



Ann Arbor Case Study— Community and Economic Benefits of Bicycling

Michigan Department of Transportation

FINAL REPORT

Final Report

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Prepared for

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Introduction

This report on the community and economic impacts of bicycling in Ann Arbor is one of five case studies developed for the Michigan Department of Transportation (MDOT) by BBC Research & Consulting and R. Neuner Consulting (the study team). The research on Ann Arbor was conducted as part of the first phase of a study of economics and bicycling throughout Michigan. The study objectives 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 addressed the first three objectives and Phase II will address the fourth and fifth objectives. The combination of the statewide and community specific research provides an opportunity to examine the specific ways policies and infrastructure impact local businesses and residents in the context of bicycling statewide. Additionally, the diverse nature of bicycling in the five case study communities gives stakeholders throughout Michigan an understanding of the many roles bicycling can play in a local economy. As a result, the case study reports can be a useful starting place for residents in investigating the economic benefits of bicycling in communities that were not studied as a part of this research.

Figure 1 provides a map of Michigan showing Ann Arbor, the other four case study communities, and the state capital, Lansing.

Figure 1.
Case study communities

Note:

* Southwest Detroit and the Conner Creek Greenway Corridor.

Source:

BBC Research & Consulting, 2013.



This report includes the following subsections detailing findings related to bicycling in the City of Ann Arbor:

1. Overview;
2. Economic and community benefits of bicycling in Ann Arbor;
3. Data sources;
4. Household spending and bicycle-related manufacturing;
5. Health benefits of bicycling;
6. Bicycle commuting and reduced absenteeism – corporate support of bicycling;
7. Events and tourism;
8. Community support and infrastructure; and
9. Background on bicycling in Ann Arbor.

For more information on the methodology and data sources, please see Section II – Methodology and Appendix B – Data Sources from the full statewide report.

The case study is accompanied by an infographic highlighting key statistics from the research.

1- Overview

Ann Arbor is a mid-size city with a population of about 115,000 residents, making it the fifth largest city in the state. It is located in southeast Michigan and is home to the University of Michigan, which has over 43,000 students and employs over 25,000 staff members. The university shapes the city as well as the local bicycling culture. As such, the city and university have collectively established a considerable network of bicycle infrastructure.

This case study provides an estimate of the community and economic benefits of bicycling in Ann Arbor along with key information from local residents detailing the links between bicycling and the economy. This combination of data helps the reader quantify the impacts of bicycling on the economy while providing background and context from key Ann Arbor stakeholders on how bicycling enhances the Ann Arbor economy.

Given the relative lack of specific data on bicycling in Ann Arbor, the analysis relies on information from a variety of sources including:

- Numerous stakeholder interviews with Ann Arbor officials, bicycle advocates, business owners and residents;
- A household survey conducted with city residents; and
- A variety of secondary data sources including the United States Census Bureau's American Community Survey, the Michigan Department of Community Health and the United States Centers for Disease Control and Prevention.

2- Economic and Health Benefits of Bicycling in Ann Arbor

Below is a summary of the annual economic and health benefits associated with bicycling estimated for Ann Arbor:

- Household spending on bicycling related items (from bicycle-specific and general retail establishments) - \$9.1 million;
- Manufacturing - \$0 (no commercial bicycle manufacturers in Ann Arbor);
- Avoided health care costs - \$7.2 million;
- Reduced absenteeism - \$5.7 million; and
- Event and tourism spending - \$3.4 million.

These benefits total to approximately \$25.4 million annually. The remainder of the report provides more information on each of the key components of the overall economic and community benefits.

There is a growing sense among stakeholders in Ann Arbor that bicycling is a legitimate form of transportation, and forthcoming initiatives like ArborBike (a bike share program poised to launch in the summer of 2013) are viewed as yet another way to increase bicycling mode share. Many stakeholders noted subtle links between the local economy and bicycling:¹

- Ann Arbor has a long and significant history of investing in and planning for bicycle infrastructure, and there is a growing sense that bicycling is a legitimate form of transportation.
- Ann Arbor will become the first Michigan community to launch a full-scale, non-pilot bicycle share system in the spring of 2014 (ArborBike).
- Bicycling is seen by planners as a legitimate tool for mitigating parking and traffic congestion in downtown Ann Arbor.
- Ann Arbor was the only case study community where multiple stakeholders pointed out the bicycle's role in enabling families to go car-free or car-lite. Stakeholders felt this has a major financial impact and keeps living in Ann Arbor an affordable option.

In the words of Norm Cox, a principal of The Greenways Collaborative, a transportation planning firm based in Ann Arbor:

"The greatest economic impact of the increase in bicycling here is in the intangibles. It is not how many bike shops we have or repair places we have, but that is a small fraction of the actual economic impact. The big impact is the overall health of the community and the ability to retain and attract the younger generation, for whom a 'bikeable' community is desirable. That's part of how you brand your downtown. Living downtown, biking downtown, that means a lot."

¹ While qualitative information collected from various stakeholders in Ann Arbor proved to be of great value, the views and opinions expressed by stakeholders cited in this report do not necessarily represent those of MDOT.

3- Data Sources

A number of data sources were used in calculating the overall economic and community benefits and reporting on bicycling in Ann Arbor including:

The American Community Survey (ACS) – The ACS is a survey conducted by the United States Census Bureau on an ongoing basis. It provides statistically reliable information on residents throughout the United States for a variety of topics including basic demographics, employment, transportation and payments for essential goods and services.²

2013 Michigan Department of Transportation Household Survey on Bicycling – As a part of the study, an online household survey was conducted to gather information from Michigan residents about their bicycling habits and spending. Responses were collected through outreach to statewide bicycle organizations, social media, cards distributed in each of the case study communities and post cards mailed to a random selection of households in Ann Arbor. A total of 519 responses from households in Ann Arbor were collected. Estimates regarding bicycling participation among all Ann Arbor households were calculated using the 207 responses collected from the mailed post card surveys. A copy of the survey instrument is included Appendix C of the Phase I report.

Michigan Department of Community Health (MDCH) – The Michigan Department of Community Health provides health services to millions of Michigan residents each year and maintains information on the rate of certain diseases and medical conditions such as stroke and heart disease. MDCH provided data estimating the number of stroke and heart disease cases and the average direct and indirect costs associated per case. This data was used to calculate the number of such cases and costs incurred in Ann Arbor. These estimated costs were applied to the World Health Organization’s estimate of the percent of stroke and heart disease cases attributable to inactivity, thereby allowing a calculation of costs avoided by active bicyclists (those who ride two days a week or more).

The Centers for Disease Control and Prevention (CDC) – The CDC is operated by the United States Department of Health and Human Services and collects data on health problems throughout the country. CDC data were used in calculating avoided health benefits due to bicycling, as described above.

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 manufacturers and retailers throughout the state.

Where appropriate, this case study provides comparisons between other economic research related to bicycling and the results of this study.

²For commuting by bicycle data were taken from the U.S. Census Bureau; American Community Survey; 2008-2012 5-Year Estimates, Table S0801 Commuting Characteristics by Sex. For information on the population and number of households in Michigan, data were taken from U.S. Census Bureau; American Community Survey; 2008-2012 5-Year Estimates, Table DP02 Selected Social Characteristics in the United States. Both tables were accessed at <http://factfinder2.census.gov/>.

In-depth stakeholder interviews. – As a part of this study, key public officials, business owners and representatives of community organizations were interviewed about bicycling and the local economy. A list of interview participants is included in Appendix D of the statewide report.

4- Bicycle-related Retail and Manufacturing

In the household survey, respondents were asked to quantify the total annual household spending on bicycling. Spending on bicycling includes bicycles, components, equipment and maintenance. The most frequent response was \$1-100, while about 32 percent of households reported spending more than \$100 annually.

Based on the distribution of spending, the average Ann Arbor household spent roughly \$200 on bicycle-related equipment in 2013. This is considerably higher than both the statewide average of \$46 per household and the national average of \$90 per-household spending reported by the Outdoor Industry Association in 2012.³ This difference is largely attributable to a bicycling participation rate that is much higher in Ann Arbor than in the nation as a whole. Commuting spending on bicycling is undoubtedly greater in Ann Arbor, as its commute-by-bicycle rate is 3.7 percent versus 0.6 percent nationally.

Using the average household spending from the survey along with ACS data regarding the total number of households in Ann Arbor (45,704), the total spending on bicycle-related retail purchases in 2013 was approximately \$8.3 million.⁴

As shown in Figure 2 below, the most frequently reported type of retail establishment for bicycle purchases was a bicycle-specific retail shop. Such businesses were the source of about 65 percent of all bicycle purchases. Another 17 percent reported obtaining their bicycle second-hand from sources like garage sales and classified advertisements.

³ The Outdoor Recreation Economy, Outdoor Industry Association accessed at : http://www.outdoorindustry.org/images/researchfiles/OIA_OutdoorRecEconomyReport2012.pdf?167

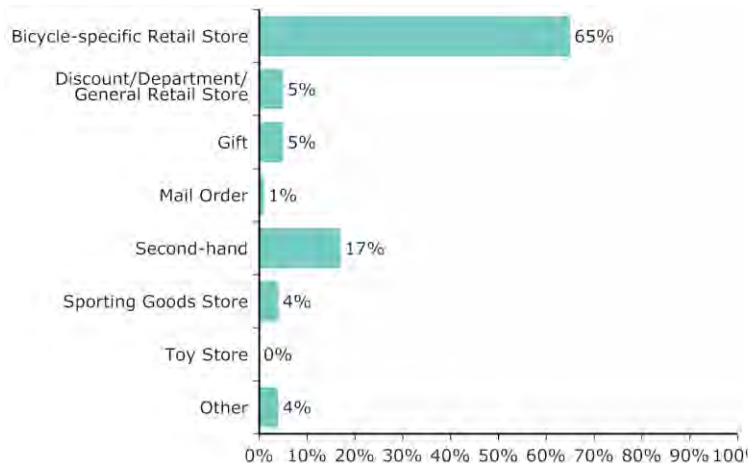
⁴ U.S. Census Bureau; American Community Survey; 2008-2012 5-Year Estimates, Table DP02 Selected Social Characteristics in the United States.

Figure 2.
Primary Bicycle Source

Source:

BBC Research & Consulting from 2013 Michigan Department of Transportation Household Survey on Bicycling

n = 131



4.1 - Bicycle retailers in Ann Arbor. Ann Arbor has a healthy array of local bicycle businesses, from Sic Transit, a shop oriented toward promoting the bicycle as urban transportation, to more traditional retail outlets such as Two Wheel Tango and Wheels in Motion. According to Nancy Short of the getDowntown Program, Ann Arbor’s bicycle retail community plays a “small, but supportive” role in increasing the presence of bicycle infrastructure.

In addition to information from the household survey, data were also collected from Dun & Bradstreet about bicycle retailers in Ann Arbor. Dun & Bradstreet maintains business listings for the United States and reports information such as revenue and employment. Using these data, BBC collected information on bicycle-related retail establishments in Ann Arbor. The average three-year revenue for these businesses in Ann Arbor was about \$3 million. Dun & Bradstreet also reported that these businesses employ approximately 39 individuals. These data serve as a conservative estimate of the bicycle-specific retail sales and employment in Ann Arbor, given that there may be new businesses founded since the data were collected and that many establishments that might be bicycle-specific shops may be categorized more broadly by Dun & Bradstreet (e.g. as a sporting goods retailer).

4.2 - Non-bicycle-specific retail spending. Given that there are many types of retailers in Ann Arbor that sell bicycles, the study team used results from the household survey on bicycle spending along with the reported distribution of type of establishment to estimate bicycle-related spending at general retail establishments. Using this information, bicycle-related spending at general retail establishments totals approximately \$1.1 million in annual sales.

4.3 - Bicycle-related manufacturing in Ann Arbor. Despite being home to several bicycle retailers, there are no known commercial bicycle manufacturing businesses in Ann Arbor.

5- Health Benefits of Bicycling

The study team used information from a variety of sources to estimate the health and workplace benefits derived from bicycling in Ann Arbor.

5.1 - Health benefits from physical activity. Physical activity helps reduce the risk of a number of costly medical conditions. Several studies quantified the value of physical activity in

terms of avoided health costs. The study team quantified benefits to Ann Arbor from physical activity based on avoided costs for treatment of strokes and heart disease. The information used came from a variety of sources including:

- Data on the proportion of the conditions caused by physical inactivity from the World Health Organization;⁵
- The annual number of cases of these conditions in Michigan from the Centers for Disease Control and Prevention (CDC) (strokes) and the Michigan Department of Community Health (MDCH) (heart disease);
- The annual direct and indirect costs per case from the MDCH; and
- The proportion of residents who reported riding their bicycle two or more days each week in the household survey.

Using statewide heart disease and stroke case data from CDC and MDCH, it was estimated that Ann Arbor experiences approximately 327 cases of stroke and 1,330 cases of heart disease annually that require hospitalization. These case numbers were applied to MDCH's cost per case estimates of about \$90,000 for stroke and \$88,000 for heart disease and the WHO's estimation that 10 percent of stroke cases and 20 percent of heart disease cases are attributable to inactivity.

Using these estimates, and based on the number of active bicyclists reported in the survey, the total avoided costs for strokes and heart disease in Ann Arbor due to bicycling is approximately \$7.2 million. A number of other costly medical conditions can also be linked to reduced physical activity including diabetes and some forms of cancer. The study team was not able to find adequate data to estimate the potential avoided health costs for these diseases.

6- Bicycle Commuting and Reduced Absenteeism - Corporate Support of Bicycling

2012 ACS also provides some data on bicycle commuting in Ann Arbor, reporting the total commute share at 3.7 percent.⁶ The ACS asks participants to report their commute by asking how respondents "usually" commuted to work over the past week and directs respondents to only report the type of transportation that accounts for the majority of the distance. As a result, it may underreport the prevalence of bicycle commuting in Ann Arbor given that some individuals may not "usually" bicycle and that many bicycle commuters may combine their bicycle commute with other types of transportation including transit and carpooling.

The getDowntown program also collects information on Ann Arbor commuters. The program began in 1999 as a collaborative effort among the City of Ann Arbor, the Chamber of Commerce, the Downtown Development Authority and Ann Arbor Transportation Authority (AATA). Originally created to manage transportation issues while a downtown parking structure was

⁵ *The World Health Report 2002: Reducing Risks, Promoting Healthy Life.*

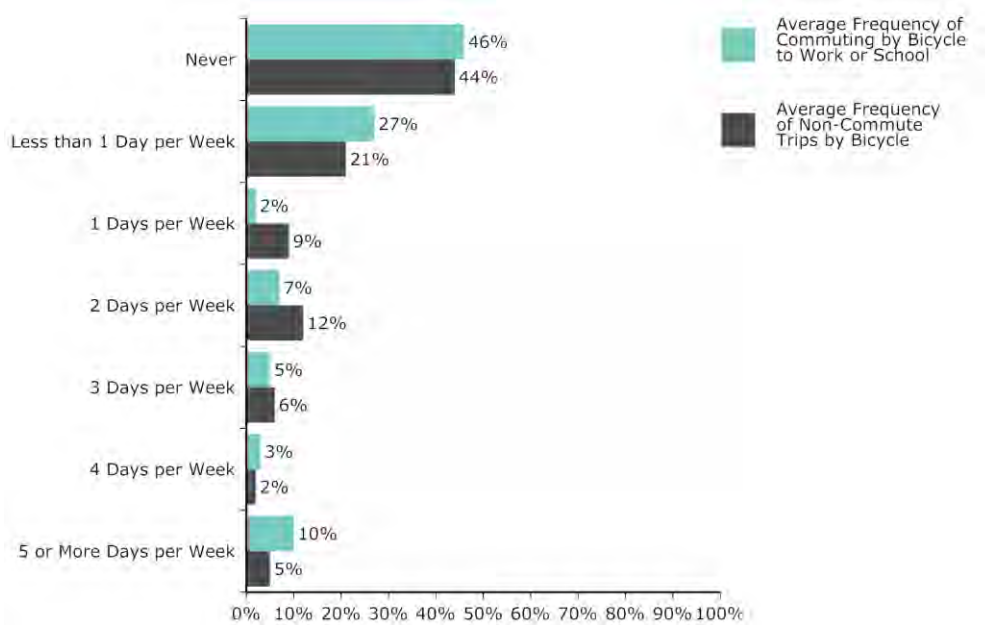
⁶ U.S. Census Bureau; American Community Survey; 2008-2012 5-Year Estimates, Table S0801 Commuting Characteristics by Sex.

getting rebuilt, it was positively received and transitioned into a permanent program to help people find alternative ways to work.

getDowntown conducted a survey of decision makers and commuters in 2013 which showed that 7 percent of commuters reported bicycling all the way to work, while 4 percent reported commuting using a bicycle in combination with the bus.⁷

The study team also asked bicyclists in the household survey about how often they use their bicycle for commuting or other types of transportation. Results are shown in Figure 3 below. More than half of responding bicyclists report commuting to work or school by bicycle at least occasionally, while one-quarter do so at least twice per week. Non-work/school transportation by bicycle, including running errands or attending social events, is roughly as common as commuting.

Figure 3.
Average Frequency of Commuting among Bicyclists



Source: BBC Research & Consulting from 2013 Michigan Department of Transportation Household Survey on Bicycling
n = 132

There was consensus among interviewees that the growth of bicycling has included significant commuting activity. “You see a lot more commuter bikes, and more studded tires in the winter,” said Norm Cox. “It is now difficult to go out on an average day in Ann Arbor and not see a bicycle on every block.”

⁷ Commuting to Downtown Ann Arbor Survey of Decision Makers and Commuters 2013. CJI Research Corporation. Accessed at: <http://www.getdowntown.org/Portals/7/Documents/Studies%20Reports/GetDowntown%20Survey%20report%202013%5b1%5d.pdf>

6.2 - Mitigating congestion. Planners estimate that approximately 70,000 commuters travel into Ann Arbor each weekday.⁸ This commuting traffic and the popularity of special events like the Ann Arbor Art Fair and University of Michigan football games have created traffic and parking problems in and around downtown Ann Arbor.

Planners and stakeholders alike see bicycling as one tool for mitigating Ann Arbor's parking and traffic congestion, and reducing associated costs. "Parking is a certainly a challenge here compared to other Michigan cities," said Eli Cooper, transportation program manager for Ann Arbor. A local advocate, Erica Briggs-Whitacre with the Washtenaw Biking and Walking Coalition, added:

"Congestion, and the resulting lost productivity and stress, are real problems facing businesses and employees in Washtenaw County. We need to expand bicycling infrastructure to improve the economic productivity of our community and provide safe, comfortable commuting options for [residents]."

As discussed briefly above, Ann Arbor has an innovative program that is using bicycling as one way to solve local traffic issues. The getDowntown program provides commuting programs and services to employees and employers in downtown Ann Arbor. getDowntown's programs and services include the go!pass, an annual Commuter Challenge event, bicycle locker rentals, car-sharing service coordination, free commuting assistance, and educational materials. The program is funded through multiple sources, including federal Congestion Mitigation and Air Quality (CMAQ) grant dollars.

The Commuter Challenge is a month-long commuting competition between Ann Arbor area organizations to encourage clean transportation modes, including bicycling. In 2012 there were 239 participating organizations, nearly 2,000 participating employees, and more than 20,000 green commutes logged in the competition.

6.3 - Economic development. With some of the highest residential real estate prices in the state and issues with a congested downtown, bicycling is being seen as an attractive amenity in downtown Ann Arbor.

One sign of this investment is Ann Arbor Downtown Development Authority's (DDA) seasonal on-street bicycle corral program, part of a larger effort by the DDA to provide bicycle parking downtown. According to Eli Cooper:

"Businesses see the positive benefits of bicycling infrastructure. We installed the on-street rack at People's Food Coop because we had so many bicyclists there; it was literally becoming a problem. We got rid of a car parking space, and now the racks are full."

The DDA substantially increased its downtown bicycle parking in 2013 with the opening of the Maynard Street Bike House, a 37-space secure bicycle parking facility inside of a popular

⁸ From interviewees and fact checked via <http://www.annarbor.com/news/ann-arbor-to-detroit-rail-could-be-running-by-year-end-officials-say/>

downtown parking garage that allows bicycle commuters to safely store their bicycles while they're at work. Access to the bike house is limited to members that pay a \$75 annual fee, and is controlled by a sliding door that opens with a key card.

The DDA allocated \$30,000 for the bike house, which it sees as a part of a larger talent attraction strategy:

*"There's a lot of new high-tech firms that are locating in that area," said John Mouat, a DDA board member. "We found there's a lot of demand in that cohort of people for bicycling as commuting."*⁹

Stakeholders agreed that bicycling is part of a strategy to attract talented workers and cutting-edge technology firms to locate in the city.

"When Barracuda Systems moved here, they asked for bike parking. When a corporate entity asks for something like that, it makes things happen. The big pushers are the younger tech industries that have bicycling as a part of their business culture. We are hearing from tech companies that bicycling is important from a talent attraction and recruitment perspective. Bicycling is part of making this an attractive place to live. People are looking for a place to live instead of trying to find a job first. That's a reason a business might choose to locate here. Ann Arbor is a model for that – young, innovative people want to live here so we have Google, Barracuda Networks. Biking can help make this a place a magnet." – Norm Cox

6.4 - One-Car Households. Beyond bicycling as a talent attraction tool, Ann Arbor was the only case study community where multiple stakeholders pointed out the bicycle's role in enabling families to go car-free or car-lite. Stakeholders felt this has a major, but hidden, financial impact and keeps living in Ann Arbor an affordable option:

"What may not be reflected in direct conversation is that this community has a number of people with just one car per family. This is a hidden economic value for folks, particularly in a community with some of the highest housing prices in the state, and high taxes. Biking is part of how people can afford to live here." – Eli Cooper

6.5 - Reduced absenteeism. Increased bicycling for transportation or recreation can have benefits for employers. The London School of Economics estimates that active bicyclists in the workplace miss one less day of work per year than non-bicycling workers,¹⁰ and research published in the Journal of Occupational and Environmental Medicine estimates that one work day absent equates to an average of \$341 in lost productivity.¹¹ Using the proportion of active

⁹ Quote taken from "Ann Arbor DDA's 'bike house' in Maynard Parking Structure set to open for Commuter Challenge" by Amy Biolchini, Ann Arbor News <http://www.annarbor.com/news/ann-arbor-ddas-bike-house-in-maynard-parking-structure-set-to-open-for-commuter-challenge/>

¹⁰ The British Cycling Economy Gross Cycling Product Report. London School of Economics

¹¹ The Health and Productivity Cost Burden of the "Top 10" Physical and Mental Health Conditions Affecting Six Large U.S. Employers in 1999, by Dr. Ron Z. Goetzel, et al.

bicyclists¹² in Ann Arbor along with an estimate of the cost of absenteeism per day and the number of workers in Ann Arbor, the study estimated that the total benefits to Ann Arbor due to reduced absenteeism are approximately \$5.7 million.

7- Events and Tourism

In addition to the Commuter Challenge other major bicycling-related events in Ann Arbor include the Mayor’s Green Fair, and the Helluva Ride, a 37-year-old tour put on by the Ann Arbor Bicycle Touring Society that routinely draws more than 1,500 registrants. Wheels in Motion, an Ann Arbor bicycle shop, sponsors “Worst Day of the Year Ride” each January.

Unlike other case study communities, stakeholders interviewed in Ann Arbor didn’t see a big connection for Ann Arbor as a bicycle tourism destination. Many did express excitement about the potential for ArborBike to manage congestion during high traffic events such as University of Michigan football games and other major sporting events on campus.

“On game days, we think bike share will be something people will be excited about. It will give them a way to get from downtown to Michigan Stadium and back without having to get in a car.” – Heather Seyfarth of the Clean Energy Coalition

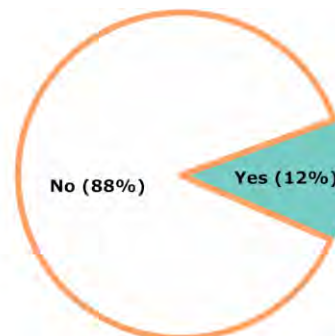
7.1 - Results from the household survey. As shown in Figure 4, about 12 percent of Ann Arbor residents reported participating in a bicycle event or taking a trip related to bicycling during the past year. Those who did report this type of participation typically only participated in a few events.

Figure 4.
Percent of Residents that Participated in a Bicycling Event or Bicycling-Oriented Vacation in Michigan in the Past Year

Source:
BBC Research & Consulting from 2013
Michigan Department of Transportation
Household Survey on Bicycling

n = 204

Have you participated in an organized bicycle event in Michigan (e.g. Bike Ypsi Fall Ride, Tour de Troit) or taken a vacation in Michigan during which bicycling was a key activity (i.e. bicycling-oriented vacation) in the past 12 months?



The study team used information from the household survey to estimate the total spending at events by bicyclists from Ann Arbor. Respondents were asked to estimate their expenses for food, travel and other expenses. Based on this information, the study team estimates that bicyclists in Ann Arbor spend approximately \$3.4 million annually on bicycle-related events and travel.

¹²For the purposes of this study, active cyclists are defined as individuals who reported using their bicycle two or more days a week.

In Phase II of the study, the study team further quantifies the impacts of event and tourism spending on the statewide economy.

8- Community Support and Infrastructure

Ann Arbor prides itself as a bicycle-friendly community.

“There is beyond a generation of policy work in Ann Arbor to support and recognize the bicycle as a means of transportation, not merely a recreational device.” – Eli Cooper

8.1 - Recent Investments. The City has made significant investments in bicycle infrastructure improvements and promoting bicycling opportunities and resources, earning it national recognition:

- In 2010, Ann Arbor was named the 14th most bicycle-friendly city in America by *Bicycling Magazine*.¹³
- The City has been awarded the League of American Bicyclists the Silver-level Bicycle Friendly City Award twice, in 2009 and again in 2013. Ann Arbor, which first earned a Bronze level award in 2005, is currently the highest-ranked Michigan community in LAB’s nationally known program.¹⁴

The City also made substantial infrastructure investments and implemented policies to encourage residents to bicycle more frequently including:

- The City of Ann Arbor has 71.4 lane miles of on-street bicycle lanes, and 57 lane miles of shared use paths. There are over 900 bicycle parking spaces in downtown Ann Arbor, including 431 bicycle hoops, 6 on-street bicycle racks accommodating 16 bicycles each, and 26 secure bicycle lockers.
- Bicycle parking is required in all new developments built in the City of Ann Arbor. The City adopted a Complete Streets resolution in March 2011.¹⁵ The City is one of the few local government entities in Michigan that dedicates more than the required portion of its Act 51 funds for non-motorized transportation projects (state law requires 1%, Ann Arbor dedicates 5%).
- Planning for bicycle facilities has been a regular part of the City’s transportation planning process. In 1992, Ann Arbor was among the first cities to create a comprehensive bicycle master plan. Bicycling has since been addressed through various City programs and policy, including the 2013 Non-motorized Transportation Plan Update, the 2009 Comprehensive Transportation Plan Update, the 2007 Non-motorized Transportation Plan, and the coordinated efforts of the City’s Alternative Transportation Committee (ATC).

¹³ *Bicycling Magazine*, accessed at: http://www.bicycling.com/news/advocacy/14-ann-arbor-mi?quicktabs_3=2

¹⁴ <http://www.a2gov.org/news/Pages/Bicycle-Friendly-Community-Award-2013.aspx>

¹⁵ <http://michigancompletestreets.wordpress.com/2011/03/12/ann-arbor-we%E2%80%99re-for-complete-streets/>

- City employees are not offered formal tax incentives to bicycle to work, but some encouragement programming is in place. For example, employees do have access to a locker room and shower, as well as covered bicycle racks in the City Hall parking garage, and access to a Dero Fix-It station outside of City Hall.

Norm Cox commented on how the City's commitment to bicycling has had an impact over time:

"The City has made a noticeable investment in infrastructure, and that is an endorsement of bicycling. It says, 'We see you, we support you, and you are a valid mode of transportation.' The importance of that can't be underplayed. Even if people aren't using some of these facilities the way we'd want them to, this makes it more mainstream."

Perhaps the clearest sign of the growth in bicycling in Ann Arbor is the status of its bicycle share program, ArborBike, set to launch in the spring of 2014. The 14-station, 125-bicycle sharing system is designed to help visitors, residents, students and commuters get around downtown and the north and main campuses of the University of Michigan.

ArborBike is funded largely through \$600,000 of federal grant money from Congestion Mitigation and Air Quality (CMAQ) through the Ann Arbor Area Transportation Authority, \$150,000 in local match funding from the city, and \$600,000 in operational funding contributions from the University of Michigan over the next three years.

Ann Arbor's system will use B-Cycle equipment, the vendor used in other major programs across the United States, including Madison and Denver.¹⁶ The cost to use the bike share system will be similar that in other communities, with membership fees of \$60 per year, \$20 per week, or day passes for \$5.

8.2 - Value of bicycle infrastructure. Residents in Ann Arbor also report substantial value from the availability of quality bicycle infrastructure. The study team also quantified the value placed on bicycle-specific infrastructure such as bicycle lanes, cycle-tracks and shared-use pathways. As shown in Figure 5, about half of respondents placed an annual value of accessing bicycle infrastructure at over \$100. Six percent of respondents even placed an annual value of over \$5,000 on the ability to use bicycle infrastructure.¹⁷

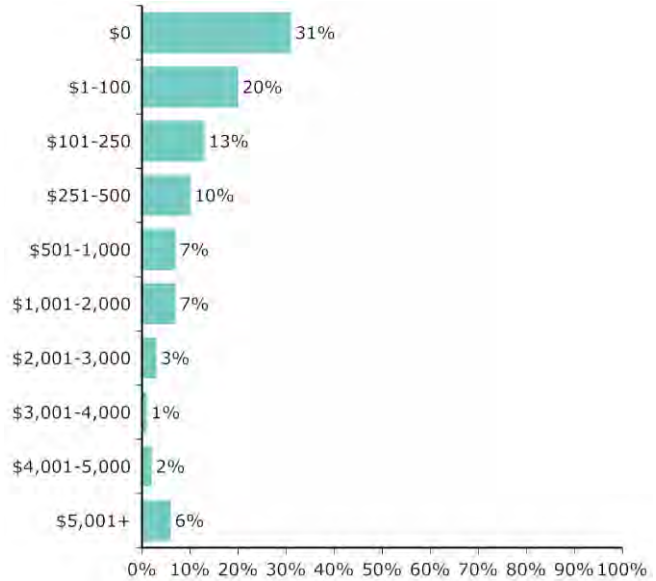
¹⁶ <https://www.bicycle.com/>

¹⁷ It is important to note that while respondents reported a high value for a network of bicycling infrastructure, this does not suggest that Ann Arbor should implement taxes or fees for residents to access this infrastructure. Bicycle registration and fee collection have been considered by a few jurisdictions in the past decade and have not been implemented or have been repealed for a variety of reasons (Ottawa: <http://www.ottawasun.com/2012/01/13/staff-to-council-no-bicycle-licences>; San Diego: <http://calbike.org/san-diego-repeals-bicycle-license-law/>; Minneapolis and Minnesota: <http://www.dot.state.mn.us/bike/other.html>, Long Beach: <http://latimesblogs.latimes.com/lanow/2011/02/long-beach-eliminates-bike-registration-law-that-dealt-steep-fines.html>). In 2010, Ann Arbor repealed its bicycle registration program. (*To Do: Bicycle Registry, Transit Station – Other Ann Arbor city council loose ends: Google Fiber*. Dave Askins. The Ann Arbor Chronicle. March 3, 2010. Accessed at <http://annarborchronicle.com/2010/03/03/to-do-bicycle-registry-transit-station/>).

**Figure 5.
Annual Value of Bicycling
Infrastructure**

Source:
BBC Research & Consulting from 2013 Michigan
Department of Transportation Household Survey
on Bicycling

n = 205



A few studies have attempted to quantify the impact of installing specific infrastructure elements (such as a protected bicycle lane or cycle-track). One of the more comprehensive studies, conducted by the New York City Department of Transportation, showed that protected bicycle lanes increased retail sales by locally-based businesses by 49 percent.¹⁸ Further research is needed to verify if these findings hold for non-protected bicycle infrastructure and in communities like Ann Arbor.

9- Background on Bicycling in Ann Arbor

The household survey and stakeholder interviews also provided information on the nature of bicycling in Ann Arbor including:

- Overall ridership;
- An overview of recreational riding;
- Barriers to increased bicycling; and
- The importance of the promotion and encouragement of bicycling in Ann Arbor.

¹⁸ *Measuring the Street: New Metrics for 21st Century Streets*. New York City DOT.

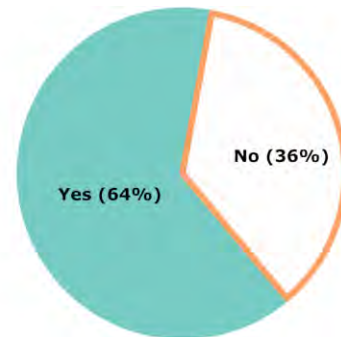
9.1 - Overall ridership. As shown in Figure 6, about two-thirds of the adult residents of Ann Arbor reported riding a bicycle in the past year. Those respondents who report having ridden a bicycle in the past 12 months are considered “bicyclists” in the analysis of this report.

**Figure 6.
Residents Who Have Ridden in
the Past Year**

Source:
BBC Research & Consulting from 2013 Michigan
Department of Transportation Household Survey
on Bicycling

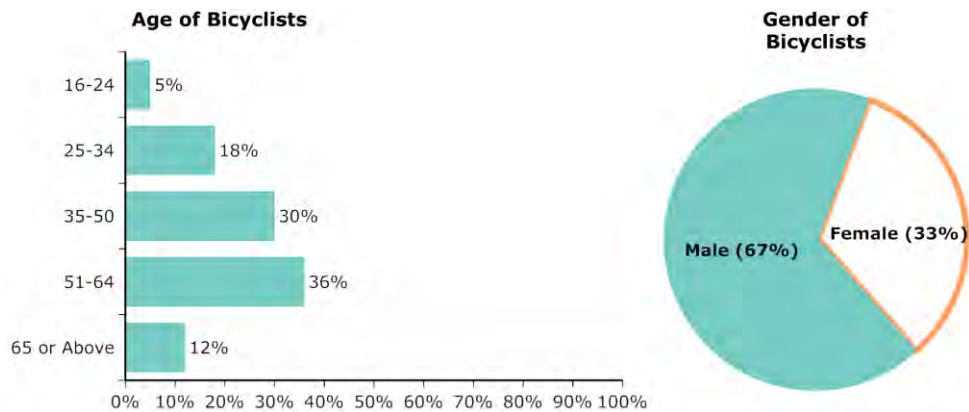
n = 204

**Have you personally
ridden a bicycle for any
reason in the past year?**



9.1.1 - Demographics. The household survey provides demographic information about residents who reported riding in the last year. As seen in Figure 7, approximately 67 percent of cyclists in Ann Arbor were male and more than 75 percent were age 35 and older.

**Figure 7.
Age and Gender of Bicyclists**



Source: BBC Research & Consulting from 2013 Michigan Department of Transportation Household Survey on Bicycling

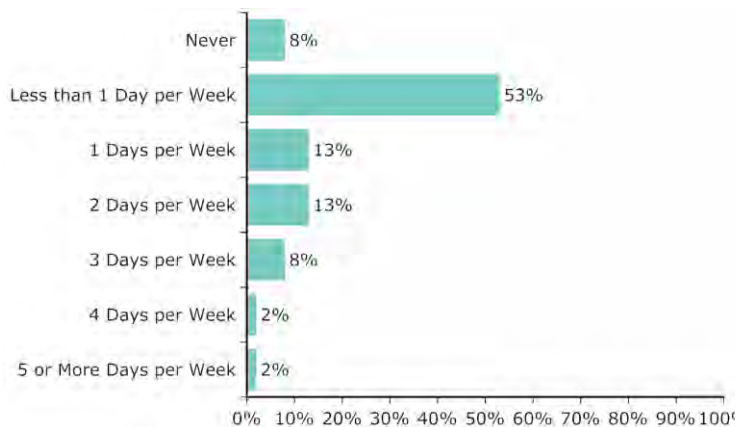
n = 132; 129

9.2 - Recreational Riding. Among residents who have ridden a bicycle in the past year, about half reported bicycling recreationally some but less than once per week, while about 38 percent report riding their bicycle for recreation at least two days per week. This distribution of the frequency of recreational bicycling is shown in Figure 8.

Figure 8.
Average Frequency of Recreational Bicycling among cyclists

Source:
BBC Research & Consulting from 2013 Michigan Department of Transportation Household Survey on Bicycling

n = 132

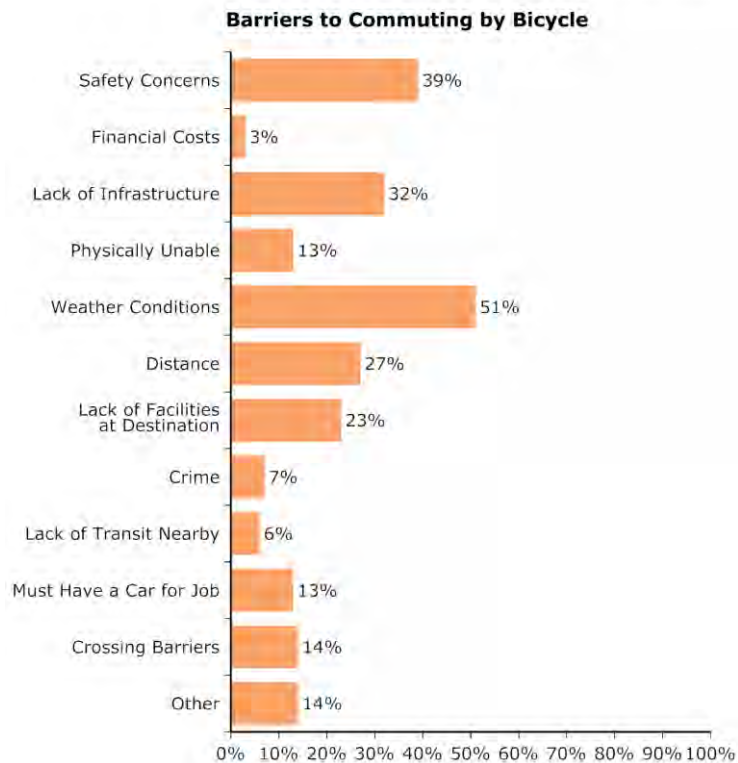
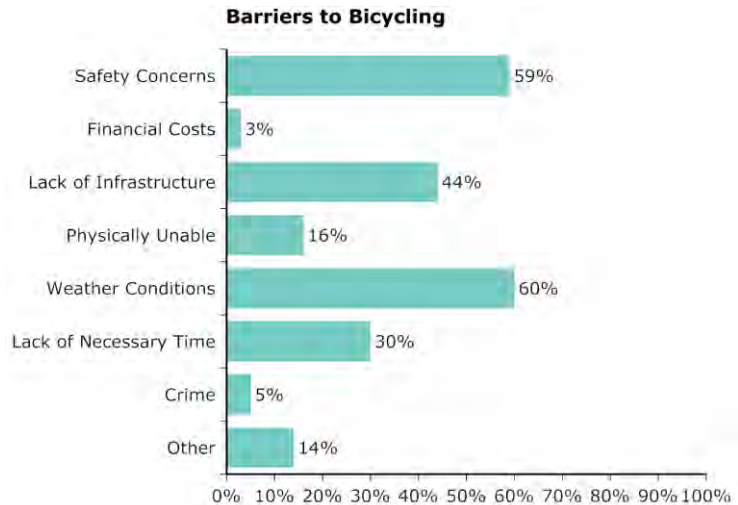


9.3 - Barriers to increased bicycling. In the household survey, residents were asked about barriers to riding more overall as well as barriers specific to commuting by bicycle. Respondents were able to cite multiple barriers rather than indicating only the largest barrier. Addressing and mitigating the most commonly stated barriers to bicycling is an effective approach to increasing ridership. The most frequently cited barriers to increased bicycling in Ann Arbor were weather conditions (60%) and safety concerns (59%).

Figure 9.
Barriers to Bicycling and
Commuting

Source:
 BBC Research & Consulting from 2013 Michigan
 Department of Transportation Household Survey
 on Bicycling

n = 207



When asked about barriers to commuting specifically, 51 percent reported that weather conditions were a barrier, followed by safety concerns (39%). The next highest barriers to commuting were lack of infrastructure (32%) and distance (27%).

9.4 – Promotion and encouragement. The primary advocacy group in Ann Arbor is the Washtenaw Biking and Walking Coalition (WBWC).

“The Washtenaw Bicycling and Walking Coalition is working to improve bicycling and walking infrastructure and policies and increase community support through advocacy and education.” – Erica Briggs Whitacre, WBWC

The coalition works on a variety of initiatives to make communities in Washtenaw County better places to bicycle and walk, and publishes a map each year that identifies priorities for key sites and corridors that need infrastructure and safety improvements.

The WBWC has successfully recruited a number of local businesses to offer discounts to members and supporters, but do not have specific data on the impacts of these discounts on attracting customers. Over a dozen bicycle and recreation-oriented retail outlets offer the WBWC discounts.

Bicycling in ANN ARBOR

Population: 114,725

Miles of existing infrastructure: 71

"People live in a place like Ann Arbor because it's bike-friendly." - Erica Briggs-Whitacre, Washtenaw Biking and Walking Coalition



Bicycling retail revenue

\$3.0 million

50%

Residents who place an annual value of at least \$100 on the ability to use bicycle infrastructure

Total annual spending associated with bicycling events and vacations in Michigan

\$3.4 million

42%

Bicyclists who bike at least twice a week

People employed by bicycling industry: 39



25%

Bicyclists who commute by bicycle at least twice a week

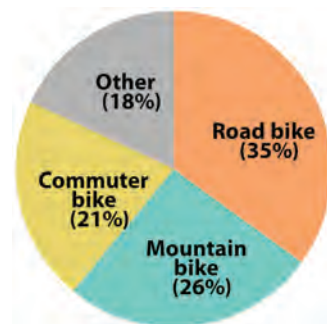
12%

Residents who participated in a bicycling event or bicycle-oriented vacation in Michigan in the past year

Key barriers to bicycling



Top primary bicycle types



Total annual economic impact of bicycling **\$25.4 million**

Study funded by MDOT

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

This infographic provides a one-page summary of bicycling within Ann Arbor based on information gathered by BBC Research & Consulting and R. Neuner Consulting for the Michigan Department of Transportation (MDOT) as part of the first phase of a two-phase study on the economic benefits of bicycling in Michigan. The infographic is accompanied by a case study report on Ann Arbor as well as a report providing information on the state of Michigan and the data sources and methodology used for the study. A household survey was conducted with residents in Ann Arbor, which gathered the following information shown on the infographic:

- Annual spending associated with bicycling events and vacations;
- Key barriers to bicycling;
- Percent of residents who place an annual value of at least \$100 on the ability to use bicycle infrastructure;
- Percent of bicyclists who bike at least twice a week;
- Percent of bicyclists who commute by bicycle at least twice a week;
- Percent of residents who participated in a bicycling event in Michigan in the past year; and
- Primary types of bicycles used by residents.

Below is a description of the data source for other data on the infographic:

- Population – provided by the U.S. Census Bureau 2012 American Community Survey;
- Miles of existing infrastructure – gathered from interviews with local officials during the case study process;
- Bicycle Friendly CommunitySM Rating – a rating based on a number of metrics related to bicycling support and participation from the League of American Bicyclists;
- Bicycling retail revenue – based on the three-year average annual revenue of bicycle retailers in the City of Ann Arbor reported in Dun & Bradstreet;
- People employed by bicycling industry – based on the three year annual employment averages for retail bicycle shops and bicycle manufactures located in Ann Arbor as reported in Dun & Bradstreet;
- Total annual impact of bicycling – calculated from the following components:
 - Total household retail spending on bicycling reported by Ann Arbor residents in the household survey (\$9.1 million);
 - The total household spending on bicycle events and vacations as reported by Ann Arbor residents in the household survey (\$3.4 million);
 - The average three-year annual revenues of bicycle-related manufactures in Ann Arbor as reported in Dun & Bradstreet (\$0);
 - The avoided costs due to physical activity from bicycling based on (\$7.2 million):
 - The statewide rates of hospitalization for stroke and heart disease from the United States Centers for Disease Control;
 - The proportion of heart disease and stroke due to physical inactivity from the World Health Organization;
 - The proportion of residents who are physical active using their bicycle from the household survey; and
 - The average cost of hospitalization for stroke and heart disease from the Michigan Department of Community Health.
 - The avoided costs of absenteeism for Ann Arbor employees due to bicycling based on (\$5.7 million):
 - The proportion of residents who are physical active using their bicycle from the household survey;
 - The cost of absenteeism per day from the Journal of Occupational and Environmental Medicine;¹ and
 - The number of days per year of avoided absenteeism due to cycling from the London School of Economics.²

¹ The Health and Productivity Cost Burden of the “Top 10” Physical and Mental Health Conditions Affecting Six Large U.S. Employers in 1999, by Dr. Ron Z. Goetzel, et al.

² The British Cycling Economy Gross Cycling Product Report. London School of Economics