 million in economic impact for the state. While spending associated with these events is substantially higher, the majority of participants in bicycling events are from Michigan. A few events had substantial participation from out-of-state including the Apple Cider Century, where over 4,000 individuals traveled to Michigan to participate in the ride and The Bell's Beer Iceman Commeth Challenge, where participants came from 36 different states. While most events are dominated by Michigan residents, even those events can have a substantial impact on their region. For example 97 percent of participants in the Ore to Shore Mountain Bike Epic, held in Marquette County, traveled more than 50 miles to attend the event.

Self-supported long distance touring bicyclists who travel to Michigan spend, on average, $71 per day during their trip, and a total of $520 per trip. This spending has an economic impact of $760 when accounting for induced and indirect effects. The average trip length of a bicycle tour in the state is approximately six days and more than two-thirds of all out-of-state touring cyclists used one of Michigan's U.S. Bicycle Routes during their trip.[1] A small proportion of out-of-state long distance touring bicyclists (around 30%) stay in Michigan for ten or more days during their trip.

Bicycling plays a substantial role in Michigan tourism. Communities throughout Michigan have made substantial investments in multi-use paths, rail trails and other infrastructure that supports bicycling by tourists and residents alike. The state has the most rail-trails in the United States with a total of 2,712 miles of shared-use pathways open to walking, jogging and bicycling. Michigan has also identified bicycling as an important amenity for visitors to the state through research and planning efforts conducted by the Pure Michigan campaign and local chambers of commerce. The state is currently working on a statewide bicycling trail running from Belle Isle Park in Detroit to Ironwood in the western Upper Peninsula.

[1] Michigan is home to three U.S. Bicycle Routes. U.S. Bicycle Route 10 is a 193 mile route that connects St. Ignace and Iron Mountain in Michigan's Upper Peninsula. The route utilizes the wide paved shoulders along US-2. U.S. Bicycle Route 20 is an east-west route of just over 300 miles and connects Marine City on the east with Ludington on the west. U.S. Bicycle Route 35 is a 500-mile route that runs from Indiana through Michigan to Sault Ste. Marie, Canada, generally following the Lake Michigan shoreline and through the eastern Upper Peninsula.

Report Structure

This report includes five sections, including this introduction, and five appendices. Section II provides an explanation of the methodology used for the study. Section III presents overall economic impact of bicycling events in Michigan along with results from six case study events. The results from the self-supported long distance touring bicyclist's survey are provided in Section IV along with information from interviews with touring companies. Section V presents an overview of research on tourism in Michigan and highlights ways in which bicycling contributes to the visitor experience.

Appendix A provides instructions for an economic impact model for use by MDOT and bicycling events statewide in addition to a generic survey instrument designed to collect the required information on visitor spending and characteristics. Appendix B reviews the data sources used for the study, and Appendix C provides a bibliography and literature review. Appendix D provides the survey instruments and interview guides used for the study. Appendix E contains the list of events included in the study. The last page of the report contains a summary infographic of the study.

SECTION II.

Methodology

SECTION II.
Methodology

This section details the methodology employed to measure the economic impact of out-of-state participants in bicycling activities in the state of Michigan. The approaches used were developed from a thorough review of literature on economic impacts related to bicycling and discussions with MDOT staff. Appendix C provides a bibliography of the literature reviewed as a part of the study.

Overview

This study provides MDOT with information on the following components of bicycle tourism in Michigan:

- Estimates of the economic impact for a representative sample of bicycle events and tours in Michigan;
- An estimate of the economic impact of self-supported bicyclists touring Michigan;
- A review of relevant research and data on the role of bicycling in the Michigan tourism economy; and
- An economic impact model and data collection tool for use by other events or organizations.

Event Participants

An intercept and online survey was used to collect information on trip and visitation characteristics for a variety of bicycling events throughout the state. The survey instrument used is based on input from the Phase I study as well as instruments used in similar studies in Arizona and Montana.[1] The instrument collected information from event participants regarding:

- Trip details including purpose and distance travelled;
- Party size;
- Number of event participants in the party;
- Spending on lodging, transportation, retail goods, and recreation related to the event; and
- Participant demographics such as location of residence, gender, and income.

The instrument asked questions about residence such that the study could use a conservative approach to measuring the economic impact of bicycling events (for example, by only including

[1] *An Economic Impact Study of Bicycling in Arizona Out-of-State Bicycle Tourists & Exports.* Arizona Department of Transportation, and *Analysis of Touring Cyclists; Impacts, Needs, and Opportunities for Montana.* Institute for Tourism and Recreation Research, University of Montana.

expenditures by out-of-state participants) while still collecting data representative of all event participants.

Data on Michigan bicycling events were collected from the League of Michigan Bicyclist's (LMB) ride calendar and research from event websites including:

- Event length (i.e. number of days);
- Event type (race, charity ride, tour);
- Number of participants; and
- Location.

Events were placed in one of three strata:

- Events with high attendance and the potential for substantial out-of-state participation;
- Smaller events with potential for out-of-state participation; and
- Events without a substantial draw for out-of-state participation (e.g. local weekly rides).

The study team contacted events in the first strata to gauge their interest in participating in the study. Working with MDOT staff, the study team identified six case study events for individual economic impact studies.

Working with event and tour organizers, the study team solicited survey responses from participants across a representative sample of Michigan bicycle-related events.

Intercept surveys. For the six case study events, intercept surveys were collected from event participants during registration, prior to the start of the event, or after completing the event.

Online surveys. Surveys for the remainder of the events were conducted online using Survey Monkey with invitations to participants delivered by event organizers.

Responses from the multiple survey efforts were used to estimate the direct economic impact of the specific events included in the sample, as well as the overall impact of bicycle-related events and tours in Michigan.

Economic impact model. In order to calculate the overall economic impact of bicycle events in the state of Michigan, BBC used IMPLAN multipliers to calculate the secondary (induced and indirect) economic benefits of event-related spending.[2]

[2] IMPLAN is an economic impact assessment system developed and maintained by the Minnesota IMPLAN Group (MIG). It allows the user to develop local-level input-output models that calculate the direct, indirect, and induced impacts of economic activity by sector through the use of industry-specific multipliers and other factors. The IMPLAN system closely follows the accounting conventions used by the Bureau of Economic Analysis.

Self-Supported Touring Bicyclists

An online survey was used to collect information from self-supported touring bicyclists who traveled through the state in recent years. The survey was similar to the survey used in the study of Montana touring bicyclists conducted by the University of Montana.[3] The survey focused on the following aspects of trips made by touring bicyclists:

- Length of tour;
- Spending while in Michigan;
- Party size;
- Route; and
- Use of U.S. Bicycle Routes.

The Adventure Cycling Association assisted in the distribution of the online survey by writing blog posts and sending emails to potential self-supported touring bicyclists. Additionally, flyers were placed at locations frequented by self-supported touring bicyclists in Michigan, including locations at the Mackinac Bridge and on the S.S. Badger. In addition to questions about per day expenditures, the survey included questions about the use of U.S. Bicycle Routes 20 and 35, frequency of multi-day bicycle trips in Michigan, and main surface type used while on a multi-day bicycle trip in Michigan. Survey responses were cleaned to remove responses that were not relevant to the economic impact study, similar to the data cleaning process for the bicycle event data collection process.

Analysis from the online surveys provided spending profiles for both in-state and out-of-state touring bicyclists. A total per-day economic impact for touring bicyclists was calculated using IMPLAN multipliers.

Bicycle Touring Companies

A list of companies that support or conduct bicycling tours in Michigan was developed based on information from Michigan tourism websites and Hoovers business listings.[4] Telephone interviews were attempted with representatives from each business on the list covering a variety of topics related to bicycle touring including:

- Types of touring offered;
- Proportion of out-of-state customers;
- Trends in the bicycle touring business; and
- Ways the state could support bicycle touring.

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[3] *Ibid.*

[4] Hoovers business listings represent a comprehensive "phone book" of businesses across the United States. Hoovers does not require businesses to pay a fee to be included in its business listings—it is completely free to listed businesses. Hoovers is accepted as the most comprehensive source of business listings in the nation.

Bicycling and Tourism in Michigan

Many Michigan tourists are drawn to the state due to recreational opportunities such as hiking and bicycling. Secondary research on the relationship between bicycling and the broader Michigan tourism economy was collected from a variety of sources including:

- Pure Michigan;
- Local Chambers of Commerce; and
- Research conducted by Michigan State University's Extension.

Research collected from these entities was summarized and included in the report in order to document the importance of bicycling to non-bicycle-specific tourism, and provide recommendations about future research or initiatives related to bicycling and tourism statewide.

SECTION III.

Economic Impact of Bicycling Events

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Economic Impact of Bicycling Events

In order to estimate the economic benefits to Michigan from out-of-state participation in bicycling events, a comprehensive list of bicycling events was developed based on the League of Michigan Bicyclists (LMB) ride calendar. With input from MDOT staff, a number of large events throughout the state were identified as potential candidates for individual economic impact studies. Based on responses to initial outreach emails and calls, six events were chosen for individual economic impact studies. These studies included intercept data collection with a representative sample of event participants as well as key data from event organizers.

In addition to the intercept survey effort, online survey responses were collected from participants from other events throughout the state. As detailed in the methodology discussion below, information from these surveys and events were combined with information from the intercept survey effort to develop an estimate of the overall economic impact on Michigan due to out-of-state participation in bicycling events. This section provides an overview of the economic impact survey process, case studies of the economic impact for six major events throughout Michigan, an overview of the data collection for non-case study events, and an estimate of the overall economic impact of out-of-state participation in bicycling events in Michigan.

Total Economic Impact

In order to calculate the total economic impact of out-of-state participants, bicycling events were organized into three categories: case study events, targeted events, and all other events. The methodology used to make these distinctions is presented later in this section. Spending profiles were created for each case study event, all targeted events considered together, and all other events considered together.

In total, out-of-state participants in organized bicycling events spent approximately $15.6 million in the state of Michigan in 2014. More than half of these expenditures were made in the categories of food and beverage spending (restaurant/bar expenditures as well as money spent on groceries) and lodging expenses. The economic impact analysis conducted for the study found that out-of-state participants in bicycling events in Michigan were responsible for approximately $21.9 million in economic impact in 2014.

Bicycling Event Economic Impact Surveys

BBC and R. Neuner Consulting worked together to distribute economic impact surveys to bicyclists who participated in any organized bicycling event within the state of Michigan in 2014. As part of the survey effort, staff from R. Neuner conducted intercept surveys of bicyclists at the six case study events identified by the study team. In total, approximately 2,100 surveys were completed by case study event participants.

In addition to the in-person intercept surveys, the study team used the LMB ride calendar to contact bicycle event organizers in the state of Michigan. Event organizers were asked to send out a link to an online survey hosted by Survey Monkey that exactly mirrored the physical survey distributed at the six case study events. Approximately 2,400 online surveys were completed through Survey Monkey.

Prior to data analysis, survey responses were cleaned to remove answers that were not relevant to the economic impact study. Surveys from respondents who indicated that they had not participated in an organized bicycling event in the state of Michigan within the past 12 months were not included in the final analyses.

Additionally, some respondents did not report participating in a specific event. For example, in response to the question that asked which bicycling event had invited the respondent to take the survey, several respondents indicated that they were invited to take the survey by their local bicycle shop or invited through Facebook. These responses were also removed from the final analyses.

Both the online and physical surveys collected demographic and spending information from event participants. The surveys captured expenditures on lodging, food and beverage, shopping and entertainment, bicycles and components, transportation, and event registration. Survey data were used to estimate the total economic impact in Michigan from all out-of-state participants in bicycling events. The survey instrument used to collect the data on bicycling events is included in Appendix D.

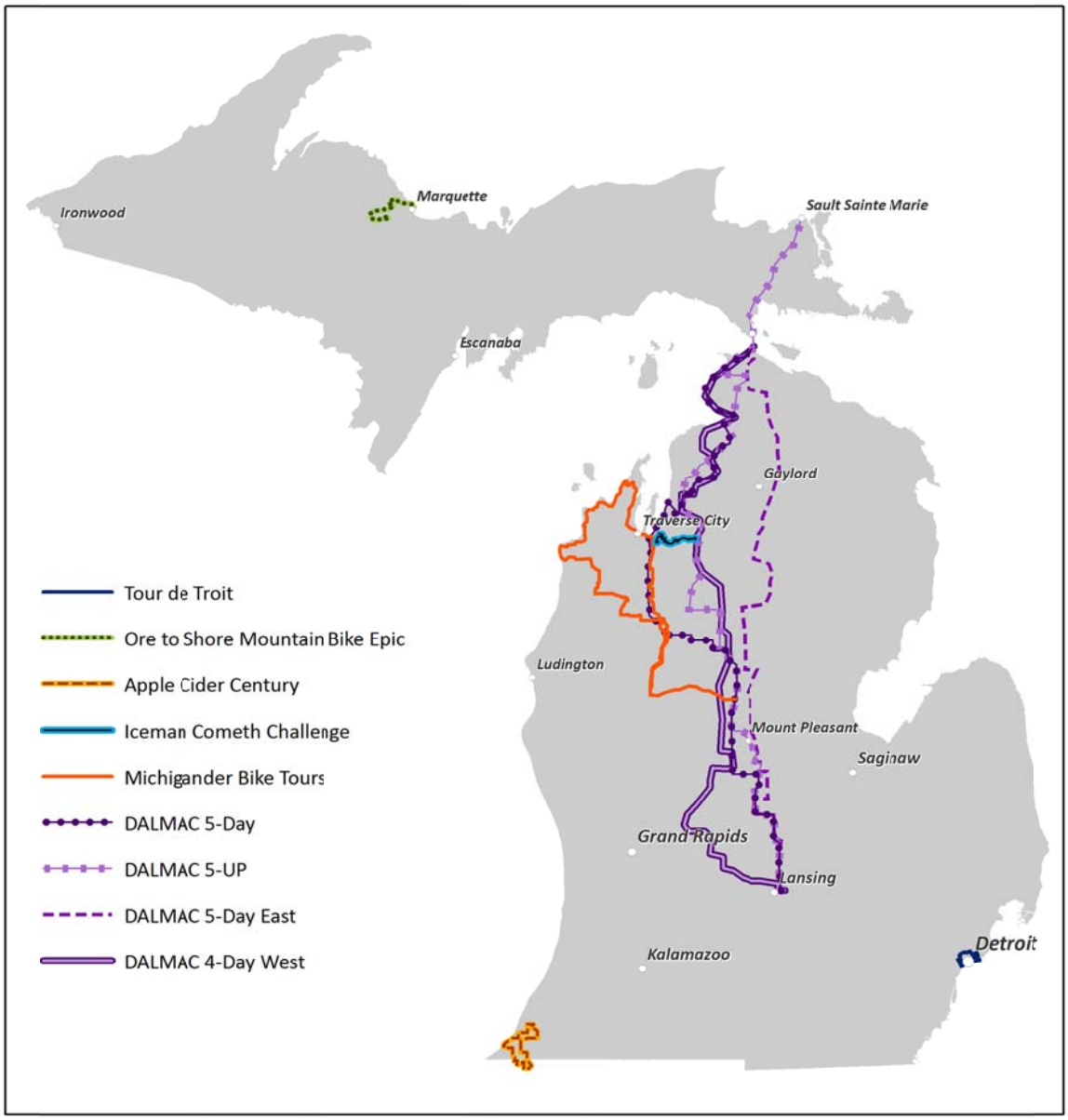
Case Study Events

Six case study events were chosen for individual economic impact studies including:

- The Apple Cider Century;
- DALMAC;
- The Bell's Beer Iceman Cometh Challenge;
- The Michigander;
- The Ore to Shore Mountain Bike Epic; and
- The Tour de Troit.

These events were chosen for their size, geographic diversity, and willingness to participate in the study process. Figure III-1 shows a map of the routes for the six case study events.

Figure III-1.
Case Study Events



Source: BBC Research & Consulting.

Apple Cider Century

The Apple Cider Century (ACC) is an annual one-day 15, 25, 37, 50, 62, 75 or 100 mile bicycle tour of the orchards, forests and wine country in and around Three Oaks, Michigan, located in the southwest corner of the state's lower peninsula. The ride is held each year on the last Sunday in September.

The ACC is a recreational and social tour for bicyclists. It is not intended to be a competitive ride and emphasizes that all participants ride the tour in a safe and intelligent manner.

Since 1974, it has become the Midwest's largest one-day century event (100 miles), regularly reaching over 5,000 cyclists. The ACC is sponsored by the Three Oaks Spokes Bicycle Club. Funds raised are used to finance the Apple Cider Century Tour, the Backroads Bikeway Routes, the Bicycle Museum housed at the Dewey Cannon Trading Company, the League of American Bicyclists, Rails to Trails, and to help fund community youth programs and other nonprofit organization fund raising causes.

Direct spending associated with *all* ACC participants. As a part of the registration process, ACC participants were asked to complete an intercept survey that collected demographic and spending information. Participants were also given the opportunity to participate online after completing the ride. The intercept and online surveys captured participant expenditures on lodging, food and beverage, shopping and entertainment, bicycles and components, transportation, and event registration. Survey respondents were asked to estimate the amount of money that their party spent per day while in Michigan. Survey data were used to estimate total direct spending in Michigan from all ACC attendees.

Figure III-2.
Direct Spending in Michigan by *All* Event Attendees

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Total Direct Spending
Lodging	$470,022
Food and beverage	396,496
Transportation	262,414
Shopping and entertainment	229,968
Registration	208,740
Bicycles	86,640
Total Direct Spending	**$1,654,279**

Figure III-2 shows that ACC attendees spent over $1.6 million in the state of Michigan during the 2014 ACC.

The largest direct impacts on the state of Michigan came from lodging expenditures, food and beverage spending (restaurant/bar expenditures as well as money spent on groceries), and transportation expenses.

Lodging. The surveys asked participants how much they spent on lodging, including money spent on hotels and campgrounds. Figure III-2 shows that ACC participants spent approximately $470,000 on lodging-related expenses while in Michigan.

Food and beverage. Survey respondents were asked to estimate how much they spent on restaurants, bars, and groceries while in Michigan. As shown in Figure III-2, ACC participants spent slightly less than $400,000 during their trips.

Transportation. Survey respondents were asked to estimate the amount of money that their party spent on transportation to and from ACC, including airfare, gasoline, public transportation, car rental or parking. Figure III-2 shows that ACC participants spent more than $260,000 on transportation during their trips.

Shopping and entertainment. Survey respondents were asked to estimate the amount of money that their party spent on non-food shopping such as clothing or souvenirs, as well as non-bicycling entertainment such as amusement parks or movie theaters during their trips. As shown in Figure III-2, ACC participants spent approximately $230,000 during their trips.

Registration expenses. The registration fee for the 2014 ACC was $35. The total registration expenses for the 2014 ACC are calculated as the total number of event participants (approximately 6,000 in 2014) multiplied by the registration fee. Figure III-2 shows that ACC participants spent nearly $210,000 on registration fees to participate in the 2014 ACC.

Bicycles. The surveys asked participants how much they spent on bicycles, components, repairs, and accessories during their trips. Figure III-2 shows that ACC participants spent more than $85,000 during on bicycles and bicycle-related repairs and accessories during their trips.

Spending by non-local participants. In addition to looking at the direct spending of all ACC participants, it is appropriate to examine spending from non-local event participants. Non-local participants are defined as those who travelled from out of state or from more than 50 miles away to participate in the 2014 ACC. BBC analyzed this group's direct spending separately, and results are presented below in Figure III-3.

Figure III-3.
Direct Spending in Michigan from Non-local Participants

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Out-of-State Spending	50+ mile Spending
Lodging	$416,459	$52,682
Food and beverage	343,058	51,207
Transportation	225,419	31,981
Shopping and entertainment	195,867	32,864
Registration	182,070	22,510
Bicycles	71,994	13,967
Total Direct Spending	**$1,434,867**	**$205,212**

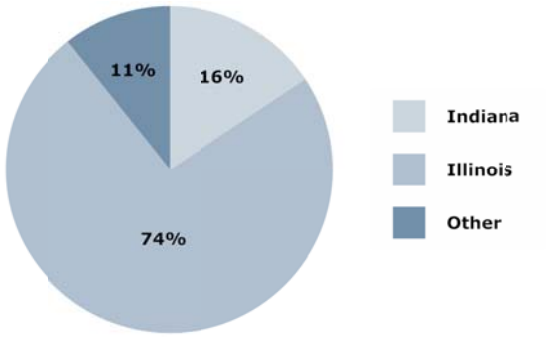
Eighty-seven percent of total ACC participants came to Michigan from out of state, while 11 percent of ACC participants were from Michigan but travelled more than 50 miles to participate in the event. In total, non-local participants accounted for approximately 98 percent of attendance and 99 percent of the total direct expenditures related to the 2014 ACC.

Of the ACC participants that travelled to Michigan from out of state, slightly less than three-fourths (74%), came from Illinois. Sixteen percent of out-of-state ACC attendees travelled to Michigan from Indiana. Full results are presented in Figure III-4.

Figure III-4.
Origin of Out-of-state Attendees

Note:
"Other" includes AK, CA, FL, IA, KS, MN, NE, NY, OH, PA, TX, WI, and WY.

Source:
BBC Research & Consulting.

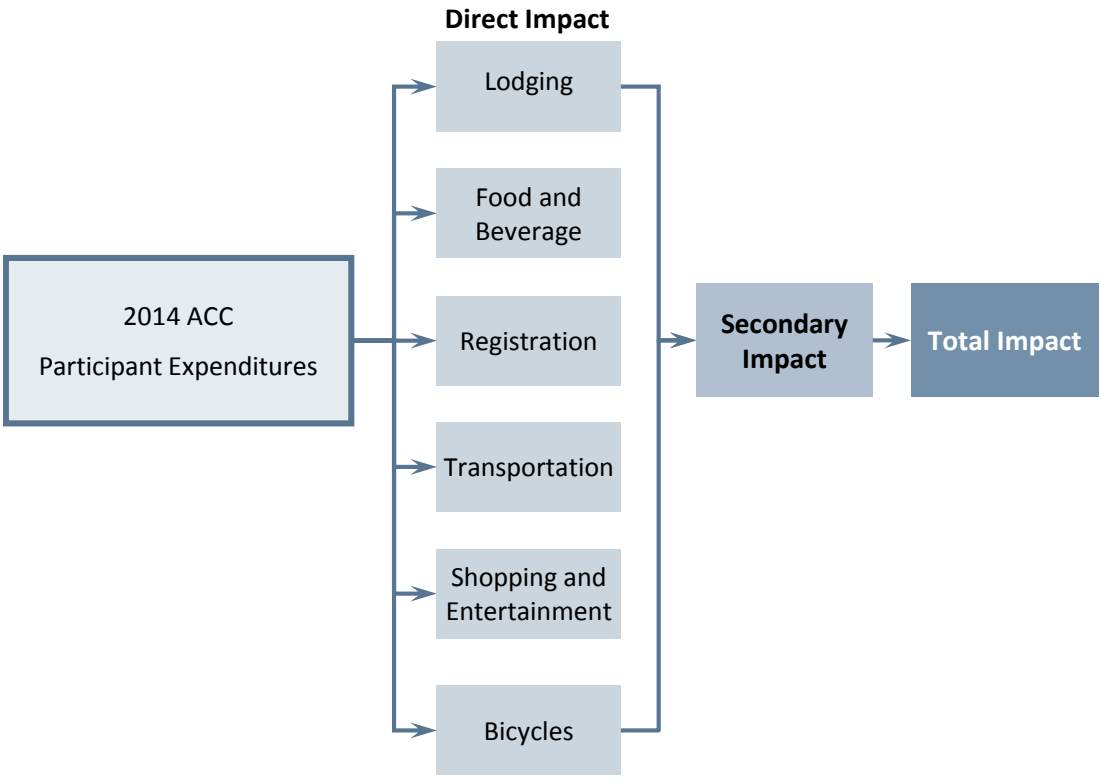


Total economic impact of ACC. The direct spending discussed in the previous section of this report only represents a portion of the total impact of the ACC on the state of Michigan. Spending generated by event participants circulates in the local economy. Businesses where visitors spend their money purchase goods and services from other businesses, and workers spend a portion of their earnings on local goods and services. This recirculation of money in the economy is termed a "secondary impact."

As previously discussed, this impact analysis only includes spending by visitors from outside of Michigan, so that it only captures new spending in the Michigan economy. Spending by Michigan residents is excluded from the overall economic spending reported in this study.

Figure III-5 presents the spending flow model used to trace the flow of dollars generated by the event through the local Michigan economy and determines the total economic impact of the ACC.

Figure III-5.
Spending Flow Model

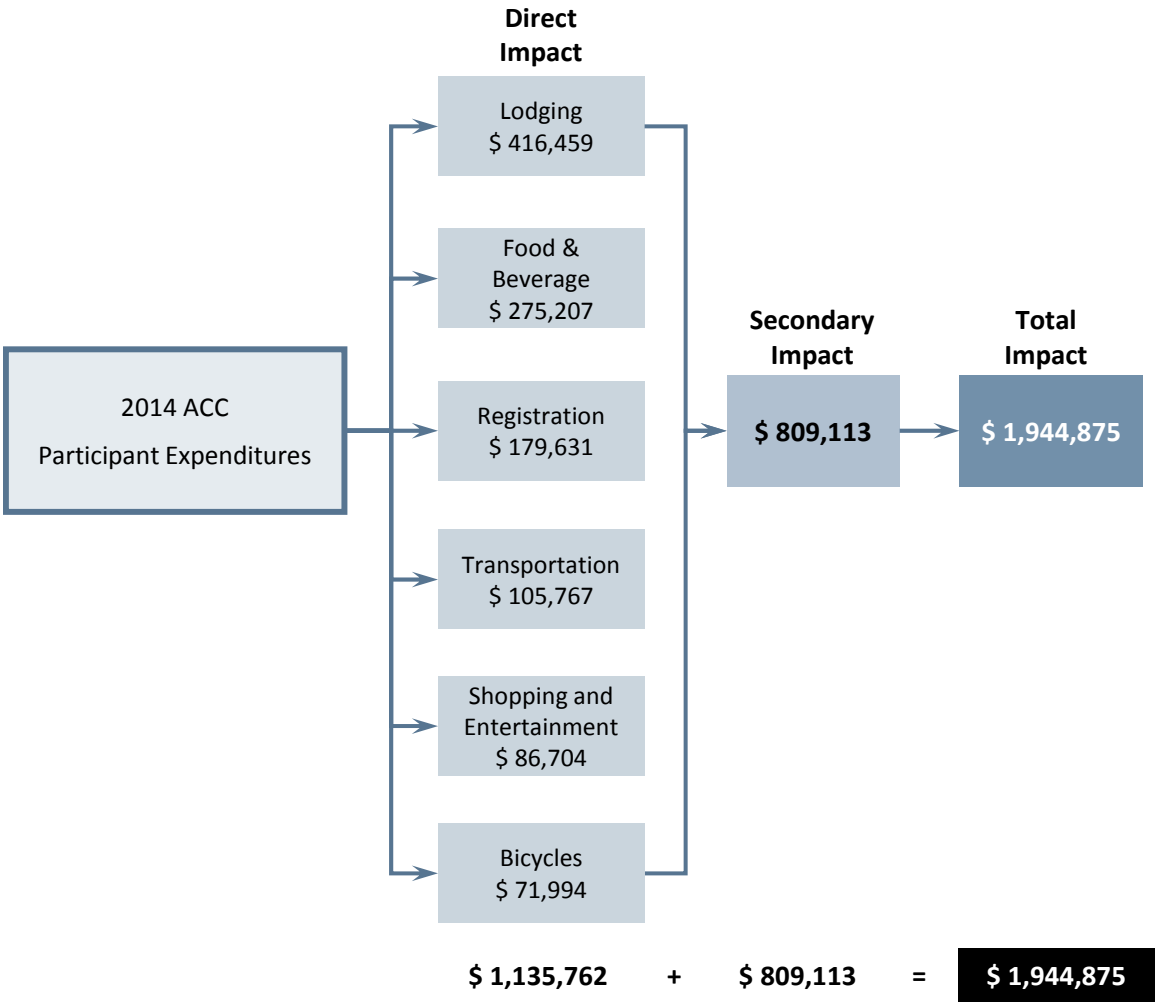


Source: BBC Research & Consulting.

Figure III-6 on the following page shows the direct impacts, secondary impact, and total economic impact associated with the 2014 ACC. It is important to note that this value only includes economic activity generated by out-of-state ACC participants. Adding the direct and secondary impacts, the ACC has a total economic impact of more than $1.9 million on the state of Michigan.

The direct impacts as a result of out-of-state participant's spending are less than the direct expenditures of out-of-state participants. Certain categories of expenditures increase the direct effects associated with those expenditures at a less than one to one ratio. For example, a portion of the direct transportation expenses are estimated to accrue to businesses located outside of the state of Michigan and are not included in the direct impact. Additionally, the direct impacts of food and beverage and shopping and entertainment expenditures are less than the total expenditures in those categories. The direct impacts in these categories represent the marginal value to business owners in those categories — the difference between the amount that an item sells for at retail prices and the amount that the retailer paid to purchase an item from its original producer.

Figure III-6.
Total Economic Impact from Out-of-state Participants, 2014 ACC



Note: Numbers may not add due to rounding.

Source: BBC Research and Consulting.

DALMAC

A long-time, well-known road bicycling tour, DALMAC is shorthand for the Dick Allen Lansing to Mackinac bicycle tour. The ride was founded by state senator Dick Allen, who, in 1971, sought to create an event to demonstrate that bicycles and automobiles could safely share Michigan's scenic roadways. Over the last 45 years, DALMAC has grown from a ride consisting of a dozen or so of Allen's friends to a substantial road touring operation that attracts nearly 1,600 riders per year from across the United States and Canada.

Every year over Labor Day weekend, DALMAC sends riders off from the campus of Michigan State University in East Lansing to complete one of several route options. The route options vary from four to five days and offer a variety of distances and terrain. Some routes finish in Mackinaw City at the northern edge of Michigan's lower peninsula, while the 5-Day East and 5-

UP routes continue across the Mackinac Bridge, through a special program with the Mackinac Bridge Authority and MDOT escorting cyclists safely across.

The traditional 5-Day route follows a similar path as the West route, with an extra day to enjoy the sights. The East route climbs to the famous Houghton/Higgins Lakes area and concludes with a spectacular and breathtaking ride over the Mackinac Bridge, or "Mighty Mac," before ending in St Ignace. The 5-UP route also includes a crossing of the Mackinac Bridge but continues on through the Upper Peninsula to finish at Sault Ste. Marie.

Each night on the tour, DALMAC participants camp at community sites (such as schools) and eat meals at school cafeterias. These overnights are often fundraising events for the schools and other facilities that host DALMAC riders. Some riders also take advantage of private support and gear (SAG) and camping services.

Proceeds from the DALMAC help support the DALMAC Fund, which grants monies to applicants for bicycling safety, bicycling advocacy, and some infrastructure projects each year. The Fund has awarded over $1.2 million in grants to biking-related causes over the past 30 years.[1]

Direct spending associated with *all* DALMAC participants. As a part of the registration process, DALMAC participants were asked to complete an intercept survey that collected demographic and spending information. Participants were also given the opportunity to participate online after completing the ride. The intercept and online surveys captured participant expenditures on lodging, food and beverage, shopping and entertainment, bicycles and components, transportation, and event registration. Survey respondents were asked to estimate the amount of money that their party spent per day while in Michigan. Survey data were used to estimate total direct spending in Michigan from all DALMAC participants.

Figure III-7.
Direct Spending in Michigan by *All* Event Attendees

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Total Direct Spending
Registration	$386,169
Food and beverage	251,142
Lodging	195,037
Transportation	130,202
Bicycles	116,237
Shopping and entertainment	97,886
Total Direct Spending	**$1,176,673**

Figure III-7 shows that DALMAC participants spent over $1.1 million in the state of Michigan during the 2014 DALMAC.

The largest direct impacts on the state of Michigan came from registration fees paid directly to the event, food and beverage spending, and lodging expenses.

[1] http://www.lansingstatejournal.com/story/travel/michigan/2014/08/27/dalmac-draws-riders-th-year/14686651/

Registration expenses. DALMAC participants were asked which ride they participated in — 5-Day (traditional), 5-Day UP, 5-Day East, or 4-Day West. The five-day events have higher registration costs than the four-day event. BBC calculated a weighted average of registration fees based on which event survey respondents indicated participating in.

Figure III-7 shows that, in total, approximately 1,700 DALMAC attendees spent over $385,000 on registration fees to participate in the 2014 DALMAC.

Food and beverage. Survey respondents were asked to estimate how much they spent on restaurants, bars, and groceries while in Michigan. As shown in Figure III-7, DALMAC attendees spent approximately $250,000 during their trips.

Lodging. The surveys asked participants how much they spent on lodging, including money spent on hotels and campgrounds. Figure III-7 shows that DALMAC attendees spent approximately $195,000 on lodging-related expenses while in Michigan.

Transportation. Survey respondents were asked to estimate the amount of money that their party spent on transportation to and from DALMAC, including airfare, gasoline, public transportation, car rental or parking. Figure III-7 shows that DALMAC attendees spent nearly $130,000 on transportation during their trips.

Bicycles. The surveys asked participants how much they spent on bicycles, components, repairs, and accessories during their trips. Figure III-7 shows that DALMAC attendees spent more than $115,000 during on bicycles and bicycle-related repairs and accessories during their trips.

Shopping and entertainment. Survey respondents were asked to estimate the amount of money that their party spent on non-food shopping such as clothing or souvenirs, as well as non-bicycling entertainment such as amusement parks or movie theaters during their trips. As shown in Figure III-7, DALMAC attendees spent approximately $95,000 during their trips.

Spending by non-local attendees. In addition to looking at the direct spending of all DALMAC attendees, it is appropriate to examine spending from non-local event participants. Non-local participants are defined as those who travelled from out of state or from more than 50 miles away to participate in the 2014 DALMAC. BBC analyzed this group's direct spending separately, and results are presented in Figure III-8.

Figure III-8.
Direct Spending in Michigan from Non-local Attendees

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Out-of-State Spending	50+ mile Spending
Registration	$56,202	$125,209
Food and beverage	50,081	78,278
Lodging	25,828	73,735
Transportation	29,751	33,405
Bicycles	15,232	35,197
Shopping and entertainment	25,149	25,345
Total Direct Spending	**$202,243**	**$371,170**

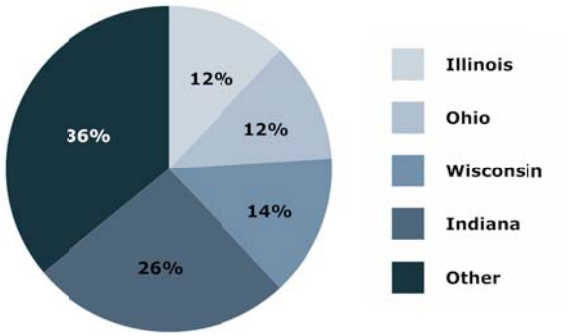
Fifteen percent of total attendees came to Michigan from out of state, while one-third of DALMAC attendees were from Michigan but travelled more than 50 miles to participate in the event. In total, non-local attendees accounted for approximately 47 percent of attendance and 49 percent of the total direct expenditures related to the 2014 DALMAC.

Of the DALMAC participants that travelled to Michigan from out of state, slightly less than two-thirds (64%) came from the nearby states of Illinois, Indiana, Ohio, and Wisconsin. Thirty-six percent of out-of-state DALMAC attendees travelled to Michigan from states farther away. These results are presented in Figure III-9.

Figure III-9.
Origin of Out-of-state Attendees

Note:
"Other" includes CA, FL, MA, MN, MO, NC, NJ, NY, PA, TX, VA, and WA.

Source:
BBC Research & Consulting.



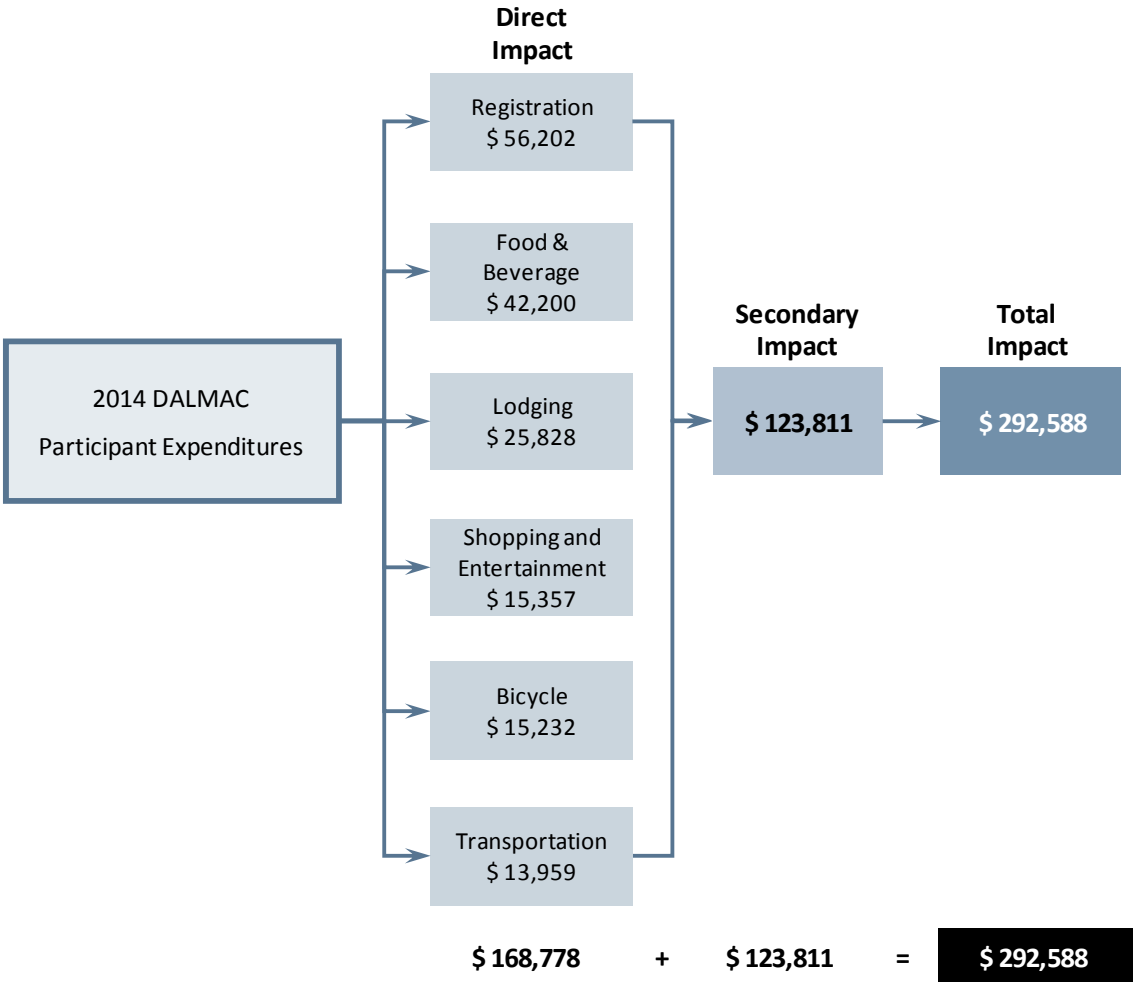
Total economic impact of DALMAC. The direct spending represents one component of the total impact of the DALMAC on the state of Michigan. Spending generated by event participants circulates in the economy, creating a "secondary impact."

This impact analysis only includes spending by DALMAC participants from outside of Michigan, so that it only captures spending in the Michigan economy that occurs due to the event.

For some expenditure categories, a substantial portion of the retail price is associated with manufacturing or processing that occurs outside of Michigan. As a result, the ratio of direct spending to the direct economic impact for these categories is less than one.

Figure III-10 shows the direct impacts, secondary impact, and total economic impact associated with the 2014 DALMAC. It is important to note that this value only includes economic activity generated by out-of-state DALMAC attendees. Adding the direct and secondary impacts, the DALMAC has a total economic impact of approximately $290,000 on the state of Michigan.

Figure III-10.
Total Economic Impact from Out-of-state Participants, 2014 DALMAC



Note: Numbers may not add due to rounding.

Source: BBC Research and Consulting.

The Bell's Beer Iceman Cometh Challenge

The first Iceman Cometh was held in 1990 and was less of a race than an adventure and an experiment — one to see if mountain bikes could make the journey from Kalkaska to Traverse City. The initial ride was a success and the $5 entry fee included a post-race barbecue at Jellystone Park in Traverse City.

Today, the Bell's Beer Iceman Cometh is a point-to-point mountain bike race, traditionally held on the first Saturday of November. The race starts in downtown Kalkaska and travels through the Pere Marquette State Forest, finishing approximately 29 miles away at a recreation resort on the eastern edge of Traverse City. On the way riders roll over paved roads, dirt roads, two tracks, abandoned railroad beds, and parts of the Vasa Nordic ski trail.

In addition to the 29-mile race, the Meijer Slush Cup offers younger riders an eight-mile loop version of the event that starts at Timber Ridge and follows the Vasa 10K ski trail. Both races have sold out within hours when registration opens each March.

In its 25th year, the Iceman attracted approximately 5,500 registrants from across the United States and from as far away as Australia. According to race organizers, about 30 riders were professional racers.[2]

Both professional and amateur categories are eligible for cash prizes with a minimum cash purse of more than $50,000.[3] In 2014, Michigan Youth Cycling awarded three scholarships to the top three finishers in the MYC 12-18 categories for both male and female bicyclists.

Direct spending associated with *all* Iceman participants. As a part of the registration process, Iceman participants were asked to complete an intercept survey that collected demographic and spending information. Participants were also given the opportunity to participate online after completing the ride. The intercept and online surveys captured participant expenditures on lodging, food and beverage, shopping and entertainment, bicycles and components, transportation, and event registration. Survey respondents were asked to estimate the amount of money that their party spent per day while in Michigan. Survey data were used to estimate total direct spending in Michigan from all Iceman attendees.

Figure III-11.
Direct Spending in Michigan by *All* Event Attendees

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Total Direct Spending
Lodging	$622,904
Food and beverage	548,224
Registration	366,750
Transportation	346,179
Shopping and entertainment	285,061
Bicycles	185,865
Total Direct Spending	**$2,354,983**

Figure III-11 shows that Iceman attendees spent approximately $2.3 million in the state of Michigan during the 2014 Iceman Cometh.

The largest direct impacts on the state of Michigan came from lodging expenses, food and beverage spending, and registration fees paid directly to the event.

Lodging. The surveys asked participants how much they spent on lodging, including money spent on hotels and campgrounds. Figure III-11 shows that Iceman attendees spent approximately $620,000 on lodging-related expenses while in Michigan.

[2] http://www.ahealthiermichigan.org/2014/11/06/gear-up-for-the-iceman-cometh-challenge/

[3] http://www.iceman.com/pages/awards

Food and beverage. Survey respondents were asked to estimate how much they spent on restaurants, bars, and groceries while in Michigan. As shown in Figure III-11, Iceman attendees spent slightly less than $550,000 during their trips.

Registration expenses. The registration fee for the 2014 Iceman was $75. The total registration expenses for the 2014 Iceman are calculated as the total number of event participants (approximately 4,900 in 2014) multiplied by the registration fee. Figure III-11 shows that Iceman participants spent more than $365,000 on registration fees to participate in the 2014 Iceman Cometh.

Transportation. Survey respondents were asked to estimate the amount of money that their party spent on transportation to and from Iceman, including airfare, gasoline, public transportation, car rental or parking. Figure III-11 shows that Iceman attendees spent nearly $350,000 on transportation during their trips.

Shopping and entertainment. Survey respondents were asked to estimate the amount of money that their party spent on non-food shopping such as clothing or souvenirs, as well as non-bicycling entertainment such as amusement parks or movie theaters during their trips. As shown in Figure III-11, Iceman attendees spent more than $285,000 during their trips.

Bicycles. The surveys asked participants how much they spent on bicycles, components, repairs, and accessories during their trips. Figure III-11 shows that Iceman attendees spent more than $185,000 on bicycles and bicycle-related repairs and accessories during their trips.

Spending by non-local attendees. In addition to looking at the direct spending of all Iceman attendees, it is appropriate to examine spending from non-local event participants. Non-local participants are defined as those who travelled from out of state, or from more than 50 miles to participate in the 2014 Iceman. BBC analyzed this group's direct spending separately, and results are presented below in Figure III-12.

Figure III-12.
Direct Spending in Michigan from Non-local Attendees

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Out-of-State Spending	50+ mile Spending
Lodging	$272,597	$319,828
Food and beverage	203,240	300,959
Registration	131,925	190,344
Transportation	171,640	137,775
Shopping and entertainment	102,554	154,741
Bicycles	57,138	105,129
Total Direct Spending	**$939,094**	**$1,208,775**

Thirty-six percent of total attendees came to Michigan from out of state, while more than half (52%) of Iceman attendees were from Michigan but travelled more than 50 miles to participate in the event. In total, non-local attendees accounted for approximately 88 percent of attendance and 91 percent of the total direct expenditures related to the 2014 Iceman Cometh.

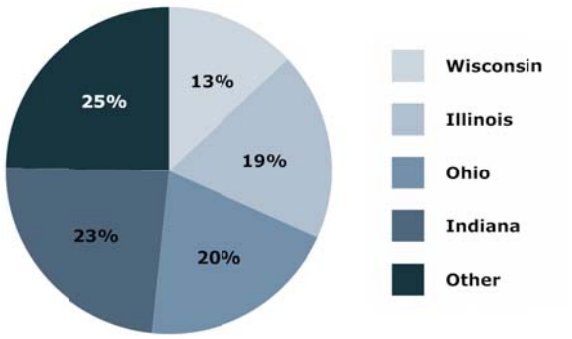
Iceman event organizers were able to provide a registration log that included information on rider's states of origin. Using this list the study team calculated that of the Iceman participants

that travelled to Michigan from out of state, three-fourths came from the nearby states of Illinois, Indiana, Ohio, and Wisconsin. Twenty-five percent of out-of-state Iceman attendees travelled to Michigan from states farther away. These results are presented in Figure III-13.

Figure III-13.
Origin of Out-of-state Attendees

Note:
"Other" includes 32 states as well as Canada and Australia.

Source:
BBC Research & Consulting.



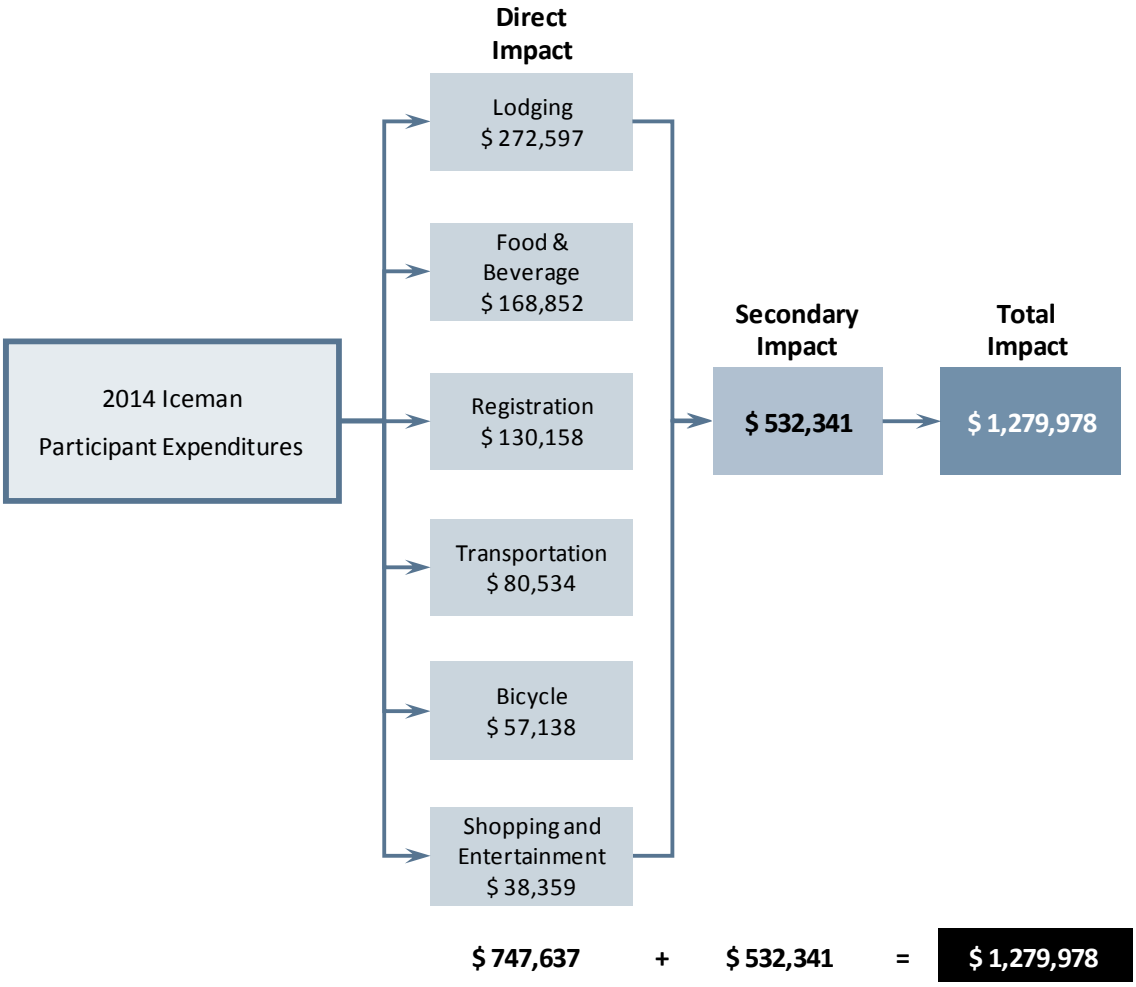
Total economic impact of Iceman Cometh. Recirculation of direct spending in the economy creates a "secondary impact." Adding the direct and secondary impacts provides an estimate of the total economic impact on the state.

As previously discussed, this impact analysis only includes spending by visitors from outside of Michigan. Spending by Michigan residents is excluded from the overall economic spending reported in this study.

For some participant expenditures, a substantial portion of the retail price is associated with manufacturing or processing that occurs outside of Michigan. As a result, the ratio of direct spending to the direct economic impact for these categories is less than one.

Figure III-14 shows the direct impacts, secondary impact, and total economic impact associated with the 2014 Iceman. It is important to note that this value only includes economic activity generated by out-of-state Iceman attendees. Adding the direct and secondary impacts, the Iceman has a total economic impact of approximately $1.3 million on the state of Michigan.

Figure III-14.
Total Economic Impact from Out-of-state Participants, 2014 Iceman



Note: Numbers may not add due to rounding.

Source: BBC Research and Consulting.

Michigander

The Michigander Bicycle Tour started in 1992 as a collaborative effort between the Michigan Rails to Trails Conservancy (RTC) and the Detroit Free Press. At the time, the concept of converting abandoned railroad beds into recreational "rail trails" was a new idea, still awaiting widespread public support.

Today the Michigander is a popular road biking tour that showcases Michigan's national leadership on rails-to-trails. There are two route options: a two-day tour — a great choice for families and first-time riders who want to experience what bicycle touring entails; and a six day tour, which offers riders the chance to extend their fun and challenge their fitness over a week of riding.

The Michigander was named one of the "Top 10 Multi-Day Rides in America" by *Bicycling Magazine.* The ride combines beautiful views along the Great Lakes on paved and crushed

limestone surface trails with ample options for activities and entertainment in small towns along the way.

All proceeds from the tour benefit the nonprofit Michigan Trails to Greenways Alliance and their efforts to connect Michigan through a statewide system of trails.

Direct spending associated with *all* Michigander participants. As a part of the registration process, Michigander participants were asked to complete an intercept survey that collected demographic and spending information. Participants were also given the opportunity to participate online after completing the ride. The intercept and online surveys captured participant expenditures on lodging, food and beverage, shopping and entertainment, bicycles and components, transportation, and event registration. Survey respondents were asked to estimate the amount of money that their party spent per day while in Michigan. Survey data were used to estimate total direct spending in Michigan from all Michigander attendees.

Figure III-15.
Direct Spending in Michigan by *All* Event Attendees

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Total Direct Spending
Registration	$175,450
Food and beverage	113,319
Lodging	62,990
Shopping and entertainment	52,877
Transportation	40,783
Bicycles	31,653
Total Direct Spending	**$477,071**

Figure III-15 shows that Michigander attendees spent approximately $480,000 in the state of Michigan during the 2014 Michigander.

The largest direct impacts on the state of Michigan came from registration fees paid directly to the event and food and beverage spending.

Registration expenses. Michigander participants (643 in 2014) were asked which ride they participated in — the 2-Day, 6-Day, or 7-Day ride. The six- and seven-day events have higher registration costs than the two-day event. BBC calculated a weighted average of registration fees based on which event survey respondents indicated participating in.

Figure III-15 shows that, in total, Michigander attendees spent over $175,000 on registration fees to participate in the 2014 Michigander.

Food and beverage. Survey respondents were asked to estimate how much they spent on restaurants, bars, and groceries while in Michigan. As shown in Figure III-15, Michigander attendees spent slightly less than $115,000 during their trips.

Lodging. The surveys asked participants how much they spent on lodging, including money spent on hotels and campgrounds. Figure III-15 shows that Michigander attendees spent approximately $65,000 on lodging-related expenses while in Michigan.

Shopping and entertainment. Survey respondents were asked to estimate the amount of money that their party spent on non-food shopping such as clothing or souvenirs, as well as non-bicycling entertainment such as amusement parks or movie theaters during their trips. As shown in Figure III-15, Michigander attendees spent more than $50,000 during their trips.

Transportation. Survey respondents were asked to estimate the amount of money that their party spent on transportation to and from the Michigander, including airfare, gasoline, public transportation, car rental or parking. Figure III-15 shows that Michigander attendees spent slightly more than $40,000 on transportation during their trips.

Bicycles. The surveys asked participants how much they spent on bicycles, components, repairs, and accessories during their trips. Figure III-15 shows that Michigander attendees spent more than $30,000 on bicycles and bicycle-related repairs and accessories during their trips.

Spending by non-local attendees. In addition to looking at the direct spending of all Michigander attendees, it is appropriate to examine spending from non-local event participants. Non-local participants are defined as those who travelled from out of state, or from more than 50 miles to participate in the 2014 Michigander. BBC analyzed this group's direct spending separately, and results are presented below in Figure III-16.

Figure III-16.
Direct Spending in Michigan from Non-local Attendees

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Out-of-State Spending	50+ mile Spending
Registration	$35,043	$125,688
Food and beverage	35,151	68,350
Lodging	17,294	42,306
Shopping and Entertainment	16,809	32,776
Transportation	15,300	21,096
Bicycles	6,324	23,391
Total Direct Spending	**$125,920**	**$313,607**

Sixteen percent of total attendees came to Michigan from out of state, while three-quarters of Michigander attendees were from Michigan but travelled more than 50 miles to participate in the event. In total, non-local attendees accounted for approximately 92 percent of attendance and 92 percent of the total direct expenditures related to the 2014 Michigander.

Michigander event organizers provided the study team with the number of out-of-state participants, but did not provide a full registration log. The study team attempted to determine the states of origin of the out-of-state attendees using survey responses, but did not receive a large enough sample of responses to estimate with confidence the states of origin for out-of-state attendees. Of the surveys that were completed by out-of-state attendees, respondents came to Michigan from 16 different states.

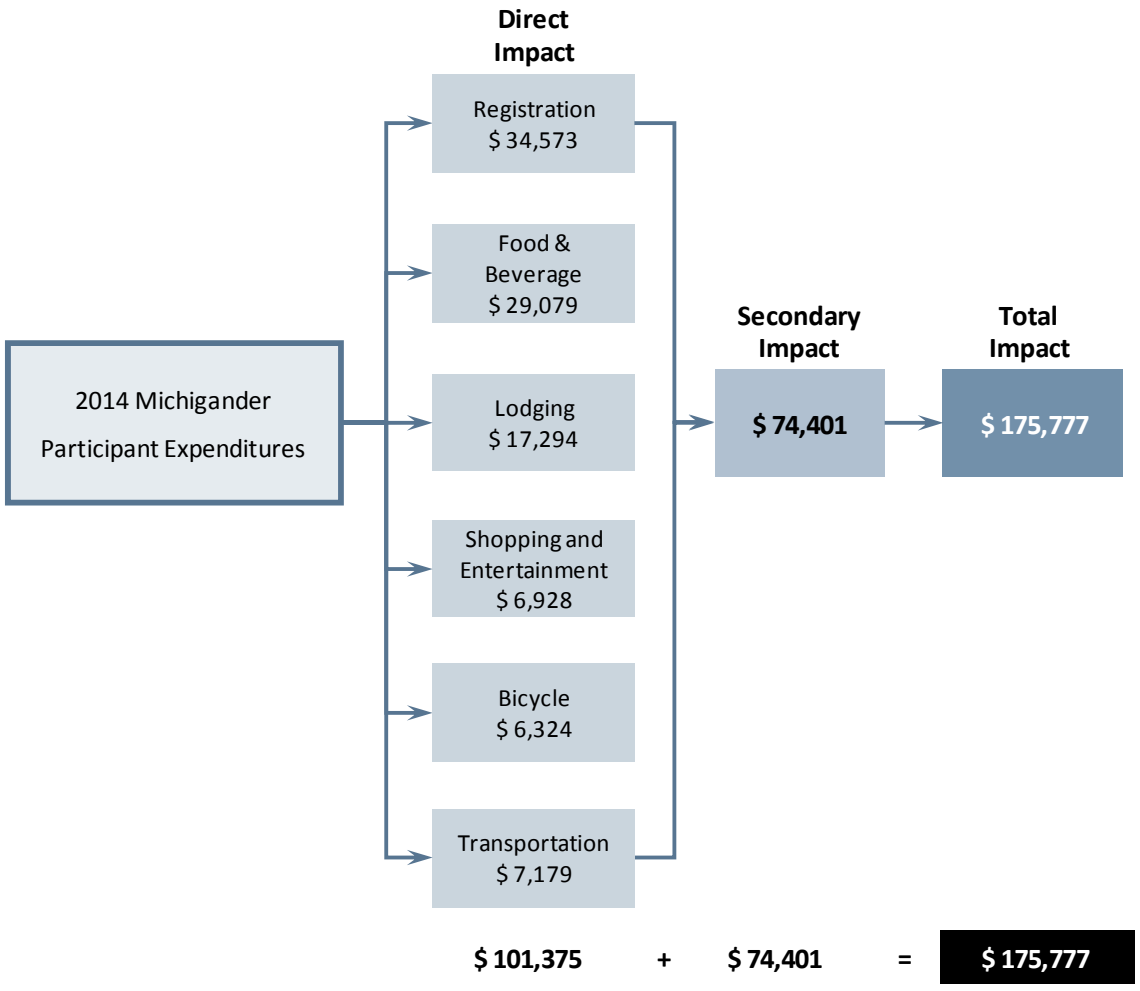
Total economic impact of Michigander. Direct spending by Michigander participants circulates through the state economy and creates a "secondary impact." The total economic impact is calculated by adding the direct and secondary impact.

As previously discussed, this impact analysis only includes spending by visitors from outside of Michigan, so that it only captures new spending in the Michigan economy. Spending by Michigan residents is excluded from the overall economic spending reported in this study.

For some participant expenditures, a substantial portion of the retail price is associated with manufacturing or processing that occurs outside of Michigan. As a result, the ratio of direct spending to the direct economic impact for these categories is less than one (e.g. this might represent the retail margin).

Figure III-17 shows the direct impacts, secondary impact, and total economic impact associated with the 2014 Michigander. It is important to note that this value only includes economic activity generated by out-of-state Michigander attendees. Adding the direct and secondary impacts, the Michigander has a total economic impact of approximately $176,000 on the state of Michigan.

Figure III-17.
Total Economic Impact from Out-of-state Participants, 2014 Michigander



Note: Numbers may not add due to rounding.

Source: BBC Research and Consulting.

Ore to Shore

The Ore to Shore Mountain Bike Race is the largest mass start point-to-point mountain bike race in the state of Michigan, held in Marquette County in Michigan's Upper Peninsula. The Ore to Shore has grown over the last 16 years, from 480 racers in 1999 to over 2,500 racers in 2014.

The race attracts riders from across the Great Lakes region to the challenge of completing a 28-mile or 48-mile course. Given the point-to-point nature of the event, the start line is the town of Neguanee, the site of the first discovery of iron ore in the Superior region of the United States. Racers travel along a course that takes them through Ishpeming, past long-ago abandoned sites of underground ore mining, through wooded wilderness, and finally into the City of Marquette near the shores of Lake Superior.

There is also a 10-mile Shore Rock route for entry-level racers and kids wanting to participate. The Shore Rock course is a circle that starts and ends in Marquette.

Race organizers attribute the success of the Ore to Shore to a combination of factors, including the terrain in Marquette County, located on the southern shores of Lake Superior. With the Lake as a backdrop, racers enjoy magnificent views along a course that begins a gradual descent at about 20 miles out from the finish line.

Race organizers have paired the event packet pick up with a large expo event featuring dozens of vendors. Prize money is awarded to top finishers in both the Hard Rock and Soft Rock race categories.

Direct spending associated with *all* Ore to Shore participants. As a part of the registration process, Ore to Shore participants were asked to complete an intercept survey that collected demographic and spending information. Participants were also given the opportunity to participate online after completing the ride. The intercept and online surveys captured participant expenditures on lodging, food and beverage, shopping and entertainment, bicycles and components, transportation, and event registration. Survey respondents were asked to estimate the amount of money that their party spent per day while in Michigan. Survey data were used to estimate total direct spending in Michigan from all Ore to Shore attendees.

Figure III-18.
Direct Spending in Michigan by *All* Event Attendees

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Total Direct Spending
Food and beverage	$317,282
Lodging	312,584
Transportation	140,191
Shopping and Entertainment	124,076
Registration	97,500
Bicycles	41,719
Total Direct Spending	**$1,033,352**

Figure III-18 shows that Ore to Shore attendees spent more than one million dollars in the state of Michigan during the 2014 Ore to Shore.

The largest direct impacts on the state of Michigan came from food and beverage spending and lodging expenditures.

Food and beverage. Survey respondents were asked to estimate how much they spent on restaurants, bars, and groceries while in Michigan. As shown in Figure III-18, Ore to Shore attendees spent more than $315,000 during their trips.

Lodging. The surveys asked participants how much they spent on lodging, including money spent on hotels and campgrounds. Figure III-18 shows that Ore to Shore attendees spent more than $310,000 on lodging-related expenses while in Michigan.

Transportation. Survey respondents were asked to estimate the amount of money that their party spent on transportation to and from Ore to Shore, including airfare, gasoline, public transportation, car rental or parking. Figure III-18 shows that Ore to Shore attendees spent slightly more than $140,000 on transportation during their trips.

Shopping and entertainment. Survey respondents were asked to estimate the amount of money that their party spent on non-food shopping such as clothing or souvenirs, as well as non-bicycling entertainment such as amusement parks or movie theaters during their trips. As shown in Figure III-18, Ore to Shore attendees spent approximately $125,000 during their trips.

Registration expenses. Total registration expenses for the 2014 Ore to Shore are calculated as the total number of event participants (approximately 1300 in 2014) multiplied by the registration fee. Figure III-18 shows that Ore to Shore participants spent approximately $100,000 on registration fees to participate in the 2014 Ore to Shore.

Bicycles. The surveys asked participants how much they spent on bicycles, components, repairs, and accessories during their trips. Figure III-18 shows that Ore to Shore attendees spent more than $40,000 on bicycles and bicycle-related repairs and accessories during their trips.

Spending by non-local attendees. In addition to looking at the direct spending of all Ore to Shore attendees, it is appropriate to examine spending from non-local event participants. Non-local participants are defined as those who travelled from out of state, or from more than 50 miles to participate in the 2014 Ore to Shore. BBC analyzed this group's direct spending separately, and results are presented below in Figure III-19.

Figure III-19.
Direct Spending in Michigan from Non-local Attendees

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Out-of-State Spending	50+ mile Spending
Food and beverage	$253,567	$60,460
Lodging	254,506	54,190
Transportation	105,136	30,064
Shopping and Entertainment	101,263	20,948
Registration	68,250	25,920
Bicycles	30,248	10,521
Total Direct Spending	**$812,971**	**$202,103**

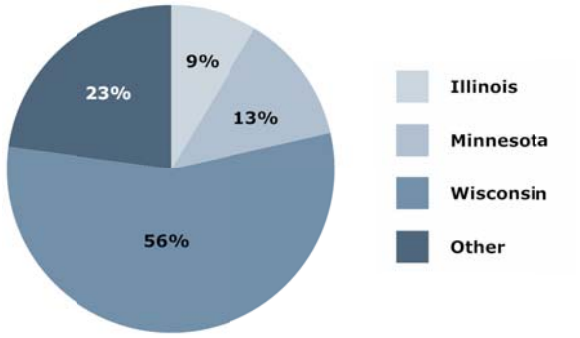
Seventy percent of total attendees came to Michigan from out of state, while more than one-quarter (27%) of Ore to Shore attendees were from Michigan but travelled more than 50 miles to participate in the event. In total, non-local attendees accounted for approximately 97 percent of attendance and 98 percent of the total direct expenditures related to the 2014 Ore to Shore.

Of the Ore to Shore participants that travelled to Michigan from out of state, more than half came from Wisconsin. Full results are presented in Figure III-20.

Figure III-20.
Origin of Out-of-state Attendees

Note:
"Other" includes CA, CO, FL, HI, IA, IN, KS, KY, MT, NH, OH, OR, and SD.

Source:
BBC Research & Consulting.



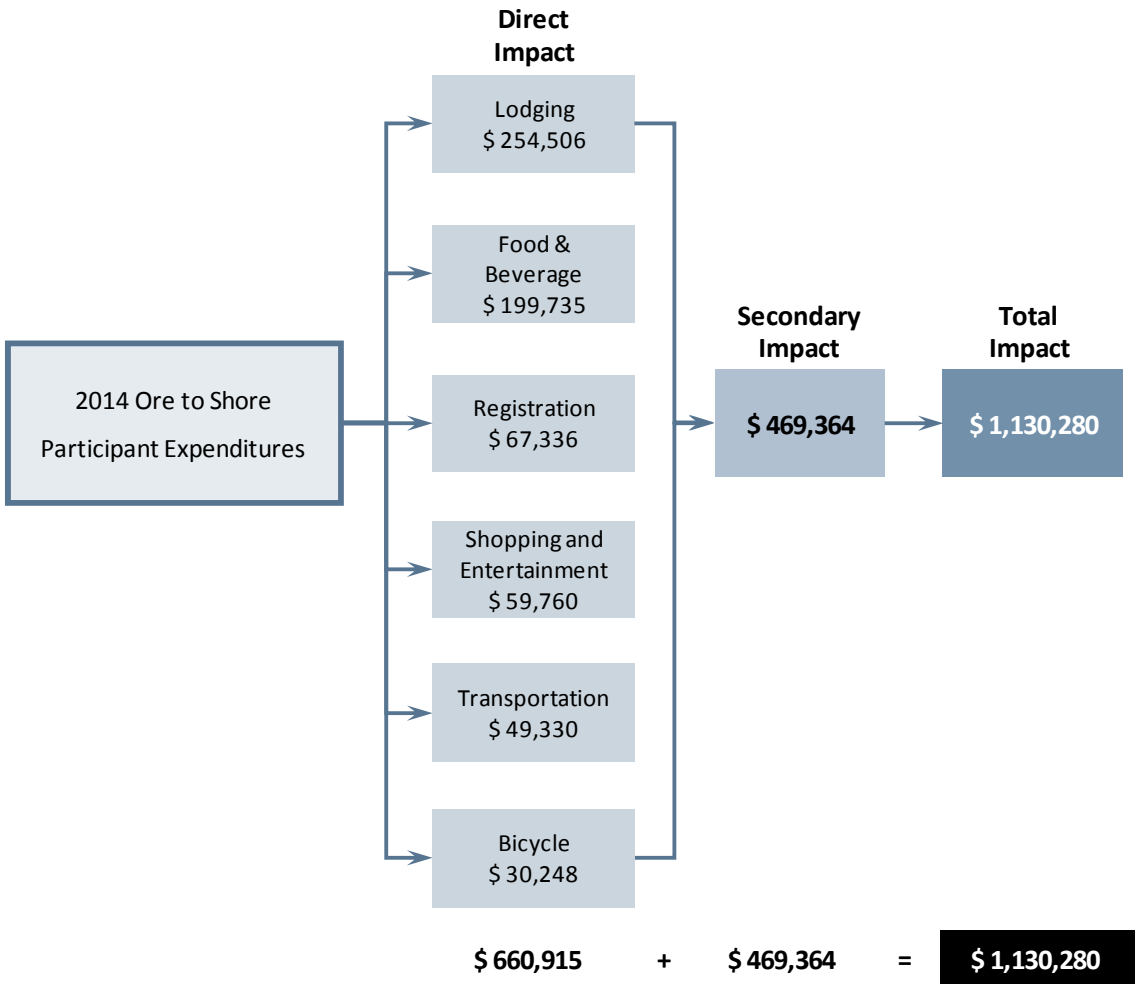
Total economic impact of Ore to Shore. The circulation of direct spending in the Michigan economy creates a "secondary impact." The total economic impact of Ore to Shore on the Michigan economy is the sum of the direct and secondary impacts associated with the event.

As previously discussed, this impact analysis only includes spending by visitors from outside of Michigan, so that it only captures new spending in the Michigan economy. Spending by Michigan residents is excluded from the overall economic spending reported in this study.

For some expenditure categories, a substantial portion of the retail price is associated with manufacturing or processing that occurs outside of Michigan. As a result, the ratio of direct spending to the direct economic impact for these categories is less than one.

Figure III-21 shows the direct impacts, secondary impact, and total economic impact associated with the 2014 Ore to Shore. It is important to note that this value only includes economic activity generated by out-of-state Ore to Shore attendees. Adding the direct and secondary impacts, the Ore to Shore has a total economic impact of approximately $1.1 million on the state of Michigan.

Figure III-21.
Total Economic Impact from Out-of-state Participants, 2014 Ore to Shore



Note: Numbers may not add due to rounding.

Source: BBC Research and Consulting.

Tour de Troit

The Tour de Troit (TdT) is a one-day urban bicycle ride that explores some of the Detroit's most historic areas, takes in many of its most breathtaking sights, and provides bicyclists a unique opportunity to enjoy the streets of the Motor City with thousands of bicyclists.

As the city's largest cycling event, TdT raises awareness of biking as a mode of transportation and publicizes the growing greenways network in the City of Detroit and Southeast Michigan. In its first year in 2001, the TdT was supported with a bike trailer equipped with a cooler, pump and some tools, while T-shirt sales helped offset the expense of print materials and other expenses. The ride drew 50 people. In 2014, the TdT has grown to be the largest bicycling event in the state of Michigan, drawing over 7,500 riders. This exponential growth is an example of the growth of urban bicycling in Michigan and a renewed interest in the City of Detroit. Since 2005,

the Tour de Troit ride has raised over $180,000 for the greenways network and non-motorized transportation projects in Detroit.[4]

TdT has two route options. The first — and primary — is a leisurely ride of 30 miles with police escort on a closed route with sweeper- and SAG support. For experienced cyclists, the Tour de Troit offers a metric century (62 miles) option that does not include police escort. Ride organizers report that they spend over $100,000 to support the ride's police presence.

Direct spending associated with *all* TdT participants. As a part of the registration process, TdT participants were asked to complete an intercept survey that collected demographic and spending information. Participants were also given the opportunity to participate online after completing the ride. The intercept and online surveys captured participant expenditures on lodging, food and beverage, shopping and entertainment, bicycles and components, transportation, and event registration. Survey respondents were asked to estimate the amount of money that their party spent per day while in Michigan. Survey data were used to estimate total direct spending in Michigan from all TdT attendees.

Figure III-22.
Direct Spending in Michigan by *All* Event Attendees

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Total Direct Spending
Registration	$224,945
Transportation	200,072
Food and beverage	192,155
Lodging	128,051
Shopping and entertainment	71,850
Bicycles	59,045
Total Direct Spending	**$876,117**

Figure III-22 shows that TdT attendees spent approximately $880,000 in the state of Michigan during the 2014 TdT.

The largest direct impacts on the state of Michigan came from registration fees paid directly to the event, transportation expenditures, and food and beverage spending.

Registration expenses. Total registration expenses for the 2014 TdT are calculated as the total number of event participants (approximately 7,500 in 2014) multiplied by the registration fee. Figure III-22 shows that TdT participants spent nearly $225,000 on registration fees to participate in the 2014 TdT.

Transportation. Survey respondents were asked to estimate the amount of money that their party spent on transportation to and from TdT, including airfare, gasoline, public transportation, car rental or parking. Figure III-22 shows that TdT attendees spent slightly more than $200,000 on transportation during their trips.

[4] http://www.mlive.com/news/detroit/index.ssf/2014/08/13th_annual_tour_de_troit_bike.html

Food and beverage. Survey respondents were asked to estimate how much they spent on restaurants, bars, and groceries while in Michigan. As shown in Figure III-22, TdT attendees spent more than $190,000 during their trips.

Lodging. The surveys asked participants how much they spent on lodging, including money spent on hotels and campgrounds. Figure III-22 shows that TdT attendees spent more than $125,000 on lodging-related expenses while in Michigan.

Shopping and entertainment. Survey respondents were asked to estimate the amount of money that their party spent on non-food shopping such as clothing or souvenirs, as well as non-bicycling entertainment such as amusement parks or movie theaters during their trips. As shown in Figure III-22, TdT attendees spent more than $70,000 during their trips.

Bicycles. The surveys asked participants how much they spent on bicycles, components, repairs, and accessories during their trips. Figure III-22 shows that TdT attendees spent approximately $60,000 on bicycles and bicycle-related repairs and accessories during their trips.

Spending by non-local attendees. In addition to looking at the direct spending of all TdT attendees, it is appropriate to examine spending from non-local event participants. Non-local participants are defined as those who travelled from out of state, or from more than 50 miles to participate in the 2014 TdT. BBC analyzed this group's direct spending separately, and results are presented below in Figure III-23.

Figure III-23.
Direct Spending in Michigan from Non-local Attendees

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Out-of-State Spending	50+ mile Spending
Registration	$21,875	$55,638
Transportation	52,781	67,956
Food and beverage	55,561	58,309
Lodging	62,053	43,121
Shopping and entertainment	16,944	25,041
Bicycles	6,765	13,589
Total Direct Spending	**$215,979**	**$263,653**

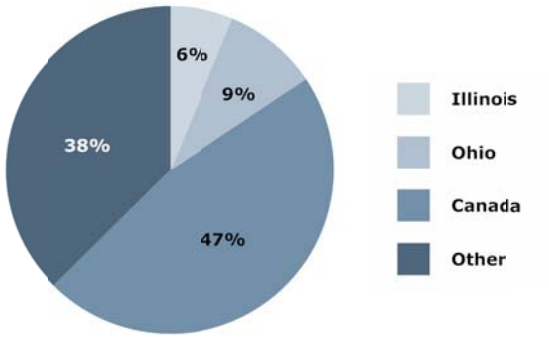
Ten percent of total attendees came to Michigan from out of state, while one-quarter of TdT attendees were from Michigan but travelled more than 50 miles to participate in the event. In total, non-local attendees accounted for approximately 35 percent of attendance and 55 percent of the total direct expenditures related to the 2014 TdT.

Of the TdT participants that travelled to Michigan from out of state, almost half came from Canada. Full results are presented in Figure III-24.

Figure III-24.
Origin of Out-of-state Attendees

Note:
"Other" includes CA, CT, DC, IL, IN, KY, MN, MO, ND, the Netherlands, PA, TN, VA, WA, and WI.

Source:
BBC Research & Consulting.



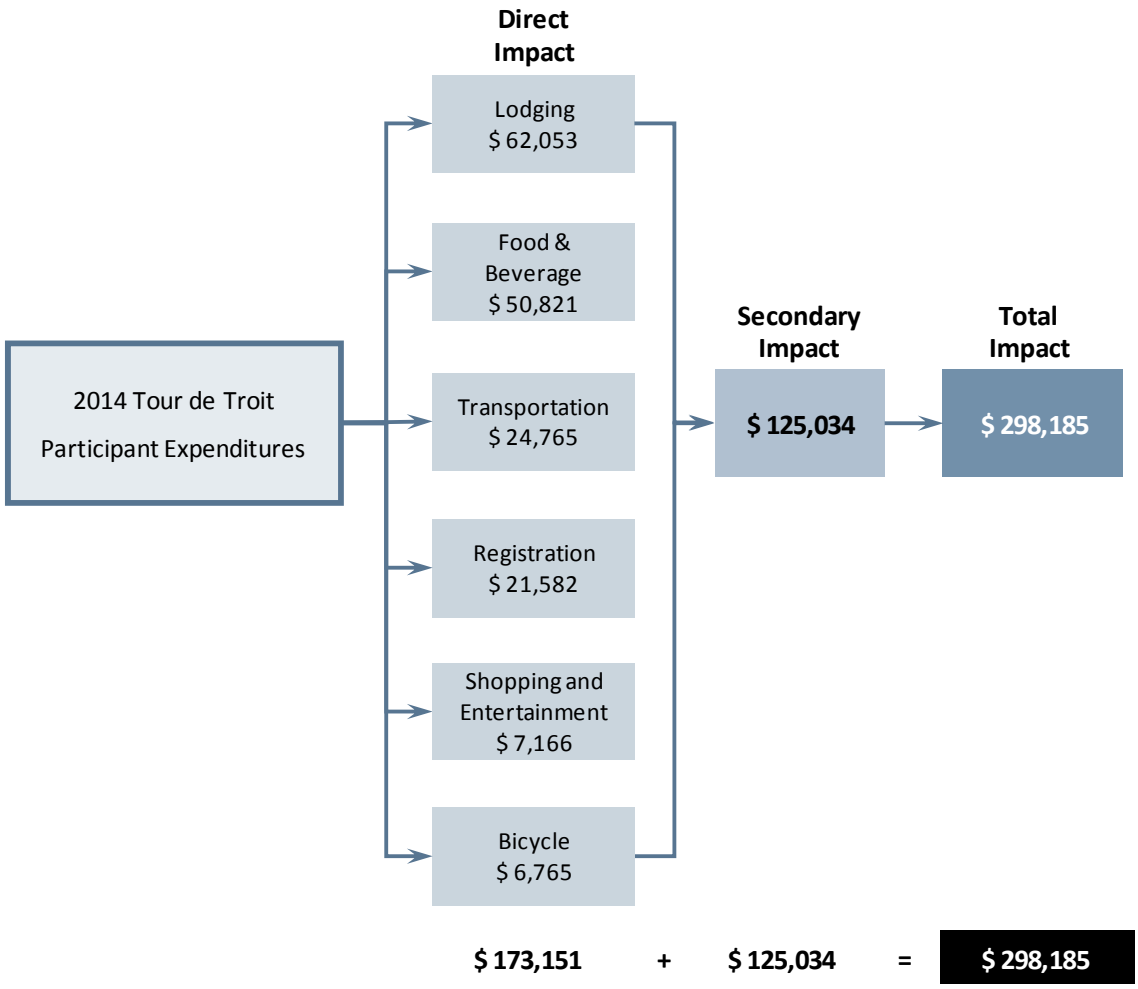
Total economic impact of TdT. Spending generated by Tour de Troit participants circulates in the local economy and creates a "secondary impact." The sum of the direct and secondary impact represents the total economic impact of Tour de Troit on the Michigan economy.

As previously discussed, this impact analysis only includes spending by visitors from outside of Michigan, so that it only captures new spending in the Michigan economy. Spending by Michigan residents is excluded from the overall economic spending reported in this study.

For some participant expenditures, a substantial portion of the retail price is associated with manufacturing or processing that occurs outside of Michigan. As a result, the ratio of direct spending to the direct economic impact for these categories is less than one.

Figure III-25 shows the direct impacts, secondary impact, and total economic impact associated with the 2014 TdT. It is important to note that this value only includes economic activity generated by out-of-state TdT attendees. Adding the direct and secondary impacts, the TdT has a total economic impact of approximately $300,000 on the state of Michigan.

Figure III-25.
Total Economic Impact from Out-of-state Participants, 2014 TdT



Note: Numbers may not add due to rounding.

Source: BBC Research and Consulting.

Non-case Study Events

In addition to the six case study events, the team grouped events into the categories of "targeted events" and "all other events." A list of the events included in these categories is included in Appendix E.

Targeted events. The targeted events category includes bicycle events that are large in size (e.g., greater than 500 attendants), or are likely to have a substantial out-of-state attendance (e.g., part of a national tour, located close to a state border, etc.), but do not have the same national recognition as the case study events. In total, the study team determined that 32 events in the state of Michigan fell into this category, with total attendance of approximately 40,000 participants.

Over 550 surveys were completed by bicycle event participants that took part in a targeted event in Michigan in 2014. BBC constructed an event-related spending model to calculate the average

dollar amount spent by event participants. Averages from these surveys were used to create a spending profile for a typical participant to this type of event.

All other events. There were a number of events identified that were not large enough, based on attendance or national draw, to warrant classification in the targeted events category. Although these events undoubtedly draw out-of-state participants, their estimated out-of-state participation rate was not as substantial as an event in the targeted events category (e.g., 5% out-of-state attendance for an event in this category, compared to 20% out-of-state attendance in the targeted events category).

In total, BBC categorized slightly more than 100 bicycle events into this category.[5] Obtaining attendance data for events in this category was more difficult than for events with a larger presence in the bicycling community. Due to their smaller size, many of the events did not have individual websites or publicly-available registration numbers. In order to estimate the total number of bicyclists participating in these events, the study team attempted to determine the total number of event participants for as many events as possible based on publically available information. For events where reliable participation numbers could not be determined, BBC used the median attendance numbers for events in this category for which reliable attendance data were available. BBC estimates that approximately 35,000 bicyclists participate in events in this category in Michigan every year.

Overall Economic Impact of Michigan Bicycling Events

In order to calculate the total amount of direct expenditures related to bicycle events in the state of Michigan in 2014, BBC summed bicycle event-related expenditures for out-of-state visitors participating in the six case study events, targeted events, and all other events.

BBC initially analyzed the survey responses and found that the out-of-state participation rate reported via the online survey was much lower than anticipated. In order to check that the online surveys were being completed by a representative proportion of out-of-state attendants, BBC analyzed the out-of-state participation rate for the case study events. BBC compared the actual out-of-state proportion of case study event participants (calculated using event registration logs) to the proportion of case study event participants responding to the online survey who indicated travelling to Michigan from a different state.

This analysis showed that the online survey underrepresented the true proportion of out-of-state event participants at the six case study events. For this reason, the proportion of out-of-state participants at case study events was calculated using registration logs, and not from the survey responses. For the targeted events and all other events, BBC inflated the out-of-state proportion calculated from online survey responses to better reflect the true out-of-state participation rate. BBC was then able to estimate the total number of out-of-state participants to targeted events and all other events in Michigan in 2014.

[5] Events for which the out-of-state attendance rate was estimated to be at or near zero were excluded from this category. These events were often local events, with very little attention outside of a small geographic location (e.g., a local weekly ride, a bicycle race to raise funds for a local school district, etc.).

After making these adjustments, BBC calculated the total direct spending in Michigan by out-of-state participants using the following data:

- Total direct spending by out-of-state participants at each of the six case study events;
- Average event-related spending by out-of-state participants at targeted events multiplied by the estimated number of out-of-state participants at these events; and
- Average event-related spending by out-of-state participants at all other events multiplied by the estimated number of out-of-state participants at these events.

The expenditures in Figure III-26 represent the total direct spending by out-of-state participants using spending data for participants in each of the three bicycle event categories.

Figure III-26.
Direct Spending in Michigan by Out-of-state Participants

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting.

Expenditure	Total Direct Spending
Food and beverage	$4,439,503
Lodging	4,259,198
Registration	2,188,279
Transportation	2,013,424
Shopping and entertainment	1,783,892
Bicycles	867,412
Total Direct Spending	**$15,551,708**

Figure III-26 shows that, when considered together, participants from outside of the state of Michigan spent approximately $15.6 million in the state of Michigan in 2014. The largest direct impacts on the state of Michigan came from food and beverage spending (restaurant/bar expenditures as well as money spent on groceries) and lodging expenses.

In order to calculate the overall economic impact of bicycle events in the state of Michigan, BBC conducted a full economic impact analysis using IMPLAN multipliers. BBC found that, in total, out-of-state participants in bicycle events in the state of Michigan were responsible for approximately $21.9 million in economic impact in 2014.

The study team acknowledges that this total economic impact may represent a conservative estimate. It is possible that there are organized bicycle events within the state of Michigan which draw out-of-state participants that were not included in the study. Furthermore, some of the events which were determined unlikely to have substantial out-of-state participation may have had out-of-state participation.

SECTION IV.

Touring in Michigan

SECTION IV.
Touring in Michigan

Overview

With over 1,300 miles of bicycle trails across the state and three U.S. Bicycle Routes, the state of Michigan is in a unique position in regards to bicycling infrastructure. Compared to the other states in the East North Central Census region (Wisconsin, Illinois, Indiana and Ohio) Michigan is at a distinct advantage in attracting self-supported touring bicyclists due in part to its three U.S. Bicycle Routes. Figure IV-1 on the following page provides a map of the current routes through Michigan: USBR 10, a 193-mile route connecting St. Ignace and Iron Mountain in the Upper Peninsula; USBR 20 a 300-mile east-west route connecting Marine City with Ludington; and USBR 35, a 500-mile route traveling through Michigan along the Lake Michigan Shore from Indiana to Sault St. Marie, Canada.

Michigan's neighboring states do not have the same amount of bicycle infrastructure. Both Wisconsin and Indiana do not currently have any designated U.S. Bicycle Routes. Illinois has two short U.S. Bicycle Routes (36 and 37) which run from the Wisconsin-Illinois border, through Chicago, and onto the Illinois-Indiana border. Ohio has U.S. Bicycle Route 50, which traverses central Ohio from the Indiana-Ohio border to the Ohio-West Virginia border.

In addition to providing infrastructure for touring bicyclists, the state of Michigan makes its infrastructure easy to access.[1] MDOT provides turn-by-turn directions for all three U.S. Bicycle Routes, enabling self-supported touring bicyclists to plan their own routes across the state. With abundant bicycling infrastructure and readily available route planning support, the state of Michigan retains many of its resident touring bicyclists and attracts many out-of-state touring bicyclists as well. This section provides a summary of the per-rider economic impact of independent touring bicyclists in Michigan along with results from interviews with companies who support bicycle touring.

[1] "Touring bicyclists" and "self-supported touring bicyclists" are used interchangeably throughout this report. Both terms refer to bicyclists who do not rely on motor vehicles to carry their gear and provisions while travelling.

Figure IV-1.
Current U.S. Bicycle Routes in Michigan

Source: Center for Shared Solutions and Technology Partnerships, Michigan Department of Technology, Management, and Budget.

Self-Supported Touring

As part of the effort to estimate the economic benefits to Michigan from bicycle-related tourism, the study team attempted to develop a spending profile for a typical self-supported touring bicyclist in the state of Michigan. The literature review showed a lack of data specifically related to the spending patterns of self-supported touring bicyclists, both in Michigan as well as nationwide.

A few studies have attempted to quantify the economic impacts of self-supported bicycle tourism in other states by collecting primary data on self-supported touring bicyclist's expenditures.[2, 3] Based on a review of literature and discussions with experts on touring bicyclists, the study team determined that the collection of primary data on self-supported touring bicyclists in Michigan would be necessary to estimate the economic impact of these tourists. In conjunction with the Adventure Cycling Association (ACA), the study team distributed a survey via Survey Monkey to self-supported touring bicyclists in the state of Michigan.

Touring survey. In order to develop a survey instrument for self-supported touring bicyclists in the state of Michigan, the study team repurposed the bicycling event survey by adding several questions relating specifically to bicycle touring. The spending categories (e.g., lodging, food and beverage, etc.) were exactly the same as those in the bicycling event survey. Survey participants were asked to estimate the per day expenditures of their entire bicycling party.

The Adventure Cycling Association assisted in distribution of the online survey by writing blog posts and sending emails to potential self-supported touring bicyclists. Additionally, flyers were placed at locations frequented by self-supported bicyclists in Michigan. In addition to questions asking about per day expenditures, the survey included questions about the use of U.S. Bicycle Routes 20 and 35, frequency of multi-day bicycle trips in Michigan, and main surface type used while on a multi-day bicycle trip in Michigan, and other questions. Survey responses were cleaned to remove answers that were not relevant to the economic impact study, similar to the data cleaning process for the bicycling event data collection process. A copy of the survey instrument used for the self-supported touring bicyclist survey is included in Appendix D.

Discussion. For the purposes of the economic impact analysis, results are presented below on a per-rider basis. The most rigorous study to date of touring bicyclists did not address the overall volume of participants. In addition, discussions with staff of the Adventure Cycling Association indicate that there is no established methodology to quantify the number of touring bicyclists in the US on a state or national level.

Where attempts have been made to quantify the volume of touring bicyclists, it is often through panel data of general tourists with a relatively low incidence of bicycling activities and an even lower incidence of independent bicycle touring. This approach can lead to an estimate of participant volume with a large margin of error. Additionally, this type of panel survey often

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[2] Institute for Tourism and Recreation Research, University of Montana. December 2013. "Analysis of Touring Cyclists: Impacts, Needs and Opportunities for Montana."

[3] Dean Runyan Associates. April 2013. "The Economic Significance of Bicycle-Related Travel in Oregon."

includes tourists who may have participated in several different bicycling activities during their trip, without identifying their primary activity. As a result of these limitations and the cost involved with this approach, this study does not attempt to quantify the annual number of touring bicyclists visiting Michigan. MDOT might consider working with an already established general tourism survey (such as those conduced in conjunction with the Pure Michigan campaign), to quantify the number of independent touring bicyclists in the future.

Survey execution and results. The survey was distributed to a list of touring bicyclists through the Adventure Cycling Association's Bike Bits newsletter. This newsletter reaches thousands of touring bicyclists throughout the world. Readers were asked to participate in the survey if they had toured in Michigan. Surveys were also solicited from flyers placed in two strategic locations that are frequented by touring bicyclists; on the SS Badger (a privately operated ferry that crosses Lake Michigan) and at the Mackinac Bridge (where bicyclists are required to cross using transport services provided by the Mackinac Bridge Authority). In total, 364 online surveys were completed by self-supported touring bicyclists.

Analysis. In order to analyze the economic impact associated with independent bicycle touring for in-state and out-of-state respondents, per-ride spending was calculated for respondents who reported:

- Touring in Michigan within the past three years;
- A party size of fewer than 15 people (to avoid confusion with organized tour spending); and
- Their state of residence or an address that could be used to determine their state of residence.

For the spending analysis the study used the 166 responses that meet these criteria.

Results of the survey analysis showed that, on average, out-of-state self-supported touring bicyclists spend $71.26 per person per day and stay in Michigan for slightly more than seven days. In-state self-supported touring bicyclists spend $54.29 per person per day and travel in Michigan for approximately five and a half days.

Figure IV-2, presented below, shows that the largest expenditures are in the categories of food and beverage ($29.23 per day out-of-state; $22.21 per day in-state) and lodging ($28.94 per day out-of-state; $24.62 in-state). Additionally, while the average out-of-state visitor spends seven days in Michigan, approximately three in 10 visitors stay in Michigan for 10 or more days, and one in 10 visitors stays for 14 or more days.

Figure IV-2.
Daily Per Person Expenditures in Michigan

Note:
Numbers may not add due to rounding.

Source:
BBC Research & Consulting

Expenditure	Out-of-State Spending	In-State Spending
Food and beverage	$29.23	$22.21
Lodging	$28.94	$24.62
Shopping and Entertainment	$8.63	$4.07
Bicycles	$3.20	$2.17
Transportation	$1.26	$1.22
Total Direct Spending	**$71.26**	**$54.28**

In total, a typical self-supported touring bicyclist in Michigan from out of state spends approximately $520 during a self-supported bicycle tour. This direct spending results in approximately $760 of total economic impact in the state of Michigan.[4] A typical Michigan resident taking part in a self-supported bicycle tour spends approximately $300 during a tour in the state of Michigan. The economic impacts from in-state resident expenditures are not calculated, as economic impact analyses do not analyze expenditures of in-state residents.

Additional data. In addition to the expenditure data, the online survey collected information regarding how often bicycle tourists visit Michigan, which routes they used, and whether or not they had visited Michigan prior to their most recent multi-day bicycle trip.

Survey results showed that more than half (55%) of all self-supported touring bicyclists had been in multi-day bicycle trips in Michigan within the past year. Slightly less than two-thirds of self-supported tourists indicated utilizing one of Michigan's U.S. Bicycle Routes. Additionally, approximately 22 percent of out-of-state survey respondents indicated that their most recent multi-day bicycle trip was their first visit to the state of Michigan. Less than 3 percent of self-supported bicyclists indicated riding an Amtrak train in Michigan.

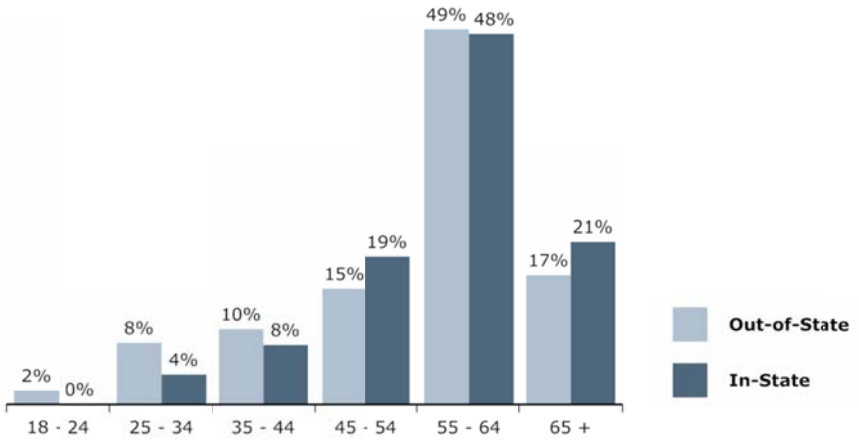
Demographic information. Demographic information for self-supported touring bicyclists in Michigan is similar to demographic information of self-supported touring bicyclists in other states. Approximately half of all self-supported touring bicyclists in Michigan are between the ages of 55 and 64, and more than 80 percent of self-supported touring bicyclists in Michigan are above the age of 45. This is similar to a study of touring bicyclists in Montana that found an average age of 52 years old.[5] Michigan residents appear to be older, on average, than self-supported touring bicyclists from out of state. Full results are presented below in Figure IV-3.

[4] Spending by bicyclists circulates in the local economy. Businesses where visitors spend their money purchase goods and services from other businesses, and workers spend a portion of their earnings on local goods and services. This recirculation of money in the economy is termed a "secondary impact." The total economic impact is the sum of direct and secondary impacts.

[5] "Analysis of Touring Cyclists: Impacts, Needs and Opportunities for Montana."

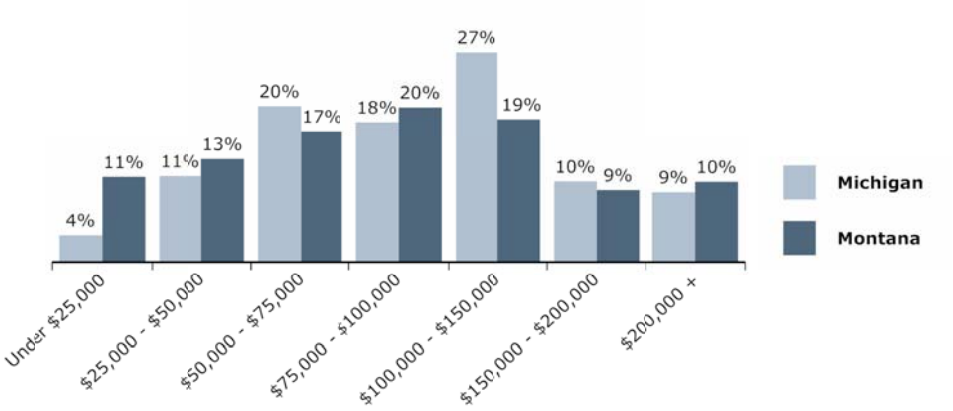
Figure IV-3.
Age of Self-Supported Touring Bicyclists

Source:
BBC Research & Consulting.



Survey responses indicate that the income of self-supported touring bicyclists in Michigan is higher than the income of self-supported touring bicyclists in Montana. Approximately half (47%) of self-supported touring bicyclists in Michigan reported an income of higher than $100,000, compared to only 38 percent of self-supported touring bicyclists in Montana.[6] Full results for Michigan are presented below in Figure IV-4 and compared to results from the Montana study.

Figure IV-4.
Income of Self-Supported Touring Bicyclists



Source: BBC Research & Consulting

Demographic information can be useful when deciding how to best target touring bicyclists in order to promote self-supported bicycle touring in Michigan.

Potential next steps for self-supported touring. In general, self-supported touring bicyclists appear to be very pleased with the state of Michigan's bicycle infrastructure and bicycling environment in general. Survey respondents indicated that they were very satisfied with the condition of bicycle paths and the availability of bicycle route maps across the state.

[6] *Ibid.*

Furthermore, many respondents discussed the scenic nature of U.S. Bicycle Route 35 along Michigan's western coast.

MDOT may consider another survey of self-supported touring bicyclists to develop a better understanding of the needs and wants that are unique to this group of bicyclists. Additionally, the spending profile could be refined with a future survey when economic conditions have changed or new infrastructure is added for touring bicyclists.

Going forward, MDOT should work with the Adventure Cycling Association to keep up to date with research relevant to self-supported bicycle touring. In particular, MDOT should continue to look for studies that utilize an appropriate methodology to estimate the total number of self-supported touring bicyclists in a particular state. This methodology could be used to estimate the total number of self-supported bicyclists in Michigan, as well as the total economic impact of these tourists.

MDOT could also considering partnering with a state-wide tourism research effort such as those conducted for Pure Michigan. This would require working with the organization to add questions about the type of bicycling activities that respondents participated in during their visit to Michigan. Current surveys for Pure Michigan have only asked whether participants participate in "hiking or biking." As discussed above, these efforts typically use responses from survey panels with a low incidence of independent touring bicyclists. In spite of these drawbacks, a panel survey approach would likely be able to provide a range of the number of independent touring bicyclists who visit Michigan annually.

Touring Companies

In order to better understand the economic impact caused by bicycling in the state of Michigan, bicycle touring companies were interviewed about their businesses within the state of Michigan. Interview participants were asked to estimate the total number of riders that they provide services to per year, the percentage of customers that travel to Michigan from out of state and yearly average revenues, among other questions. The study team attempted to contact as many companies involved in bicycle touring in the state of Michigan as possible by asking interview participants if they knew of any other bicycle touring companies operating in the state of Michigan.

Data from the interviews show that bicycle touring companies in Michigan can be grouped into two categories: local touring companies offering city tours in and around their immediate city, and touring companies that offer support services to bicyclists participating in organized bicycling events (a copy of the interview guide used with bicycle touring companies is included in Appendix D). Companies from the first group usually organize bicycling tours within a particular city that may highlight different cultural aspects of a location (i.e., a historic tour). Companies from the second group offer support services such as transportation to and from larger bicycling events within the state of Michigan such as the Michigander and DALMAC. These tours usually last for up to a week and traverse large portions of the state.

Results. Companies offering local tours estimated that between 750 and 1,000 bicyclists tour with their companies each year, and that 10-20 percent of their customers travelled to Michigan from out of state. Tour costs were in the $20 to $50 range, depending on length of tour and services offered. Owners estimate that approximately 20 to 30 percent of their total annual revenues come from their touring operations. Employers mention that the warmer months are much busier in terms of the number of riders, and as a result a large portion of their staff is employed part-time during these months.

Companies that offer services to riders participating in large, formally-organized events offered services to a much smaller number of riders per year than companies offering primarily local tours, but charged substantially more for their services. Business owners in this category stated that they provide services to approximately 100 to 150 riders per year, offering services for five to six tours in Michigan per season. Estimates on customers from out of state were more varied, with owners stating that between 20 and 60 percent of their customers resided outside of Michigan.

Tours offered by these companies ranged in price from $300 to $1,500, depending on length of the tour and the types of services offered. Owners indicated that all of their business revenues came from providing services to touring bicyclists participating in organized bicycling events within the state of Michigan. Business owners in this category also highlighted that their business operations are largely seasonal, with almost all of their supported tours occurring in the summer. As a result, employers keep few if any full-time staff, and employ a moderately-sized part-time staff of between four to 12 employees.

Both categories of businesses generally believed that bicycle tourism was doing well in Michigan, thanks in part to efforts from MDOT regarding mapping bicycling routes throughout the state. Several owners mentioned that more could be done to promote bicycle tourism within the state, by establishing a central list of businesses offering touring services in Michigan.

SECTION V.

Bicycling and Tourism in Michigan

SECTION V.
Bicycling and Tourism in Michigan

Overview

Recreational bicycling plays a substantial but difficult to quantify role in Michigan's tourism industry. A 2010 study by D.K. Shifflet & Associates found that 3 percent of leisure vacations in Michigan involved hiking or bicycling as a recreational activity. That percentage varies across the state, from 1 percent of leisure travelers to southeastern Michigan reporting hiking or bicycling during their vacations to 7 percent in the Upper Peninsula.[1]

There are numerous public and private groups across the state that aim to promote bicycling as a form of recreation for both Michigan residents as well as tourists. Several local Convention and Visitors Bureaus, from large cities such as Grand Rapids to smaller towns like Gaylord, provide resources for tourists interested in bicycling. Many communities provide maps of local bicycle trails as well as listings of businesses that rent bicycles. Other organizations, like the Up North Trails Collaborative, aim to provide maps for all types of recreational trails across large regions of the state.

Michigan is in a unique position in regards to recreational bicycling and long distance transportation related bicycling as it has substantial bicycling infrastructure and strong support for bicycling at the local as well as statewide level.

Infrastructure

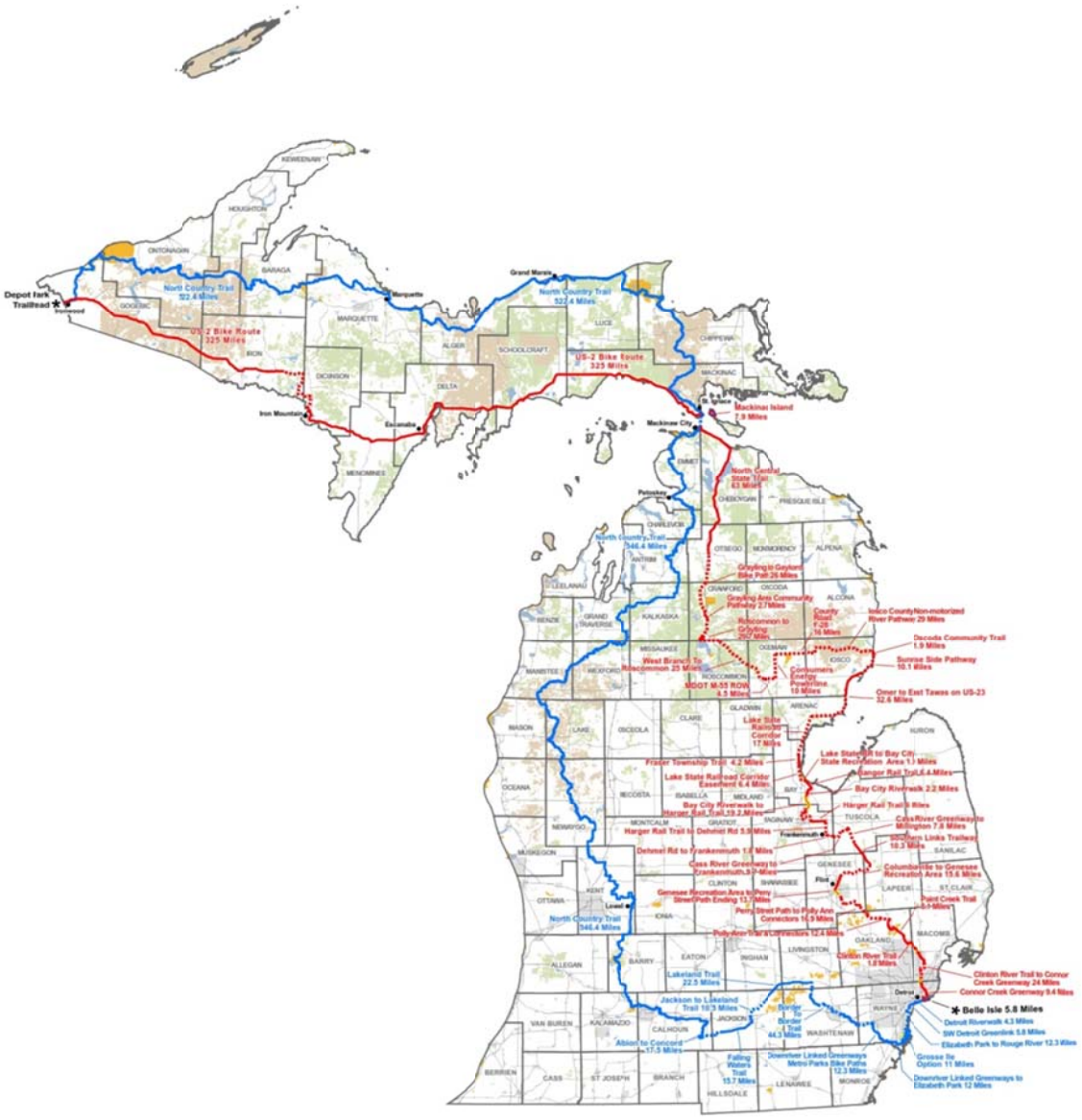
Michigan is a regional and national leader in bicycling infrastructure and investment. Michigan is a national leader in rails-to-trails conversions, a program which converts former train rails into multi-use paths. The state of Michigan has 119 rail trails (the most in the United States); with a total of 2,712 miles of shared-use pathways open to walking, jogging, and bicycling. In total, Michigan is home to 6.6 percent of the rail trails located in the U.S. and 12.4 percent of rail trail mileage in the U.S.[2]

In addition to the rails-to-trails program which has been growing since the State's first rail trail, the Paint Creek Trail, opened in 1983, the state of Michigan has recently made bicycling a statewide priority. Governor Rick Snyder's 2012 Energy and Environment Speech called for the creation of a statewide bicycling and hiking trail, the preliminary draft of which is pictured below in Figure V-1. The trail features two routes across the state, one for hiking and one for bicycling. Both routes run from Belle Isle Park in Detroit to Ironwood in the western Upper Peninsula.

[1] D.K. Shifflet & Associates. 2010. "Michigan 2009 Visitor Profile."

[2] http://www.michigantrails.org/newsroom

Figure V-1.
Michigan's Iron Belle Trail



Source: Michigan Department of Natural Resources.

In addition to the recently announced Iron Belle Trail, Michigan has three officially designated U.S. Bicycle Routes. As of December 2014, Michigan has more officially designated U.S. Bicycle Routes than any other state in the Midwest (Minnesota, Wisconsin, Illinois, Indiana, and Ohio). These routes are primarily designed for use by long-distance touring bicyclists travelling between states, but they can also be used by recreational bicyclists vacationing in Michigan. These routes help to reinforce the image of Michigan as a bicycle-friendly state.

The physical bicycling infrastructure in Michigan (rail trails, U.S. Bicycle Routes, the Iron Belle Trail, and others) is designed to take advantage of Michigan's unique natural resources and its diversity of natural scenery. U.S. Bicycle Route 35 follows the scenic Lake Michigan coastline for

a majority of its length in Western Michigan. The Iron Belle Trail follows a portion of the Lake Huron coastline in the Lower Peninsula, and a substantial portion of the Lake Michigan coastline in the Upper Peninsula. The 2,700 miles of rail trails throughout the state utilize scenic corridors through Michigan's dense forests and rolling hillsides.

Community Support. In addition to the bicycle paths and physical bicycle infrastructure available to recreational bicyclists in Michigan, some communities have explored bicycle sharing programs as a means to encourage bicycling in more urban environments. Ann Arbor began its bike sharing program, ArborBike, in late 2014 and Lansing has experimented with a pilot bicycle sharing program, Capital Community Bike Share. Detroit has also conducted a study to explore the feasibility of a public bike sharing system in Downtown Detroit.

ArborBike currently offers a 24-hour pass for a small fee. During that 24-hour period, riders may take unlimited rides of less than 60 minutes at a time. This program can be a great tool for tourists in Michigan looking to explore urban environments with more flexibility than travelling by car. Bike shares throughout the country have seen substantial use of bike shares by tourists.[3]

The amount of physical bicycling infrastructure in Michigan and the emergence of short-term bicycle rental operations may be part of the reason that visitors to Michigan perceive the state as a good place to participate in recreational bicycling. A 2013 study conducted by Longwoods International found that approximately two-thirds (64%) of regional market respondents (includes respondents from Michigan, Illinois, Wisconsin, Indiana, Ohio, and Southern Ontario) agreed that Michigan is great for bicycling and jogging. More than half (53%) of regional market respondents indicated that they strongly agreed that other states in Michigan's regional market were great for bicycling and jogging.[4] Michigan can encourage that perception by continuing its support of bicycling as a recreational activity for tourists.

Strategic Plan

In 2011, the $17.7 billion Michigan tourism industry generated nearly one billion dollars in state tax revenue and supported approximately 200,000 jobs.[5] In order to support and expand this industry, one of the largest in Michigan, the Michigan Travel Commission adopted the 2012-2017 Michigan Tourism Strategic Plan. The plan was developed based on the input from hundreds of tourism industry leaders, from multiple industries and from all areas of the state. Key to the success of the plan is the continuation of the Pure Michigan campaign, particularly the portion of the campaign aimed at attracting out-of-state visitors to Michigan. In 2011, one-third of tourists in Michigan were residents of another state—a number that has increased year over year in the past.[6]

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[3] New York City Department of City Planning. Spring 2009. "Bike-Share Opportunities in New York City."

[4] Longwoods International. March 2014. "Michigan 2013 Tourism Advertising Evaluation and Image Study."

[5] Dr. Sarah Nicholls, Michigan State University. December 2012. "The 2012-2017 Michigan Tourism Strategic Plan."

[6] *Ibid.*

Bicycling plays an important role in Michigan's tourism industry. Tourists coming to Michigan may take a day trip through a rural section of the Upper Peninsula on a rail trail, or use a bicycle to explore an urban environment. Bicycling is discussed several times in the strategic plan, especially in relation to one of the plan's key goals of product development.

The product development goal aims to "enhance infrastructure to support the delivery of a world class Pure Michigan travel experience." To achieve this goal, the plan recommends showcasing Michigan as a state with a diverse and extensive network of all types of trails. Part of this plan involves encouraging local communities to develop more bicycling routes designed to highlight local scenery and attractions.

Communities

In addition to the steps taken to promote bicycling in Michigan at a statewide level, several communities across the state have engaged in extensive efforts to promote tourism in their local regions. As part of the Phase I portion of this study, case studies were conducted in select communities throughout the state of Michigan to estimate the economic impact of bicycling on local economies. Two of the case study communities, Traverse City and Holland, are discussed below as examples of the benefits from encouraging bicycling as a recreational activity among tourists.

Traverse City. Traverse City is a small town of approximately 15,000 residents in northern Lower Michigan. Partly due to its scenic location on the Grand Traverse Bay and abundant recreation opportunities, the Traverse City tourism industry is a major contributor to the area's economy. More than 3.3 million visitor trips were made to the Traverse City area in 2012, resulting in nearly $1.2 billion in direct spending.[7]

Part of the case study involved interviews with stakeholders in Traverse City to document the connections between bicycling and economic growth and development in the area.

Stakeholders cited the more than 60 miles of trails in the Traverse Area Recreational Trail (TART) system as part of the reason for bicycling's popularity in the region. In addition to already existing bicycle infrastructure in the region, stakeholder's mentioned the increase in popularity of bicycling as a means of transportation.

> *"Bicycling is something that's always been a big part of outdoor recreation in Traverse City. The big driver has been the improvement of our trail infrastructure, but now it is becoming more of a part of the transportation mix." – Mike Norton, Traverse City Convention and Visitors Bureau.*

Although it is not clear what portion of tourism industry revenues are due to visitors to Traverse City who bicycle during their trips, several stakeholders discussed the importance of bicycling and the region's broader strategy around outdoor recreation as a tourism draw. Given that tourism is responsible for creating approximately 12,000 jobs in the Traverse City area (30% of

[7] http://www.traversecity.com/economic-impact-530/

area employment) and the popularity of bicycling among Traverse City tourists, the impact of bicycling on the Traverse City tourism economy is substantial.[8]

Holland. Holland, Michigan is a small town located on Lake Michigan in the southwestern portion of the state. Located less than a three-hour drive from both Chicago and Detroit, Holland has access to two of the largest tourist markets in the Midwest. Although Holland's economy is driven primarily by manufacturing, tourism contributes a substantial amount to the regional economy. Jane Clark, the President of the West Michigan Coast Chamber of Commerce, mentioned that Holland is unique because it is both "a tourism destination and a place that has a solid job base."

Despite less reliance on tourism dollars than Traverse City, the Holland region has made substantial investments in bicycling infrastructure. Holland has invested in a large network of separated, shared-use paths and sidepaths and very little on-road infrastructure, a combination that is unique when compared to other case study locations in the Phase I report. These separated paths are used by residents and tourists alike to access downtown Holland as well as to take bicycle trips to the beach on Lake Michigan.

Sally Laukitis, Executive Director of the Holland Convention and Visitors Bureau, discussed the increase of bicycle tourists in Holland:

> *"Within the last two years, we've seen an active increase in the number of cars rolling into town with bikes on the back. We've seen more people here to bicycle, more people here to see Holland on bike."*

Many private businesses are taking advantage of Holland's bicycling infrastructure and growing interest in bicycling for recreation by offering services to interested tourists. Several businesses located near the lakefront offer bicycles for rent, and many of the traditional bicycle retail shops have active rental businesses, delivering rental bicycles to lodging locations around the region.

The Holland region can serve as an example of how local communities that are not primarily reliant on tourism can still benefit from investments in bicycling infrastructure and encouraging bicycling as a recreational activity for tourists.

Conclusions and Next Steps

Michigan is in a unique position both regionally and nationally in regards to bicycle-related tourism. Michigan has an abundance of bicycling infrastructure, including rail trails, U.S. Bicycle Routes, statewide trails, bicycle lanes, and separated bicycle paths. This section presents suggestions on how MDOT and other state agencies and partners can continue to promote bicycling.

Future Investments. Stakeholders should promote current rail trails as well as continue to encourage the rails-to-trails movement. Approximately one out of every eight miles of rail trail is

[8] *Ibid.*

located in the state of Michigan, which helps to build the perception that Michigan is a leading state for recreational bicycling.

The 2012-2017 Michigan Tourism Strategic Plan included several suggestions on how to support and grow bicycling as a recreational activity in Michigan. Michigan communities should be encouraged to develop marked or signed bicycle routes or tours that highlight local attractions, both commercial and recreational.

Additional Research. Currently there is very little research or profiling of tourists who happen to bicycle while on vacation. While there are numerous studies quantifying the economic impacts of tourism across the state of Michigan, their focus on recreational bicycling is extremely limited if it exists at all.

MDOT, other state agencies, and relevant partners should work with the Michigan Economic Development Corporation if and when they commission another statewide visitor profile. The 2009 visitor profile provided important information about the Michigan tourism industry and the types of travelers that are attracted to Michigan. However, the study was lacking in questions related to Michigan tourists who participate in recreational bicycling while on vacation.

As noted previously in this section of the report, there are numerous communities across the state are promoting bicycling on their own. Efforts should be made to continue to help these towns and municipalities encourage bicycling by providing them with a framework for developing tourism surveys. These communities would then be able to quantify the economic impacts of bicycling with more accuracy, and compare those results to other bicycling-friendly towns throughout the state.

APPENDIX A.

Economic Impact Model Guide

APPENDIX A.
Economic Impact Model Guide

The economic impact model can be used in conjunction with the bicycle event survey to estimate economic impacts of specific bicycle events within the state of Michigan. The only calculations that need to be done outside of the model relate to averages and sums of numerical survey responses to the bicycle event survey.

Average Spending and Economic Impact. This worksheet contains information on the number of survey responses received from event attendees, the total number of event participants, and different group characteristics for out-of-state attendees, in-state attendees who travelled more than 50 miles, and in-state attendees who travelled less than 50 miles. Listed below are the following fields that require inputs from the event survey.

- **Number of surveys** — The number of completed surveys that event organizers received from event attendees
- **Total number of attendees** — The sum of question 5 for all respondents with complete surveys
- **Total event participants** — The total number of event participants, from event organizer's data, registration logs, etc.
- **Number of out-of-state attendees** — The sum of question 5 for all respondents that answered "Yes" to question 1 "Did you travel to Michigan from another state or country to participate in this event?"
- **Average party size (out-of-state)** — The average of question 5 for all respondents that answered "Yes" to question 1.
- **Average length of trip (out-of-state)** — The average of question 7 for all respondents that answered "Yes" to question 1.

The last three fields listed above also need to be completed for in-state attendees who travelled greater than 50 miles (Q1="No" or blank and Q2=Yes) and in-state attendees who travelled less than 50 miles (Q1="No" or blank and Q2="No" or blank).

Figure 1.
Example of Average Spending and Economic Impacts Worksheet

2	Number of surveys	390					
3	Total number of attendees (sum of q5)	1205					
4	Total event participants	1630					
5							
6	**Number of out of state attendees**	162	**Number of in state attendees (50+ miles)**	394	**Number of in state attendees (<50 miles)**	649	
7	(sum of q5 if q1=yes)		(sum of q5 if q1=no/blank and q2=yes)		(sum of q5 if q1=no/blank and q2=no)		
8	% of out of state participants	13.44%	% of in state participants (50+ miles)	32.70%	% of in state participants (<50 miles)	53.86%	
9							
10	Average party size (out of state)	2.65	Average party size (in state 50+)	3.13	Average party size (in state <50 miles)	2.90	
11	Average length of trip (out of state)	7.32	Average length of trip (in state 50+)	5.48	Average length of trip (in state <50 miles)	5.14	
12							

Note: Numbers included in this reference are meant to be used as examples only.

Source: BBC Research & Consulting Economic Impact Model.

Inputs. This worksheet requires inputs for each different group of event attendee (out-of-state; in-state more than 50; in-state less than 50). Input fields are described for out-of-state participants, and the process for input is similar for other categories of attendees.

The "Number who spent money on hotels" field should be filled in using the sum of Q5 for out-of-state survey respondents that filled out question 8a. The "average hotel spending per party per day" should be filled in using the average of question 8a for out-of-state survey respondents that provided an answer. The process is similar for questions 8b through question 9.

Figure 2.
Example of Inputs Worksheet

2	**Out of state participants**		**In state participants (50+ miles)**	
3				
4	Number who spent money on hotels	112	Number who spent money on hotels	299
5	% who spent money on hotels	69.14%	% who spent money on hotels	75.89%
6	Average hotel spending per party per day	$54.78	Average hotel spending per party per day	$101.22
7				
8	Number who spent money on restaurants/bars	141	Number who spent money on restaurants/bars	326
9	% who spent money on restaurant/bars	87.04%	% who spent money on restaurant/bars	82.74%
10	Average restaurant/bar spending per party per day	$65.83	Average restaurant/bar spending per party per day	$69.17
11				
12	Number who spent money on groceries	120	Number who spent money on groceries	276
13	% who spent money on groceries	74.07%	% who spent money on groceries	70.05%
14	Average grocery spending per party per day	$21.79	Average grocery spending per party per day	$34.71
15				
16	Number who spent money on non-food shopping	119	Number who spent money on non-food shopping	237
17	% who spent money on non-food shopping	73.46%	% who spent money on non-food shopping	60.15%
18	Average non-food shopping spending per party per day	$27.00	Average non-food shopping spending per party per day	$32.49
19				
20	Number who spent money on entertainment	93	Number who spent money on entertainment	183
21	% who spent money on entertainment	57.41%	% who spent money on entertainment	46.45%
22	Average entertainment spending per party per day	$29.69	Average entertainment spending per party per day	$14.77
23				
24	Number who spent money on bicycles	105	Number who spent money on bicycles	221
25	% who spent money on bicycles	64.81%	% who spent money on bicycles	56.09%
26	Average bicycle spending per party per day	$34.46	Average bicycle spending per party per day	$65.37
27				
28	Number who spent money on transportation	151	Number who spent money on transportation	329
29	% who spent money on transportation	93.21%	% who spent money on transportation	83.50%
30	Average transportation spending per party	$342.44	Average transporation spending per party	$228.38

Note: Numbers included in this reference are meant to be used as examples only.

Source: BBC Research & Consulting Economic Impact Model.

Per Person Calculations. This worksheet requires additional information from the event host. If there is only one option for event registration (i.e., all participants pay the same amount), then the "Average registration spending per person" field for all three participant types can be filled in with the same dollar amount. If there are multiple variations for the event (e.g. different distance rides or multi-day options) with different registration fees, then it may be preferred to calculate an average registration spending per person.

Based on the survey respondents' answer to Q14, "In which ride did you participate?" a new field should be created that contains the registration fee for that particular ride. After doing this, an average registration spending per person can be calculated for each participant type (out-of-state; in-state more than 50; in-state less than 50). This is not necessary, but initial research shows that out-of-state participants may be more likely to participate in longer events, and thus pay more in registration fees.

Understanding the Outputs. Economic impacts are calculated using IMPLAN input-output models that are specific to the state of Michigan. IMPLAN is an economic impact assessment system developed and maintained by the Minnesota IMPLAN Group (MIG). It allows the user to develop local-level input-output models that calculate direct, secondary, and total effects of economic activity by sector through the use of industry-specific multipliers and other factors.

Direct Effects include the spending of event attendees, less any expenditures that are likely to have occurred outside of the state of Michigan.[1] As local industries respond to the direct spending related to bicycle events by making their own purchases of labor hours and goods and services in Michigan, this spending, in turn, generates demand for additional good and services. This demand is referred to as a Secondary Effect. Total Effects are calculated as the sum of Direct and Secondary Effects taken together.

In addition to calculating a total economic impact (Total Effect) of bicycle events, IMPLAN models also calculate the increase in jobs as a result of event-related spending. For this analysis, "jobs" include all full-time, part-time, and temporary positions. One job lasting 12 months is considered equivalent to two jobs lasting for six months. This definition is the same definition used by the U.S. Bureau of Labor Statistics (BLS) and U.S. Bureau of Economic Analysis (BEA).

Reporting Economic Impacts. Outputs from the economic impact model can be used to highlight the benefits of a specific bicycle event within the state of Michigan. When reporting the results of the economic impact model, event organizers should mention the direct and total effects, as well as the increase in number of FTE jobs. Direct Effects represent the direct spending from event attendees, and Total Effects represent the total economic impact within the state of Michigan after direct expenditures are circulated through the economy. Reports on the economic impact of these events should also mention that these economic impacts and increases in employment would not have occurred without the bicycle event.

[1] Money spent on transportation expenses increase the Direct Effects associated with transportation expenditures at a less than one to one ratio, as a portion of transportation expenses are estimated to accrue to businesses located outside of the state of Michigan.

APPENDIX B.

Data Sources

APPENDIX B.
Data Sources

A number of data sources were used in calculating the economic benefits derived from out-of-state participation in bicycling events and bicycle-related tourism including:

2014 Michigan Department of Transportation Bicycling Event Survey. As a part of the study, intercept and online surveys were conducted collecting information from participants in bicycling events in Michigan about their spending related to participating in bicycling events.

As part of the survey effort, staff from R. Neuner conducted intercept surveys of bicyclists at the six case study events identified by the study team. In total, approximately 2,100 surveys were completed by case study event participants.

In addition to the in-person intercept surveys, the study team used the LMB ride calendar to contact bicycle event organizers in the state of Michigan. Event organizers were asked to send out a link to an online survey hosted by Survey Monkey that exactly mirrored the physical survey distributed at the six case study events. Approximately 2,400 online surveys were completed through Survey Monkey.

2014 Michigan Department of Transportation Independent Touring Bicyclist Survey. The study team also conducted a survey of independent touring bicyclists. This survey was based on the event survey, but modified to include several questions relating specifically to bicycle touring. The spending categories (e.g., lodging, food and beverage, etc.) were exactly the same as those in the bicycle event survey. Survey participants were asked to estimate the per-day expenditures of their entire bicycling party.

The Adventure Cycling Association assisted in distribution of the online survey by writing blog posts and sending emails to potential self-supported touring bicyclists. Additionally, flyers were placed at locations frequented by self-supported touring bicyclists in Michigan. In addition to questions asking about per-day expenditures, the survey included questions about the use of U.S. Bicycle Routes 20 and 35, frequency of multi-day bicycle trips in Michigan, and main surface type used while on a multi-day bicycle trip in Michigan, in addition to other questions. Survey responses were cleaned to remove answers that were not relevant to the economic impact study, similar to the data cleaning process for the bicycle event data collection process. In total, 364 online surveys were completed by self-supported touring bicyclists.

Dun & Bradstreet (D&B). D&B provides information on businesses by industry and location. Data from Hoovers, a D&B subsidiary, provides information on the revenues and employment of bicycle-related manufactures and retailers throughout the state. D&B data were used to collect information about bicycle touring companies.

League of Michigan Bicyclists (LMB). The LMB advocates for cyclists in Michigan and provides policymakers with valuable information on bicycling in the state. The LMB organizes events and collects and distributes data and reports. The study used the LMB ride calendar to develop a comprehensive list of bicycling events in Michigan.

APPENDIX C.

Literature Review and Bibliography

APPENDIX C.
Literature Review and Bibliography

This appendix provides a bibliography and detailed review of all existing literature explored during the course of the study.

Overview

Research for this report began with an extensive review of the existing literature on community and economic impacts of bicycling. The review continued throughout the study, as new research was published and stakeholders highlighted unique aspects of the case study communities. After Phase I of the study was complete but before substantial work had begun for Phase II, several key studies were released that were similar in nature to Phase II of the study. Details of these studies and their methodologies are presented below.

Literature reviewed for the study included peer-reviewed publications, reports from consultants, periodical articles, analyses by all levels of government and publications by advocacy groups. The geographic scope of the literature ranged from focus on a specific piece of bicycling infrastructure to the impacts of bicycling on an entire country.

Although bicycling advocates, government officials and ordinary citizens are giving increasing attention to the subject, studies similar in nature to this effort are rare and the data sources available on bicycling remain limited. While an exhaustive review of all reputable literature on the topic is not feasible, over 75 articles and reports were reviewed in order to establish a reliable foundation for the rest of the study.

The literature review was specifically useful in revealing relevant data sources, recent important bicycling phenomenon and applicable methodology such as survey design techniques.

Nonetheless, city-, state- and nationwide studies have been conducted in recent years in the United States and Europe. Reports on bicycling in cities such as Portland and New York, states such as Iowa and Colorado, and nations like the United Kingdom have provided numerous data, utilizing increasingly sophisticated methodology. The studies examined varied substantially in scope and scale. Many of the studies relied mainly on available national and state data, while others augmented secondary sources with primary data collection.

Key Studies

Phase I. Three previously conducted studies provided particular value to Phase I of this study. They are listed and reviewed in detail below.

Center for Research in Economic and Social Policy. "The Economic Impact of Bicycling in Colorado." 1999.

The estimated economic impact of bicycling in Colorado is about $1 billion. Manufacturing produces the largest share of bicycling-related revenue, followed by retail and tourism.

Thirty bicycle and related products manufactures were identified in Colorado, with combined estimated annual revenue of $762.7 million and payroll of $18.1 million.

Retailers reported total annual revenue of $200 million and payroll of $16 million. Half of bicycle purchases came from either bicycle-specific businesses or general sporting goods stores, making up 79 percent of bicycle expenditures. Average bike price was $619.

Ski resorts attract 700,000 cyclists annually, who spend $56-76 million each year. Seventy percent of these cyclists are from out of state.

Ten percent of Coloradans report having taken a bicycle-related vacation in the past year, spending an average of $360 per vacation.

Defined sectors of the cycling economy include manufacturing, retail, tourism and other activities. Other activities include touring, racing and charity events. These categories could be lumped into one "event" sector of the cycling economy in future studies. The revenue, full-time equivalent employment, and payroll are estimated for each sector.

Surveys of manufacturers, retailers, ski resorts, chambers of commerce and households were conducted. The amount of cycling at ski resorts is relatively unique to Colorado, though parallel secondary cycling use infrastructure could be explored in other locales.

Bike sale outlets were categorized by store type, and the distribution of number of bikes sold and proportion of bike expenditures by store type were estimated.

Grous, Alexander. "The British Cycling Economy."

The report defines "cycling economy" and offers a gross cycling contribution to the economy, quantified at £2.9 billion or £230 per cyclist per year as of 2011. Cycling participation is growing, and a projected growth trend of one million additional "regular cyclists" would add £141 million to the economy between 2011 and 2013. Several factors are attributed to this growth including the tripling of the National Cycle Network (in miles).

Benefits to the British economy include 2010 cycle sales of £1.62 billion (28% annual increase), £853 million in accessory sales and maintenance, 23,000 direct jobs earning over £500 million and providing over £100 million in tax revenue, and health benefits estimated to save the economy £128 million per year. Health benefits include reduced costs of treating obesity and reduced absenteeism (cyclists report missing work 1.3 days per year less than non-cyclists). Cyclists are estimated to be saving the economy £193 million in absentee costs.

Barriers to the growth of cycling include safety and self-confidence concerns among individuals, time constraints, an increase in the proportion of children being driven to school, and limited public funding for infrastructure. Unlike in the nearby Netherlands, most

(70%) British cyclists are male. A high (42%) proportion of children own bicycles, but more than half do not ride regularly. The report explores latent demand, represented by the 2.2 million Britons who desire to cycle have yet to due to lack of information of funds. These potential cyclists represent £516 million of economic potential.

There are an estimated 13 million cyclists in the U.K., representing 27 percent of the population. Thirty-three percent at classified as regular cyclists, 41 percent as occasional cyclists, and 26 percent as frequent cyclists. Despite being the smallest classification, frequent cyclists account for 38 percent of the sales and accessory market.

The report draws extensive comparisons to other northern European countries, which is beneficial in part because of similar climate, riding seasons, and population and infrastructure densities. Similarly, comparing Michigan's cycling characteristics to those of other Midwestern states would prove beneficial.

Cycling employment data is broken down into three categories: retail sales, manufacturing, and cycling infrastructure. Cyclists are divided into three major segments — occasional cyclists, regular cyclists who cycle more than 12 times per year, and frequent cyclists who cycle at least once per week. Four sub-segments are also defined — family, consisting of parents and children who ride together; recreational users; commuters; and enthusiasts.

The exploration and quantification of latent demand proves telling. Assessing the number of people desiring to cycle but prevented from doing so by barriers, while outlining the benefits of a growing cycling economy and defining those barriers, would be valuable to those taking action and would be crucial to informing decisions regarding the deployment of capital.

Sustainable Tourism and Environment Program. "Economic and Health Benefits of Bicycling in Iowa." Fall 2011.

Iowa has over 1,600 miles of trails. Seven percent of Iowans mountain bike, while 41 percent use trails for biking or walking. There are an estimated 150,000 recreational riders who generate $367 million in direct and indirect economic impact and save the state $74 million in health care costs. There are an estimated 25,000 commuter cyclists who generate $52 million in direct and indirect economic impact and save the state $713 million in health care costs.

Twenty-nine percent of Iowans do not meet recommended levels of physical activity, while 67 percent are overweight or obese. Obesity-related health care costs in Iowa are estimated at $783 million, not including absenteeism or low productivity costs.

There are 61 bicycle-specific retail businesses in the state and 18,300 (20% road bikes, 11% children's bikes, 21% mountain bikes, and 48% leisure bikes) bikes sold in 2010. Revenues totaled $8.1 million in bikes, $1.9 million in clothing, $4.2 in accessories, and $3.7 million in repairs. Fifteen year-round bicycle organizations were identified, averaging 106 members and an average budget of $22,000. The economic value of these organizations' volunteers is estimated at $340,000. Register's Annual Bicycle Ride Across Iowa (RAGBRAI), Iowa's

highest profile cycling event created an estimated $16.9 million in direct spending by 8,802 traveling parties ($1,921 per party).

Primary research was conducted via surveys of individual cyclists, bicycle-specific retailers, and bike organizations. Data was collected regarding demographics, bike usage, events, and business statistics. For the sake of conservative estimates, median figures were used in calculating impacts.

Individual cyclists were divided into commuters and recreational cyclists. A further division of recreational cyclists would prove beneficial, as it would distinguish cycling enthusiasts from causal recreational riders.

Retail data was collected regarding type, number, revenue of bike sales, expenses and revenues, employment figures, and customer information. Employment and sales data such as number of sales, category of sales, and revenue are relevant and applicable to most any cycling impact study. Less useful is the report's summing of revenues and expenses to provide a total impact figure for retailers. Non-bike specific retailers were not included in the study. This could be done by applying general athletic retailers' sales data to their proportion of bike sales to total sales.

Bicycle organizations provided data on number of members, volunteer types and hours, event participation, and budget. Budget allocation information would prove beneficial.

Health care cost savings were determined by applying Centers for Disease Control data to individual cyclists riding information.

Phase II. Four studies were published after the literature review for Phase I was conducted. These studies were referenced extensively during Phase II of this report. They are listed and reviewed in detail below.

Dean Runyan Associates. "The Economic Significance of Bicycle-Related Travel in Oregon." April 2013.

Conducted by Dean Runyan Associates, this study attempts to document the economic impact of bicycle-related travel in Oregon. The study team surveyed bicycle participants through bicycle-related email lists, as well as a national household panel of Oregon visitors. Surveys were used to collect information on direct spending as a result of bicycle trips in Oregon.

Using survey responses, the study team calculated travel expenditures, total earnings as a result of bicycle-related travel expenditures, increases in employment as a result of bicycle-related expenditures, and the increase in local and state tax receipts as a result of bicycle-related expenditures.

Charles Brown. Alan M. Vorhees Transportation Center at Rutgers University. "The Economic Impacts of Active Transportation in New Jersey."

The New Jersey study, conducted by Charles Brown at the Alan M. Vorhees Transportation Center at Rutgers University, analyzed how New Jersey's economy would be impacted if local, state, and federal governments did not invest in active transportation infrastructure and improvements within the state. The primary objective of the study was to estimate annual statewide economic impacts of active transportation. To do this, the study team used an input-output model to estimate economic activity and jobs supported as a result of active transportation-related capital investments, businesses, and events. Total economic activity within the state was compared to active transportation-related investments to conduct the cost-benefit analyses.

Similar to the Oregon study, the New Jersey study uses survey data to inform its input-output models. This study is broader in scope than the Oregon study as it looks at the economic impact of all active transportation-related expenditures rather than only bicycle-related events. Additionally, the study analyzes the economic benefits of capital investments in active transportation, a topic not covered by the Oregon study.

McClure Consulting. "An Economic Impact Study of Bicycling in Arizona. Out-of-State Bicycle Tourists & Exports." June 2013.

Conducted by McClure Consulting, this study utilized input-output analyses to estimate the contribution to the Arizona economy from out-of-state visitors engaged in bicycling activities within Arizona, and out-of-state customers of bicycle-related goods manufactured or sold in the state. The Arizona study is similar in nature and scope to the study conducted in Oregon. Both studies used survey data to attempt to estimate the economic impact of bicycling-related activities on their respective states.

Resource Systems Group. "Economic Impact of Bicycling and Walking in Vermont." July 6, 2012.

The Vermont study, conducted by Resource Systems Group, is similar to the New Jersey study as it attempts to estimate the total economic benefits of walking and bicycling in the state of Vermont. The study's core economic model was developed by Regional Economic Models, Inc. (REMI) to calculate the total economic contribution of active transportation infrastructure spending, and spending relating to active transportation events and businesses.

The Resource Systems Group study team found that certain economic impact categories had little reliable information from which to estimate total economic impacts. These categories included avoided transportation consumer and public costs, and the impact on real estate value from active transportation investments. They chose to exclude these categories from the REMI model, and discuss these categories in a more qualitative fashion.

Supporting Studies

The following studies and articles were utilized to varying degrees during the course of the entire study.

Active Living Research. "The Economic Benefits of Open Space, Recreation Facilities and Walkable Community Design." Robert Wood Johnson Foundation. May 2010.

Paper synthesizes previous research in regards to the economic value of outdoor recreation facilities, open spaces and walkable community design. Focuses on the private benefits that accrue to nearby homeowners as well as other users of open space.

Adventure Cycling Association. "Bonjour Cycle Tourism!" 3 October, 2012.

Alliance for Biking & Walking. "Working with the Business Community." 11 July 2012.

Discusses opportunities and tips for working with and consulting to local businesses and business districts.

Alta Planning & Design. "Bicycle-Related Industry Growth in Portland." Boulder, CO. June 2006.

Analyzes the economic impact of bicycling to the City of Portland by conducting a survey of over 100 businesses. Survey consisted of four questions related to gross revenue related to bicycles, growth in revenue over the past decade, the effect of Portland's bike-friendly reputation on business, and how the bicycle-related activities of the City could help their business grow.

Alta Planning & Design. "The Value of Bicycle-Related Industry in Portland." Boulder, CO. 2008.

America Bikes. "Bike Spending per Capita."

List of estimated annual revenue per state.

American Hiking Society. "The Economic Benefits of Trails." February 2004.

Archambault, Dennis. "Detroit's New Bicycle Economy." *Model D Media*. 09 October 2012.

Badger, Emily. "Cyclists and Pedestrians Can End Up Spending More Each Month Than Drivers." *The Atlantic Cities.* 05 December, 2012.

Beierle, Heidi. "Byways via Bicycle: Seeing the United States on Two Wheels." *The Journal for America's Byways*. October 2011.

Discussion of bicycle tourism in the United States, including: types of bicycle tourists, route and path characteristics across the nation, general discussion of travelling cross-country via bicycle.

Belden, Russonello & Stewart LLC. "2011 Community Preference Survey National Association of Realtors." 2011.

Bicycle Federation of Wisconsin. "Bicycling: Good for Wisconsin." 17 December, 2010.

Briefly discusses the benefits of bicycling in the state of Wisconsin.

Bicycle Federation of Wisconsin. "Wisconsin Bicycling Businesses." 17 December 2010.

A list of 200 bicycle-related businesses in Wisconsin.

Bicycle Federation of Wisconsin and Wisconsin Department of Transportation. "The Economic Impact of Bicycling in Wisconsin."

Presents the impact of bicycling on Wisconsin and its economy in three parts: overall benefits from bicycling to the state of Wisconsin, economic data on the bicycling industry in Wisconsin, as well as anecdotal data on the economic impact of bicycle tourism and recreation. Total impact is calculated to be $556 million and 3,420 jobs in addition to an undetermined but significant additional economic benefit from bicycle tourism.

Bikes Belong Coalition. "Bikes Belong Survey: The Size & Impact of Road Riding Events." November 2009.

Survey was conducted to estimate the size, number, and direct economic impact of recreational road bicycling events in the year 2008. Total 2008 revenue from recreational road riding events calculated to be $240 million in 2008.

Boston Cyclists Union. "Bike Lanes – Good for Business, Good for Taxpayers."

Describes in detail the benefits to taxpayers from bicycling in the categories of healthcare costs, infrastructure costs, clean air, increased tourism, improvements in traffic safety, and bike lane popularity.

Buehler, Ralph and John Pucher, eds. "City Cycling." *The MIT Press*. November 2012.

Cheng, Elaine et al. "Shopping, Parking, and Transportation In the East Village."

Examines transportation habits and shopping and spending patterns of residents and visitors on 2nd Avenue between Houston St. and 14th St. in the East Village, Manhattan. Analyzes mode of transportation to the area and its relationship with average spending per capita, resident vs. non-resident automobile use, attitudes towards travelling to the area given less/more parking spaces

Clifton, Kelly et al. "Examining Consumer Behavior and Travel Choices." Portland State University. February 2013.

Report looks at consumer spending and travel choices across 89 businesses in the Portland metropolitan area. Study finds that there are differences between the amount consumers spend at various businesses by their mode of travel, but that this difference is less pronounced when controlling for customer demographics. Furthermore, the built environment (employment density, proximity to rail transit, etc) is key to explaining the use of non-automobile modes.

Cortright, Joe. "New York City's Green Dividend." CEOs for Cities. April 2010.

Analyzes the "Green Dividend" of New York, the amount of money that New Yorkers save on auto-related expenses per year that is then spent locally, stimulating the city's economy. Looks at Vehicle Miles Travelled (VMT) per day in New York as compared to the 50 largest U.S. metro areas and calculates savings by multiplying the difference in VMT by the cost of operating a motor vehicle per mile.

Danielle, Sinnett et al. "Making the Case for Investment in the Walking Environment." June 2011.

Puts forth arguments and evidence for investing in the walking environment. Discussion topics include: why invest in walking environments, wider benefits of walking friendly environments, what makes a good walking environment, and the cost effectiveness of investments in walking environments.

Dean Runyan Associates. "Proposal – Oregon Bicycle Economic Impacts." 29 March, 2012.

Proposed project will provide a detailed description of the magnitude of bicycling from a manufacturing and retail sales industry and recreational travel perspective by documenting the various ways that bicycles and bicycling provide economic benefits to the state and its residents.

Dean Runyan Associates. "The Economic Significance of Bicycle-Related Travel in Oregon." April 2013.

Study aims to provide a detailed description of the magnitude of bicycling from a recreational travel perspective by using a detailed questionnaire. Data shows that in 2012 travelers who participated in bicycle-related activities while traveling in Oregon spent nearly $400 million – approximately 4.4 percent of direct travel spending in the state.

Dobes, Leo. "Economic Evaluation of Bicycle Infrastructure."

Appendix 4 in a larger paper, "Walking and Cycling Trunk Infrastructure Report." Appendix provides an outline of the Cost Benefit Analysis methodology used to estimate the benefits of enhanced bicycle lanes and facilities in Canberra. Authors of the paper want to apply only a damages-avoided approach with value of statistical life based on the human capital approach, as opposed to the willingness to pay based on choice modeling.

East Central Florida Regional Planning Council. "Economic Impact Analysis of Orange County Trails." 2011.

Attempts to determine the economic impact of the Little Econ Greenways, West Orange and Cady Way Trails on Orange County Florida's local economy. A general survey was distributed to trail users in an attempt to collect data on the spending habits associated with using the three trails. In order to determine economic impact, data from the surveys was analyzed via the Regional Economic Model, Inc. (REMI).

Economic and Policy Resources, Inc., Local Motion, and Resource Systems Group, Inc. "Economic Impact of Bicycling and Walking in Vermont." 6 July, 2012.

Estimates the total economic benefits of walking and biking in the state of Vermont, with a more comprehensive approach than simply analyzing revenue from tourism and visitor spending. Study finds the overall economic contribution of bicycle and pedestrian oriented activities in Vermont in 2009 to be $82 million dollars in output and 1,418 jobs coming from infrastructure and bicycle-pedestrian events and businesses.

Flusche, Darren.. "Bicycling Means Business: The Economic Benefits of Bicycle Infrastructure." *Advocacy Advance*. July 2012

Highlights the impact the bicycle industry and bicycle tourism can have on state and local economies, discusses the cost effectiveness of investments, points out the benefits of bike facilities for business districts and neighborhoods, and identifies the cost savings associated with a mode shift from car to bicycle. Evidence shows that investments in bicycle infrastructure are a cost-effective way to enhance shopping districts and communities, generate tourism and support business.

Garrett-Peltier, Heidi. "Estimating the Employment Impacts of Pedestrian, Bicycle, and Road Infrastructure." Political Economy Research Institute. December 2010.

Case study that estimates the employment impacts of various transportation infrastructure projects in the city of Baltimore, particularly in regards to the differences in employment resulting from different project types — projects that focus on bicycle and pedestrian infrastructure vs. those that do not. In descending order of total jobs per million dollars spent, projects are ranked in the following order: Pedestrian projects, bike lanes (on-street), bike boulevard (planned), road repairs and upgrades, and road resurfacing.

Garrett-Peltier, Heidi. "Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts." Political Economy Research Institute. June 2011.

Analyzes the employment resulting from the design and construction of pedestrian and bicycling infrastructure projects. Data were gathered from Departments of Transportation using detailed cost estimates on a variety of projects to create an input-output model that studies the direct, indirect, and induced employment that is created through the design, construction, and materials procurement of bicycle, pedestrian, and road infrastructure.

Gotschi, Thomas. "Costs and Benefits of Bicycling Investments in Portland, Oregon." *Journal of Physical Activity and Health*. 2011.

Objective is to assess how costs of Portland's past and planned investments in bicycling relate to health and other benefits. Compares costs of investment plans with health care cost savings and value of statistical life savings. Results show that investments of between $138 and $605 million will result in health care cost savings of $388 to $594 million, fuel savings of $143 to $218 million, and savings in value of statistical lives of $7 to $12 billion.

Grabow, Maggie, Micah Hahn, and Melissa Whited. "Valuing Bicycling's Economic and Health Impacts in Wisconsin." The Nelson Institute for Environmental Studies Center for Sustainability and the Global Environment, University of Wisconsin-Madison. January 2010.

Assesses the economic and health benefits of bicycling recreation in the state in addition to demographic trends characterizing current and future cyclists. Economic impact is determined by quantifying the number of bicycle person-days, determining the average expenditure of bicyclists, and then modeling total economic impacts using an input/output model. Study estimates total economic impact of bicycle recreation and tourism in Wisconsin to be $924 million in addition to the total potential value of health benefits at $410 million.

Griffin, Robert, Jennifer Hoag, and Michael Toma. "Coastal Georgia Greenway Market Study and Projected Economic Impact." *Armstrong Atlantic State University Center for Regional Analysis.* December 2003.

Study estimates annual use and economic impact of a 150-mile multi-use trail that exists as part of the Georgia component of the East Coast Greenway. Analyzes both non-quantifiable as well as quantifiable economic benefits given differing base assumptions regarding percentage of trail users that are local residents.

Hollowell, Dana. "Cycling tourists, rails-to-trails boost Michigan as two-wheeled vacation destination." *Bridge Magazine*. 05 April 2012.

Krizek, Kevin. "Estimating the Economic Benefits of Bicycling and Bicycle Facilities: An Interpretive Review and Proposed Methods." *Essays on Transportation Economics.* 2007.

Paper reviews and interprets existing literature regarding the economic benefits of bicycle facilities and suggests strategies to evaluate economic benefits in future work. Discussion of central issues and confounding factors in the analysis of bicycle benefits as well as how the framework presented in the paper can be built upon.

Lawrie, Judson et al. "Bikeways to Prosperity – Assessing the Economic Impact of Bicycle Facilities." Institute for Transportation Research and Education. February 2006.

Determine if benefits gained from North Carolina Department of Transportation investments in bicycle facilities in the Outer Banks justify the investment in additional facilities across the state. Economic Impact Analysis looks at the degree to which bicycling tourists were drawn to the area because of bicycle facilities. Study suggests that public investments in other coastal and resort areas could return similar benefits.

League of Michigan Bicyclists. "2012 Sunrise Bicycle Tour – Survey Results."

League of Michigan Bicyclists. "State of Michigan Bicycle Profile." 16 April, 2013.

Lists different bicycle-related organizations, groups, and bicycle-friendly businesses across the State of Michigan.

Lee, Karen. "Creating Healthy Communities Through Design." 28 June, 2011.

Overview of how community design impacts health by looking at trends in community design and their correlation with increases in obesity and diabetes and general declines in health. Also provides data on co-benefits of creating or improving access to places for

physical activity such as environmental improvements, money saved to the consumer, and job creation.

Liechty, Rachel and Ingrid Schneider. "Lake County Scenic Byway: Awareness, impact on quality of life & economy." University of Minnesota Tourism Center. December 2010.

Study aims to identify, via a questionnaire, consumer awareness of the Lake County Scenic Byway, the byway's impact on quality of life among residents, and the economic impact of byway travelers to the regional economy. Economic impact is estimated at $32 million in economic output and 512 full-time, part-time, and seasonal jobs. Litman, Todd. "Economic Value of Walkability." Victoria Transport Policy Institute. 12 December 2007.

Litman, Todd. "Economic Value of Walkability." Victoria Transport Policy Institute. 2007.

Describes ways to evaluate the benefit of walking and walkability from the viewpoint that walking is currently undervalued in conventional transportation planning. Potential walkability impacts include accessibility, consumer cost savings, public cost savings, efficient land use, livability, public fitness and health, economic development, and equity. Three approaches to integrate the value of walkability in transportation planning decisions are discussed: as a proportional share of total travel activity, a cost allocation approach, and a cost-benefit analysis approach.

Lovy, Howard. "Bike trails bring two-wheel tourism to northern Michigan businesses." *Crain's Detroit Business.* 26 September, 2012.

Meisel, Drew. "Bike Corrals – Local Business Impacts, Benefits, and Attitudes." *Portland State University School of Urban Studies and Planning.* 2010

Aims to research and closely examine the perceived benefits and impacts of bike corals on local businesses proximate to a corral. Web-based survey administered for all businesses within one half-block of a bike corral. Survey results show bike corrals are perceived to help promote sustainability, enhance street and neighborhood identity, increase foot and bike traffic, etc.

National Transportation Enhancements Clearinghouse. "The Social and Economic Benefits of Transportation Enhancements."

Showcases 10 projects that demonstrated the potential of the Transportation Enhancements (TE) program to bring about positive chance and economic growth in local communities.

National Bicycle and Pedestrian Clearinghouse. "The Economic and Social Benefits of Off-Road Bicycle and Pedestrian Facilities." Technical Assistance Series, Number 2. September 1995.

Nelson, Charles et al. "Rail-Trails and Special Events: Community and Economic Benefits." Michigan State University.

Discusses community and economic benefits associated with two recreational bicycle special events held on the Pere Marquette Rail-Trail (PMRT) in Midland County Michigan. Both events brought into over $450,000 total in direct spending in the year 1999.

Neuner, Rory. "Resources for Michigan Economic Impact of Bicycling Study." 19 February, 2013.

Briefly describes current hot issues in Michigan related to transportation in addition to listing major bicycling organizations.

New York City DOT. "Measuring the Street: New Metrics for 21st Century Streets." 2012.

Discusses key approaches to street design projects, as well as how to measure results against goals for safety. Using a cross-section of recent NYCDOT street design projects, the report details the metrics which NYCDOT uses to evaluate street projects. Metrics include: crashes and injuries, volume of vehicles, traffic speed, economic vitality, user satisfaction, and environmental and public health benefits.

Nighswander, Matt. "Bike lanes may benefit small businesses." *NBC News*.

Outdoor Industry Foundation. "The Active Outdoor Recreation Economy." Boulder, CO. 2006.

Analyzes the active outdoor recreation economy and calculates its total economic impact in the United States. Looks at subgroups of the industry such as different types of recreation, participation across different regions, sales revenue generated, jobs involved in supporting the industry.

Pew Center on the States and The Rockefeller Foundation. "Measuring Transportation Investments: The Road to Results." May 2011.

Identifies which states have the essential tools in place to make more cost-effective transportation funding and policy choices. Conclude that states generally have the goals, performance measures, and data to help them measure progress in regards to safety and infrastructure preservation. In other important areas such as jobs, commerce and environmental stewardship, policy makers as well as the public need better and more information about the results they are getting for their money.

Rails-to-Trails-Conservancy. "Active Transportation Beyond Urban Centers: Walking and Bicycling in Small Towns and Rural America." Washington, DC.

New analysis of 2009 National Household Travel Survey for five different types of rural areas improves upon previous research which placed all types of rural areas in one category. Report shows that, for some categories of rural communities, human-powered mobility is as common as in urban areas. Discusses the need for federal investments in smaller communities as compared to more urban areas.

Rails-to-Trails Conservancy. "Active Transportation for America: The Case for Increased Federal Investment in Bicycling and Walking." Washington, DC. 2008.

Report quantifies the benefits from cycling and walking under business-as-usual scenario, modest scenario, and substantial scenario. Benefits include avoided driving, fuel savings, CO2 emission reductions, and physical activity. Benefits to the economy range from $4.1 billion per year in the BAU case to $65.9 billion in the substantial scenario.

Rails-to-Trails-Conservancy. "D&L Trail 2012 User Survey and Economic Impact Analysis." December 2012.

Study conducted in 2012 to quantify the number of users on different sections of the Delaware and Lehigh National Heritage Corridor across different sections of the trail. Surveys were also available along the trail that asked questions regarding trail usage, distance travelled to use the trail, amount of money spent while visiting the trail/region, etc.

Rails-to-Trails-Conservancy. "Trail User Surveys and Economic Impact: A Comparison of Trail User Expenditures 2009." March 2009

Report focuses on reported dollars spent from trail user surveys completed on seven rail-trails in Pennsylvania.

Rodgers, Anthony and Patrick Vaughan. "The World Health Report 2002: Reducing Risks, Promoting Healthy Life." World Health Organization. 2002.

Describes the amount of disease, disability and death in the world today that can be attributed to a selected number of the most important risks to human health. Also calculates how much of the current burden could be avoided in the next couple of decades if these risk factors are reduced.

Ryan, Bill. "Economic Benefits of a Walkable Community." *Let's Talk Business – Ideas for Expanding Retail and Services in Your Community*. July 2003.

Sayer, Jim. "Calculating the Value of Bicycle Travel." Adventure Cycling Association. 21 March, 2012.

Powerpoint presentation on the value of bicycle travel and associated projects in different locations worldwide.

Snyder, Ryan. "The Economic Value of Active Transportation." Ryan Snyder Associates, LLC.

Fact sheet detailing the benefits of active transportation and how it relates to community design.

Southwick Associates. "The Outdoor Recreation Economy: Technical Report on Methods and Findings." 31 August, 2012.

Study updates and expands upon 2006 study of active outdoor recreation by adding an additional survey to gauge the broader economic contributions of outdoor recreation. In order to combine economic contributions from the two surveys, a set of activities was

defined that encompasses both types of recreation (motorized and non-motorized). Total economic impact is calculated as a sum of direct, indirect, and induced effects.

The Center for Research on Economic and Social Policy (CRESP) of the University of Colorado at Denver. "Bicycling and Walking in Colorado: Economic Impact and Household Survey Results." April 2000.

Provides statistical information regarding the economic impact of bicycling in Colorado. Data are gathered phone and mail surveys of bicycle manufacturers, retail bicycle shops, and ski resort operators in Colorado. Economic impact from bicycling in Colorado calculated to be over $1 billion annually, primarily from bicycle manufacturing.

Tomes, Patricia and Carl Knoch. "Trail User Surveys and Economic Impact: A Comparison of Trail User Expenditures 2009." Rails-to-Trails Conservancy. March 2009.

Compares survey responses completed on seven rail-trails in Pennsylvania to seven user surveys completed on comparable trails in the northeast U.S. Report reviews a selection of trail user surveys analyzing the economic impact of rail-trails, compares the data and methodology used, and creates a comparative table which details dollars amount spent per trail user on each trail.

Transportation Alternatives. "Streets to Live By." August 2008.

Examines the costs and benefits of a wide-ranging "livable streets" program in NYC, a program that aims to increase pedestrian and bicycle usage of city streets. Paper reviews the Livable Streets movement, how the movement will benefit the community and the economy, and how to best make NYC livable. Recommendations include making livable streets the rule, increasing the amount of walking in NYC, promoting livable streets on the basis of public health and in business districts, etc.

Vancouver Area Cycling Coalition. "How do Bikes Benefit Business?"

Vogt, Christine, Chuck Nelson, and Joel Lynch. "Business Analysis Report – Impacts of the Pere Marquette Rail-Trail on the Economy and Business Community of Midland and Isabella Counties, Michigan." *Department of Park, Recreation and Tourism Resources, Michigan State University*.

Powerpoint describing the benefits and costs related to the construction and use of the Pere Marquette Rail-Trail.

Woehrer, Julia. "New Pavement Means New Customers for Local Businesses." *Northwest Michigan's Second Wave.* 23 October, 2012.

Yates, Gus. "The Economic Case for Carfree Development." *CarFree City, USA*.

Powerpoint presentation detailing the benefits of a car-free development plan. Benefits include less automobile-related fatalities, lower levels of obesity, pollution decreases, decreases in household transportation costs, infrastructure savings, etc.

APPENDIX D.

Survey Instruments and Interview Guides

APPENDIX D.
Survey Instruments and Interview Guides

Appendix D contains the following survey instruments and interview guides:

- The survey instrument used for the bicycling event surveys;
- The survey instrument used for independent touring bicyclists; and
- The interview guide used in discussions with bicycle touring companies.

Event Participant Survey Instrument

The Michigan Department of Transportation (MDOT) is conducting a study assessing the economic impacts of bicycling throughout the state. Along with a study team consisting of BBC Research & Consulting and R. Neuner Consulting, MDOT is interested in learning more about participation and spending habits associated with bicycling event and travel.

Please take a few minutes to complete the following survey. The survey should take you no more than 5 minutes to complete. There are no right or wrong answers, and every answer is very important to us. If you participate in multiple bicycle-related events, you may be asked to answer the survey based on your trip related to each event. We appreciate your time and effort with this process. All of the information gathered will be reported in aggregate and your responses will be anonymous.

1. Have you participated in an organized bicycling event in Michigan in the past 12 months?
    a. Yes
    b. No **(terminate survey)**

2. Were you invited to take this survey regarding a particular event in Michigan?
    a. Yes
    b. No **(skip to question 4)**

3. What event invited you to take this survey?
    [Drop down menu with list of events as well as options to choose 'other' and enter a response, or "No event invited me to take this survey] **(skip to question 5 unless "No event…" is selected)**

4. What is the most recent Michigan bicycling event in which you participated?
    [Drop down menu with list of events as well as an option to choose 'other' and enter a response]

5. Did you travel to Michigan from another state or country to participate in the event?
    a. Yes **(skip to question 7)**
    b. No

6. Did you travel more than 50 miles to participate in the event?
    a. Yes
    b. No

7. The bicycling event I participated in was…
    a. The primary reason for my travel. **(skip to question 9)**
    b. One of multiple reasons for my travel.
    c. Not the reason for my travel (i.e. I would have made the same trip regardless of whether or not I participated in the event).

8. Did you extend the length of your trip because you participated in the event?
    a. Yes
    b. No
9. How many people were in your travel party (including yourself)? _____

10. How many people in your party participated in the event (including yourself)? _____

11. How many days was your trip? _____

12. Please estimate the amount of money your party spent **per day** in Michigan on the following categories during your trip.
    a. Lodging (e.g. hotels, campgrounds, cottages) $_____
    b. Restaurants and bars $_____
    c. Groceries (i.e. food and beverage not at restaurants and bars) $_____
    d. Non-food shopping (e.g. clothing, souvenirs, etc.) $_____
    e. Non-bicycling entertainment (e.g. amusement park, movie theater, etc.) $_____
    f. Bicycles, components, repairs, and accessories $_____

13. Please estimate the amount of money your party spent on transportation (e.g. airfare, gas, public transportation, car rental or parking) during your trip. $_____

14. What is your age?
    a. Under 18
    b. 18-24
    c. 25-34
    d. 35-44
    e. 45-54
    f. 55-64
    g. 65 or above

15. What is your sex?
    a. Male
    b. Female

16. What is your ZIP code?
    a. _____
    b. I live outside the United States

17. What is your annual household income?
    a. Less than $25,000
    b. $25,001-50,000
    c. $50,001-75,000
    d. $75,001-100,000
    e. $100,001-125,000
    f. $125,001-150,000
    g. $150,001-200,000
    h. $200,001 or more

18. Additional comments: _____

Thank you for your time and participation. As we mentioned at the beginning of the survey, you may be asked to take this survey again regarding your participation in another event. If you have the time, we appreciate your completion of a survey regarding your trip and expenses for each bicycle-related event.

MDOT Touring Bicyclist Survey

The Michigan Department of Transportation (MDOT) is conducting a study assessing the economic impacts of bicycle touring throughout the state. Along with a study team consisting of BBC Research & Consulting and R. Neuner Consulting, MDOT is interested in learning more about participation and spending habits associated with bicycle touring and travel. Please take a few minutes to complete the following survey. The survey should take you no more than 5-7 minutes to complete. There are no incorrect answers, and every answer is very important to us. If you have any questions regarding this survey, please contact Josh DeBryun at MDOT: debruynj@michigan.gov

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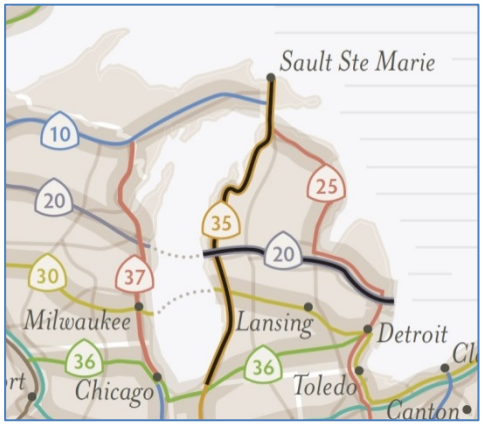
1. Have you ever participated in a multi-day bicycle trip in Michigan?
   - ❑ Yes
   - ❑ No (If no, please skip to Question 15)
2. Have you ever visited Michigan before your most recent mutli-day bicycle trip?
   - ❑ Yes
   - ❑ No
3. How long has it been since your most recent multi-day bicycle trip in Michigan?
   - ❑ Within the past month
   - ❑ More than one month but less than six months
   - ❑ More than six months but less than a year
   - ❑ More than one year but less than three years
   - ❑ More than three years
4. Thinking about your most recent mutli-day bicycle trip in Michigan, how many **days** did you spend in Michigan (including rest days)?

   _____
5. On your most recent multi-day bicycle trip in Michigan, how many **bicyclists** (including yourself) were in your travel/party group?

   _____
6. On your most recent multi-day bicycle trip in Michigan, approximately how many **miles** did you ride **per day** touring within the state (exclude rest day riding)?

   _____
7. On your most recent multi-day bicycle trip in Michigan, approximately how many miles did you ride in **total** within the state?

   _____
8. At any time during your trip did you utilize U.S. Bicycle Route 20? (US Bicycle Route 20 is an east-west route traveling through central Michigan. Route 20 travels between Marine City north of Detroit, to Ludington on the Lake Michigan coast. See map below.)
   - ❑ Yes
   - ❑ No



9. At any time during your trip did you utilize U.S. Bicycle Route 35? (US Bicycle Route 35 is a north-south route in western Michigan that generally follows the Lake Michigan coastline. Route 35 enters Michigan near New Buffalo in the southwestern corner of the state and terminates the Upper Peninsula in Sault Ste. Marie. See map above.)
   - ❑ Yes
   - ❑ No
10. Please indicate, to the best of your ability, the cities in Michigan closest to where you entered and exited the state on your most recent multi-day bicycle trip.

    Enter: _____

    Exit: _____
11. What was the main surface type you used on your most recent multi-day bicycle trip in Michigan?
    - ❑ Paved road
    - ❑ Paved side path/rail trail
    - ❑ Dirt road
    - ❑ Dirt rail trail

12. Did your trip include riding an Amtrak train in Michigan?

- ❑ Yes
- ❑ No

13. Please briefly describe your bicycle route through the state of Michigan (description can include cities you stayed in, routes used during the trip, etc.)

_____
_____
_____
_____
_____
_____
_____
_____
_____

14. Please estimate the amount of money your party spent **per day** in Michigan on the following categories during your trip (bicycling days and off days combined).

a.) Lodging (e.g. hotels, campgrounds, cottages) $_____

b.) Restaurants and bars $_____

c.) Groceries (e.g. food and beverage not at restaurants and bars) $_____

d.) Non-food shopping (e.g. clothing, souvenirs, etc.) $_____

e.) Non-bicycling entertainment (e.g. amusement park, movie theater, etc.) $_____

f.) Bicycles, components, repairs and accessories $_____

g.) Non-bicycling transportation $_____

15. What is your age?

- ❑ Under 18
- ❑ 18-24
- ❑ 25-34
- ❑ 35-44
- ❑ 45-54
- ❑ 55-64
- ❑ 65 or older

16. What is your sex?

- ❑ Male
- ❑ Female

17. What is the ZIP code of your primary residence?
_____ (Skip to question 19)

- ❑ I live outside the United States

18. If your primary residence is not located in the United States, in what city and country is your primary residence located?

City:_____

Country: _____

19. What is your annual household income?

- ❑ Less than $25,000
- ❑ $25,000 - 49,999
- ❑ $50,000 - 74,999
- ❑ $75,000 – 99,999
- ❑ $100,000 – 124,999
- ❑ $125,000 – 149,999
- ❑ $150,000 – 199,999
- ❑ $200,000 and above

20. Additional Comments: _____

_____
_____
_____
_____
_____
_____

To return, simply fold this survey in half so that the Business Return information is on the outside, either staple or tape to secure it, and then put it in the mail. No postage necessary.

THANK YOU FOR YOUR PARTICIPATION!

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Interview Guide

Good morning/afternoon, my name is _____ and I am with BBC Research & Consulting. We are working with the Michigan Department of Transportation (MDOT) to assess the economic impact of bicycling in the state of Michigan. In addition to surveying bicyclists at events such as DALMAC and the Michigander, we are attempting to contact companies that provide services to touring cyclists in the state of Michigan in order to calculate the economic impact of touring cyclists within the state. Are you willing to spend a few minutes (5-10) discussing your business and the services that you provide to touring cyclists in Michigan?

Below is a list of potential questions for interviews with bicycle touring companies that operate in Michigan.

- What types of tours do you offer?
- How many do you offer each year?
- What is the total number of cyclists who tour with your company each year?
- What proportion of your clients are from outside of Michigan?
- How many staff do you employ? Are they employed full-time or part-time?
- What are the average rates/prices for your tours?
- Do you provide services to self-supported cyclists in the state of Michigan?
    - Approximately how many self-support cyclists do you provide services to each month/year?
    - What services do you offer? How much do they cost?
- What are your average annual revenues? What proportion comes from touring-related income?
- Business trends in the past few years? Have you noticed more, less, or the same amount of touring bicyclists in Michigan?
- Have you noticed any change in business as a result of U.S. bicycle routes 20 and 35? Have you noticed customers specifically mentioning those routes as desired bicycle paths/tours through the state?
- Can you think of anything else that the state should consider in order to improve bicycle touring in Michigan?
- Other comments/concerns?
- Do you know of any other companies in the state of Michigan that would be willing to discuss their businesses providing services to touring cyclists?

APPENDIX E.

Michigan Bicycle Events

APPENDIX E.
Michigan Bicycle Events

Appendix E includes the lists used for the study for targeted bicycle events in Michigan as well as the other events included in the data collection process.

Figure 1.
Targeted Bicycle Events

Targeted Events	
Assenmacher	Michigan Mountain Mayhem Gravel Grinder
Barry-Roubaix Gravel Road Race	Michigan Mountain Mayhem Spring Classic
Bike Michiana for Hospice	Michigan's UP Tour
Black Bear Bicycle Tour	MSU Grand Fondo
Blue Water Ramble	Mud Sweat and Beers
Celebration of Cycling	NTN Trails Fest
Colorburst	ODRAM
Copper Harbor Trails Festival	One Helluva Ride
Grand Rapids Triathlon	PALM
HealthPlus Tour de Crim	Ride Around Torch
Holland Hundred	Shoreline West
Lakeshore Harvest Country Bike Tour	Tailwind Cyclocross
Leelanau Harvest Tour	Tour de Livingston
Lowell 50	Yankee Springs Time Trial
Lumberjack 100	Zeeland Criterium
Michigan Mountain Mayhem	Zoo-de-Mackinac Bike Bash (tour)

Source: BBC Research & Consulting.

Figure 2.
All Other Bicycle Events

All Other Events			
Addison Oaks	Iron Range Roll	Mt. Brighton Town Series	Tawas Triathalon
Alma Grand Prix of Cyclocross	Jill Byelich Memorial	National 24hr challenge	The 100,000 Meter T-Shirt Ride
Alpena Sunrise Tour	Kal-Haven Trailblazer	Noquemanon Snowbike World Championship	The Highlander
Beat the Train	Kaltour	Northville Tour De Ville	Thumb Sprint Triathlon
Big Bear Butt Ride	Keweenaw Chaindrive	Northwest Tour TCBA	Tour de Crim
Big Mac	Kisscross	Novi Tree Farm Pump Track Jam	Tour de Cure
Bike MS	Lansing Bike Party	Peach of a Ride	Tour de Flint
Bike the Bridge	Lansing Criterium	Peak to Peak	Tour de Ford
Bulldog Bike Tour	Le Tour de Donut	Pedal Grand Rapids	Tour de Lac
Come Clean Duathlon	Le Tour de Mont Pleasant	Pedal n' Paddle	Tour de Mitt
Critical Mass	Lowell Covered Bridge	Potawatomi Single Speed World Championship	Tour de Mount Pleasant
Debaets Davos	Mad Anthony Cyclocross	Race for Wishes	Tour of Frankenmuth
Delta County Century Ride	Make a Wish	Reeds Lake Triathalon	Tour of Woodward
Detroit Bike City	Maple Hill Race for Wishes	Ride for a Cause	Traverse City Cherry Festival
Detroit Randonneurs	Marquette Cyclocross	Ride for Cancer	Trifecta Tour
Fall Fury Cyclocross	Marquette Trails Festival	Ride for Refuge	Triple Trail Challenge
Gaslight Criterium	Massive Fallout	Ride MS	Ultimate Cycle Challenge
Gladstone Metric Century	Maybury Time Trial	Ride of Silence	University of Michigan Triathalon
Gold Coast Bike Tour	MI Titanium	Ride The Highlander	UPCross
Gold Spike Tour	MI Triathlon Championships	Ride Thru Hell	Vino Cycle
Gran Fondo	Michigan Adventure Race	Samford and Sun Triathlon	Westford Recumbent Race
Grand Rapids Ride of Silence	Midwest Recumbent Rally	Shoreline Harvest	Wow ride
Grazie 500	MISCA state championship	Single Speed USA	X100 Mountain Bike Race
Hansen Hills 100	MiTi Triathlon	Singletrack Showdown	Yankee
Harbor Springs Classic	Motor City Bike & Brew Tours	Six Hours of Ithaca	Yooper ride
Hawk Island Triathlon	MS 150 Frankenmuth	Slow Roll	
Holly triathlon	MS 150 Holland	State Cyclocross Championships	

Source: BBC Research & Consulting.

REPORT SUMMARY INFOGRAPHIC

the economic impacts of

BICYCLE TOURISM IN MICHIGAN

The total economic impact of organized bicycling events in 2014 was

$21.9 million

GENERAL FINDINGS

The average economic impact of self-supported touring bicyclists per trip:

$760

69%

of out-of-state self-supported touring bicyclists reported using US Bicycle Routes 20 or 35

CASE STUDY EVENTS

Apple Cider Century

Total economic impact:

$1.94 million

DALMAC

1 in 3

out-of-state participants traveled from a non-neighboring state

Iceman Cometh Challenge

participants traveled from:

36 different states and **2** countries

Michigander

Highest average expenditures per participant of the six case study events

$742

Ore to Shore Mountain Bike Epic

97%

were non-local participants

Tour de Troit

7,500

participants in 2014

For more information contact Josh DeBruyn, MDOT Bicycle and Pedestrian Coordinator at debruynj@michigan.gov

This study was made possible through the Federal Highway Administration State Planning and Research Program administered by the Michigan Department of Transportation.

MDOT

This infographic provides a one-page summary of bicycling in the state of Michigan based on information gathered by BBC Research & Consulting and R. Neuner Consulting for the Michigan Department of Transportation (MDOT) as part of the second phase of a two-phase study on the economic benefits of bicycling events in Michigan. The infographic is accompanied by a report providing information on the state of Michigan and the data sources and methodology used for the study. As part of the study, the team surveyed participants in organized bicycling events throughout the state of Michigan about their spending habits. Self-supported touring bicyclists (bicyclists who do not rely on motor vehicles to carry their gear and provisions while travelling) were also asked to estimate their spending habits while in the state of Michigan. Survey respondents were asked to estimate their spending in the following categories:

- Lodging (e.g. hotels, campgrounds, cottages);
- Restaurants and bars;
- Groceries (i.e. food and beverage not at restaurants and bars);
- Non-food shopping (e.g. clothing, souvenirs, etc.);
- Non-bicycling entertainment (e.g. amusement park, movie theater, etc.);
- Bicycles, components, repairs, and accessories; and
- Transportation (e.g. airfare, gas, public transportation, car rental or parking).

Below is a description of the data sources for the "General Findings" section of the infographic:

- Total economic impact of organized bicycling events — Gathered from survey data of over 3,400 participants in organized bicycling events in Michigan;
- Economic impact of the average self-supported touring bicyclist — Gathered from survey data of over 350 self-supported touring bicyclists in the state of Michigan;
- Percentage of self-supported touring bicyclists using U.S. Bicycle Routes — Self-supported touring bicyclist survey data.

Below is a description of the data sources for the "Case Study Events" section of the infographic. All data were collected via physical and online surveys unless otherwise stated:

- Apple Cider Century — $1.94 million dollars in total economic impact is calculated from the direct spending of out-of-state participants to the 2014 ACC;
- Michigander — $742 is the estimated average expenditure for all 2014 Michigander participants. This average is higher than the other five case study events;
- DALMAC — An estimated 36 percent of out-of-state participants to DALMAC came from states further away than Illinois, Ohio, Wisconsin, and Indiana;
- Ore to Shore — 97 percent of participants in the 2014 Ore to Shore were non-local participants (i.e., travelled to the event from more than 50 miles away);
- Iceman Cometh — According to event registration logs, participants in the 2014 Iceman Cometh Challenge travelled to Michigan from 36 different states and two countries (Canada and Australia);
- Tour de Troit — More than 7,500 individuals participated in the 2014 Tour de Troit, according to event registration information.

For information on U.S. Bicycles Routes in Michigan go to: www.michigan.gov/mdot-biking