Scioto Analysis
Economics | Public Policy

Economic and Health Impacts of Bicycling and Trails in Iowa

January 2025

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Executive Summary

Iowa is home to over 2,000 miles of multi-use trails. Each year, an estimated 900,000 Iowans ride their bicycles, 350,000 of whom ride at least twice a month. Understanding the importance of this industry on Iowa's economy and health is important for policymakers responsible for funding the construction and maintenance of bicycling infrastructure in Iowa.

We estimate Iowa's cycling and trail use are responsible for **$1.4 billion** to gross state product per year. If spending associated with cycling and trail use were its own industry, it would represent a top 50 industry in the state of Iowa. The bulk of this output accrues to the **retail trade** and **food service** industries.

Bicyclists and trail users in Iowa also support jobs thanks to their spending. We estimate that over **21,000 jobs** are supported by the spending of Iowa's recreational riders, largely in the retail trade industry.

The jobs supported by the bicycle industry provide earnings for Iowans and increased tax revenue for the state. We estimate that Iowa's riders generate **$690 million in wages** for workers across the state, which lead to **$23 million per year** in state income taxes **and $11 million per year** in state sales taxes**.**

Bicycle clubs and organizations in Iowa are a driver of **volunteerism** and **social capital development** in the state. We estimate volunteers contributed a quarter of a million volunteer hours a year**, which have a monetized value of about $7.1 million.**

Cycling and trail use also result in better health outcomes for Iowans. We estimate that the current level of cycling in Iowa results in nearly **9,000 fewer people being overweight or obese,** as well as **1,200 fewer cases of high blood pressure**, **250 fewer strokes**, **170 fewer cases of breast cancer,** and **100 fewer cases of colorectal cancer** every year**.** Exercise has also been linked to improved mental health, and we estimate that cycling results in **5,400 fewer Iowans experiencing poor mental health** every year.

Additionally, people who commute to work via bicycle help reduce carbon emissions in Iowa by avoiding driving to work. These commuters are responsible for preventing between **1,000 and 1,500 tons of carbon emissions** each year.

Introduction

Over 100 million Americans rode a bicycle in the past year, making it one of the most popular recreational activities in the country.[1,2] In 2022, Midwesterners took 370 million trips by bicycle.[3] Bicycling is one of the most popular outdoor recreation activities in Iowa. According to the Iowa Natural Heritage Foundation, the state is home to over 2,000 miles of multiuse trails.[4] Iowa is also home to high visibility events such as RAGBRAI (Register's Annual Great Bicycle Ride Across Iowa), the largest, oldest bike touring event in the world.

The Economic Contribution of Bicycling and Trails

Past reports have found evidence of the economic impact of bicycling in Iowa and beyond. The Des Moines Register reports RAGBRAI contributes millions of dollars to Iowa's economy every year.[5] A recent review of the literature on bicycle and pedestrian infrastructure concluded studies that found a significant relationship between infrastructure and nearby retail and food service businesses tend to show positive results.[6]

Bicycle sales are also a growing industry in the United States. Even after the drop-off in sales after the pandemic surge, retailers still sold $4.1 billion worth of bicycles in 2023.[7]

In 2012, the Iowa Bicycle Coalition published a study conducted by researchers from the University of Northern Iowa that explored the economic and health impacts of bicycling in Iowa.[8] The study estimated the economic and health impacts of Iowa's commuters, recreational riders, bicycle retail establishments, and bicycle organizations.

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[1] People for Bikes, "2018 U.S. Bicycling Participation Report," Accessed January 8, 2025, https://www.peopleforbikes.org/take-action/download-the-u-s-bicycling-participation-report
[2] United States Bureau of the Census, "S0101: Age and Sex," Accessed January 8, 2025, https://data.census.gov/table/ACSST1Y2023.S0101?q=population%20by%20age
[3] United States Federal Highway Administration, "National Household Travel Survey," Accessed January 8, 2025, https://nhts.ornl.gov/
[4] Iowa Natural Heritage Foundation, "Iowa Trails FAQ," Accessed January 8, 2025, https://www.inhf.org/what-we-do/trails/iowa-trails-faq/
[5] O'Leary, Josh, "RAGBRAI means millions for local economy," July 9, 2015, Accessed January 8, 2025, https://www.press-citizen.com/story/news/local/2015/07/09/ragbrai-local-economy-millions-dollars/29940147/
[6] Volker, Jamey MB, and Susan Handy. "Economic impacts on local businesses of investments in bicycle and pedestrian infrastructure: a review of the evidence." Transport reviews 41, no. 4 (2021): 401-431.
[7] Anderson, Mae, "Bike shops boomed early in the pandemic. It's been a bumpy ride for most ever since," May 29, 2024, Accessed January 9, 2025, https://apnews.com/article/small-business-bicycle-shops-gravel-ebike-663c22963d9cec7973e2ab0a24b340a9
[8] Brian Bowles, Kristine Fleming, Kasee Fuller, Jordan Lankford, and Josh Printz, "Economic and Health Benefits of Bicycling in Iowa," University of Northern Iowa, 2012. Available Online: https://www.iowabicyclecoalition.org/wp-content/uploads/2012/04/2012-Economic-Impact-Study.pdf

Bicycling is also a remedy to one of the largest public health problems in the United States: inactivity. An estimated $117 billion in annual U.S. health care costs are associated with inadequate physical activity.[9] A total of 26% of Iowans report having no physical activity or exercise outside of work in the past 30 days.[10] Lack of physical activity can lead to conditions such as breast cancer, diabetes, heart disease, and premature death.[11]

How Iowa Stacks Up

In 2024, Iowa was ranked 24th among U.S. states in the League of American Bicyclists's Bicycle Friendly State Rankings.[12] Iowa's ranking on this list has risen since a 2017 nadir of 30th in the country but is down significantly from its ranking of 6th reported in the 2011 study on the economic and health impacts of bicycling in Iowa.[13]

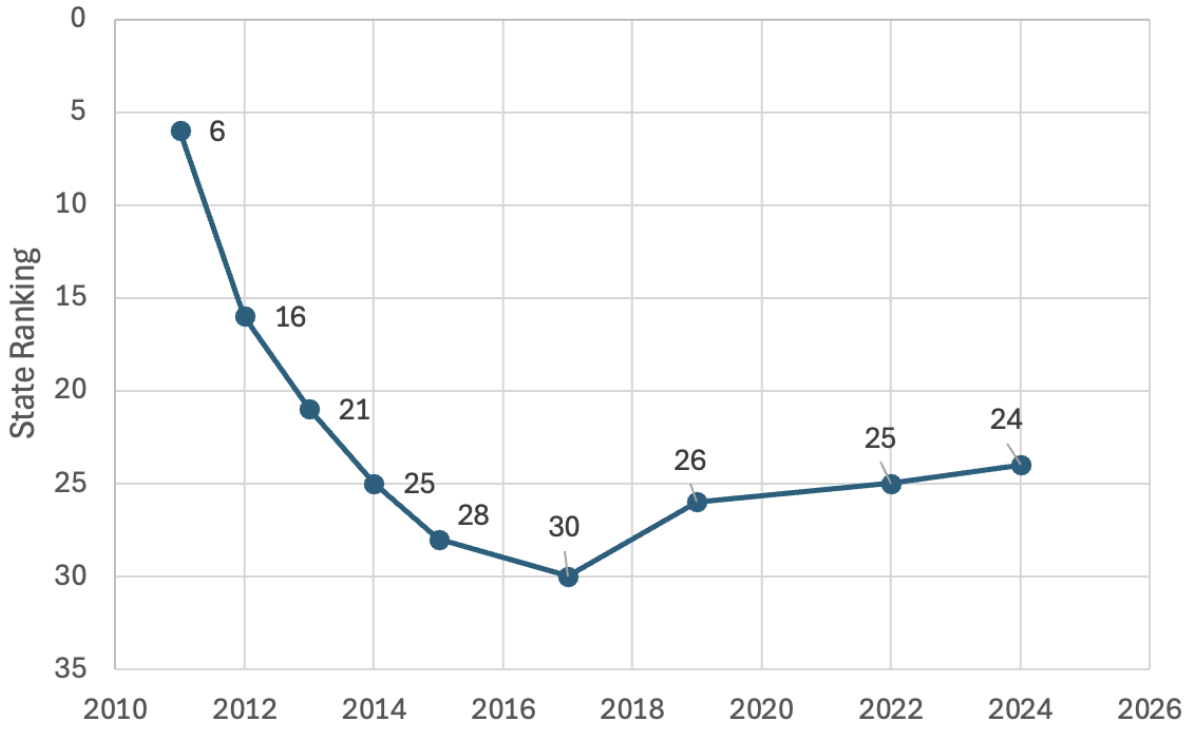

Figure 1: Iowa's ranking in bicycle friendliness up from 2017, down from 2011

[9] Carlson, Susan A., Janet E. Fulton, Michael Pratt, Zhou Yang, and E. Kathleen Adams. "Inadequate physical activity and health care expenditures in the United States." Progress in cardiovascular diseases 57, no. 4 (2015): 315-323.
[10] America's Health Rankings, "Physical Inactivity in Iowa," 2025, Accessed January 9, 2025, https://www.americashealthrankings.org/explore/measures/Sedentary/IA
[11] Centers for Disease Control and Prevention, "About Physical Activity," December 20, 2023, Accessed January 9, 2025, https://www.cdc.gov/physical-activity/php/about/index.html
[12] The League of American Bicyclists, "State Ranking and Report Cards," Accessed January 9, 2025, https://bikeleague.org/bfa/states/state-report-cards/
[13] Iowa Bicycle Coalition, "Economic and Health Impacts of Bicycling in Iowa," Fall 2011, Accessed January 9, 2025, https://www.iowabicyclecoalition.org/wp-content/uploads/2012/04/2012-Economic-Impact-Study.pdf

The 2024 rankings placed Iowa in the top 5 states in the country for funding, spending, and infrastructure. It was ranked in the bottom ten states for safety and laws. This could be a lost opportunity since comprehensive approaches to making streets safer and more attractive to cyclists has shown safety and economic benefits.[14]

Purpose of this Study

The purpose of this study is to estimate the economic and health impacts of bicycling in Iowa. Economic impact is measured based on spending by cyclists associated with bicycling activity, retail sales, spending by bicycle organizations, local government spending on cycling infrastructure, tourism, and health savings in Iowa. The study is based on survey data collected from individual cyclists, bicycle specific retail operators, bicycle and trail organizations, and local government officials, and the general population through sources such as the American Community Survey conducted by the United States Census Bureau, the Behavioral Risk Factor Surveillance Survey conducted by the Centers for Disease Control and Prevention, and the People for Bikes Bicycling Participation Report.

Survey Results

We surveyed 2,563 people from Iowa to collect data on the current economic activity that occurs as a result of their participation in bicycling and their use of trails. Additionally, we surveyed 199 people from outside of Iowa who had recently traveled to the state for the purpose of bicycling or trail use.

Survey respondents included people who rode bikes or used trails in the past year, representatives of bicycling related businesses, representatives of clubs whose members bike or use trails and trail associations, and local government officials.

We collected data from 94 of Iowa's 99 counties, with 52% of Iowa respondents coming from five counties:

1. Polk County: 617 respondents
2. Johnson County: 171 respondents
3. Black Hawk County: 171 respondents
4. Linn County: 169 respondents
5. Dallas County: 135 respondents

[14] Anderson, Geoff, Laura Searfoss, Alex Cox, Elizabeth Schilling, Stepanie Seskin, and Chris Zimmerman. "Safer streets, stronger economies: complete streets project outcomes from across the United States." Institute of Transportation Engineers. ITE Journal 85, no. 6 (2015): 29.

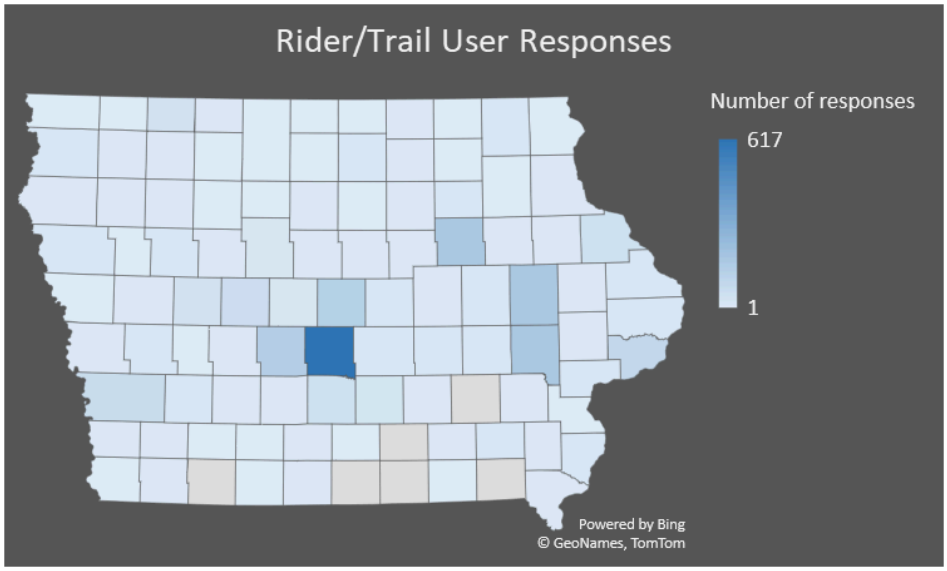

Figure 2: Most survey respondents live in Iowa's most populous counties

Economic Impact

Spending patterns reported by individual cyclists were used to calculate the economic impact of spending by commuters and recreational riders in Iowa using the Bureau of Economic Analysis's RIMS II model.

To estimate the economic impact of cycling in Iowa, we collected survey data from commuter cyclists, recreational cyclists, bicycle retail establishments, bicycle organizations, and local government agencies across the state. We used the RIMS II model from the Bureau of Economic Analysis to estimate the economic effects of rider expenditures, retail sales, bicycle organization expenditures, tourism spending, and local government spending in Iowa. We used secondary sources to estimate the prevalence of spending and survey data to estimate average spending amounts. We used these data sources to estimate the gross state product value of economic transactions, the total jobs supported, and the earnings generated by bicycling and trails in Iowa.

Commuting

We estimate the total economic impact of commuter cyclists based on the total number of commuter cyclists in Iowa reported in the U.S. Census Bureau's American Community Survey. We combined this with survey data on individual spending levels to estimate total spending in the state.

The American Community Survey estimates about 0.3%, or 4,800 Iowa residents are regular bicycle commuters.[15] Of these residents, about 1,900 are in the Cedar Rapids-Iowa City region, 1,400 are in the Des Moines-Ames region, and less than 100 are in Pottawattamie County. While nearly half of the statewide population is concentrated in these three regions, 30% of bicycle commuters in Iowa live outside of these three regions.

High rates of bicycle commuting in Cedar Rapids-Iowa City and Des Moines-Ames are driven by higher-population counties and counties with large state universities. Johnson County, home to the University of Iowa, has a bicycle commuting rate six times the statewide average. Story County, home to Iowa State University, has a bicycle commuting rate four times the statewide average.

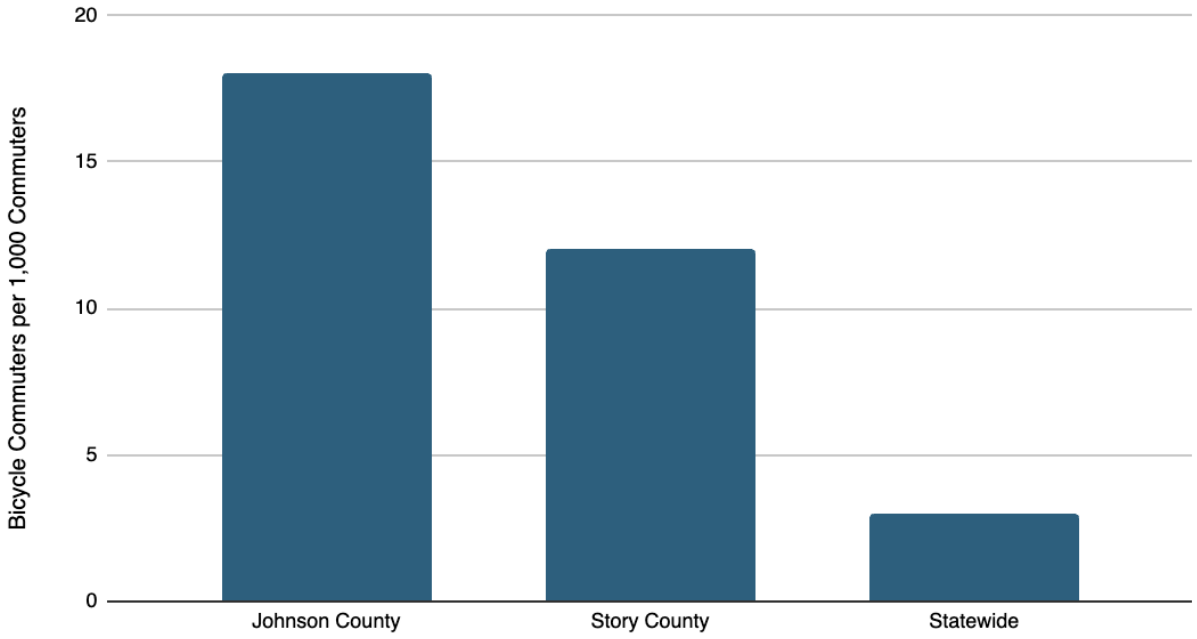

Figure 3: Commuting by bicycle is much more common in Johnson and Story Counties than in the state as a whole

In our survey, 54% of the commuter respondents came from three counties: Polk, Johnson, and Black Hawk. These counties contain the cities of Des Moines, Iowa City, Cedar Falls, and Waterloo.

[15] US Census Bureau, “S0801: Commuting Characteristics by Sex,” American Community Survey, Accessed October 11, 2024, https://data.census.gov/table/ACSST5Y2022.S0801?q=iowa%20commuting

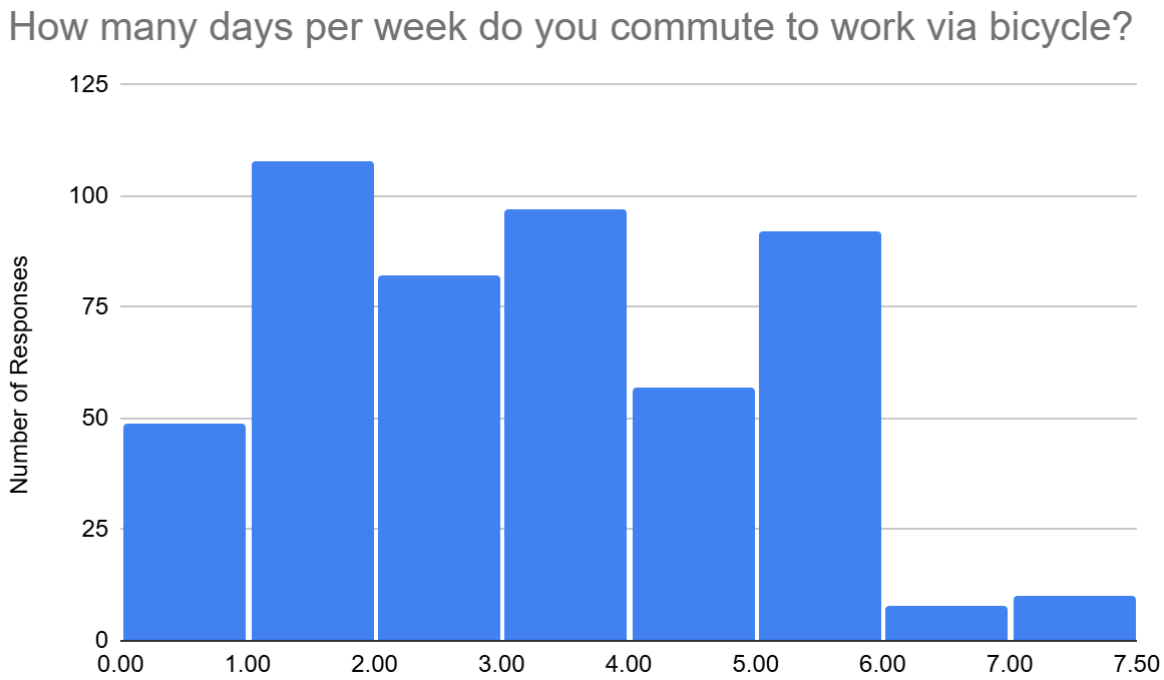

Figure 4: Most bicycle commuters also commute using other modes

Survey respondents reported that they commuted to work by bicycle an average of 2.7 days per week. Only 22% of respondents reported commuting by bicycle at least 5 days per week. Over 47% of respondents reported commuting by bicycle less than 3 days each week. A total of 29% report being unsatisfied or very unsatisfied with their local bicycle infrastructure.

Among respondents who did not commute, the most common given reason was that people don't have to commute for work (27%). This percentage has likely risen dramatically since the COVID-19 pandemic, as the percentage of workers in Iowa working from home increased by about 80% from 2019 to 2023.[16]

Commuter spending was spread across a variety of categories in our survey. The mean commuter in our survey spent about $4,700 on bicycle commuting in the past year. The median cost was $1,100. This means half the commuters in our survey spent more than $1,100 due to bicycle commuting the past year. The mean spending was highest for buying and renting a bike, while the median spending was highest for restaurant and bar spending.

[16] United States Census Bureau, "S0801: Commuting Characteristics by Sex," Accessed January 9, 2025, https://data.census.gov/table/ACSST1Y2019.S0801?q=commute%20iowa

Spending Category	Mean Spending	Median Spending
Buying or Renting a Bike	$1,234.88	$0.00
Transportation/Gas	$862.62	$100.00
Restaurant & Bar	$710.21	$300.00
Shopping	$608.14	$250.00
Grocery, Food, and Drink	$476.94	$200.00
Repair/Maintenance	$307.82	$200.00
Lodging	$249.62	$0.00
Event Admissions/Entertainment	$243.96	$75.00
Total	**$4,694.19**	**$1,125.00**

Table 1: Average spending on bicycle commuting

Overall, 91% of the commuters in our survey spent less on their bicycle than the average sedan driver spends on their car according to AAA.[17] The average bicycle commuter in our survey spent about $5,000 less on bicycle commuting than the average sedan commuter spent on car ownership in 2024.

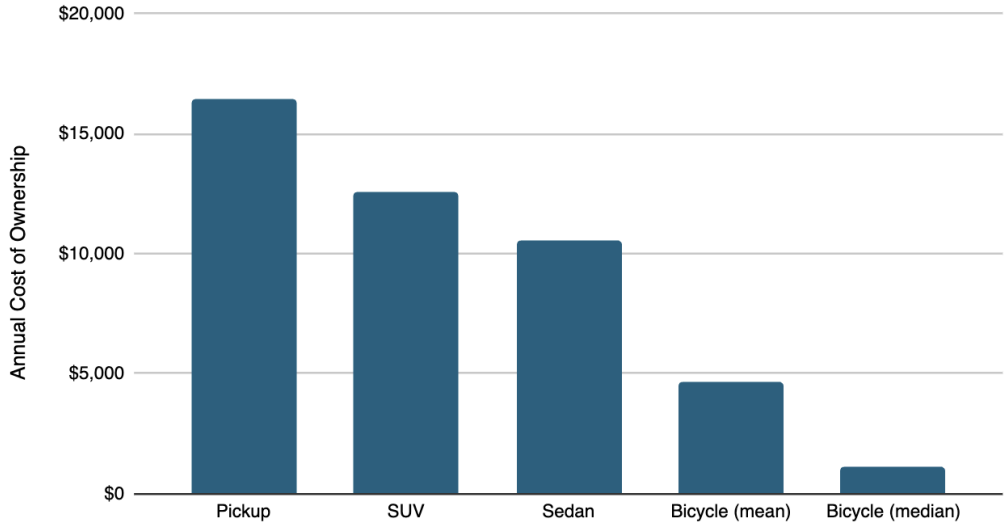

Figure 5: Bicycle commuters face a lower price of commuting compared to automobile commuters

[17] Moye, Brittany, "AAA Your Driving Costs: The Price of New Car Ownership Continues to Climb," AAA Newsroom, September 5, 2024, Accessed October 11, 2024, https://newsroom.aaa.com/2024/09/aaa-your-driving-costs-the-price-of-new-car-ownership-continues-to-climb/

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual economic impact of bicycle commuting to be $23 million. The largest impact is on the state retail trade industry, which received an annual economic impact of about $10 million due to bicycle commuting in the state. Figure 6 shows the impacts broken down by industry for bicycle commuting.

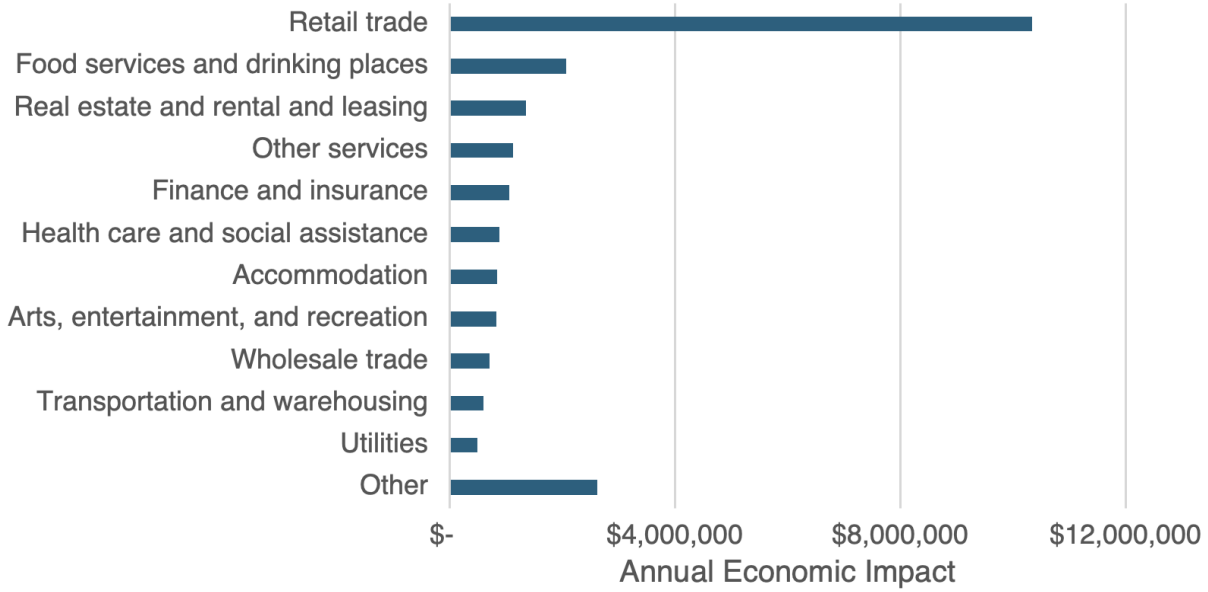

Figure 6: Annual economic impact of statewide bicycle commuting by industry

Iowa's retail trade industry benefits the most from bicycle commuting, enjoying $10 million in economic impact due to commuting, nearly half the total economic impact of commuting across the state. We also estimate bicycle commuters in Iowa generate over $2 million in economic impact for food services and drinking places and over $1 million in economic impact each for the real estate and rental and leasing industry, other service industries, and finance and insurance industries.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate bicycle commuting in Iowa supports about 350 jobs across the state every year. Half the jobs supported are in the retail trade industry, which bicycle commuting supports about 170 jobs for. Figure 7 shows the employment impact of bicycle commuting across Iowa broken down by industry.

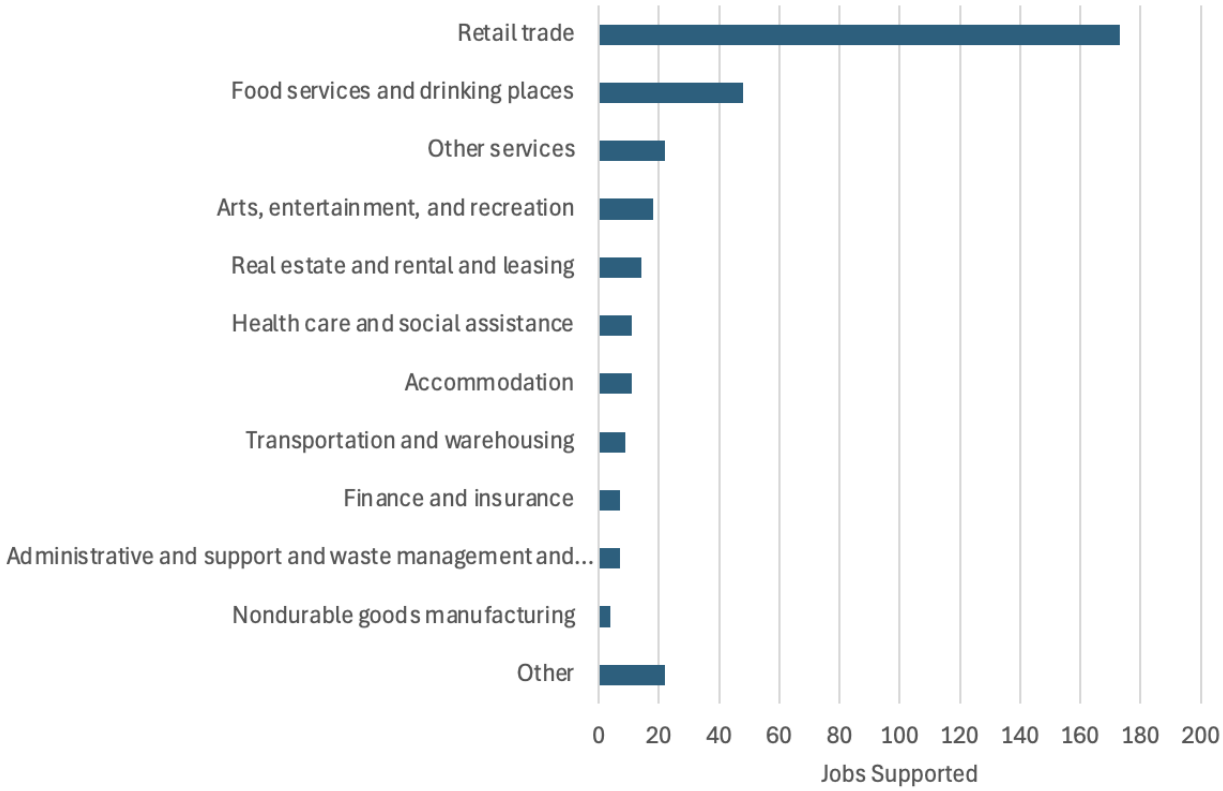

Figure 7: Annual employment impact of statewide bicycle commuting by industry

The statewide retail industry enjoys the largest employment impact, making up half the jobs supported by bicycle commuting. We estimate the food services and drinking places industry also has about 50 jobs supported every year due to bicycle commuting and over 20 jobs in the other services industry are also supported by bicycle commuting.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual earnings generated by bicycle commuting to be about $11 million. The largest impact is on workers in the retail trade industry, who earn $4.9 million due to bicycle commuting in the state. Figure 8 shows the annual earnings generated by bicycle commuters broken down by industry

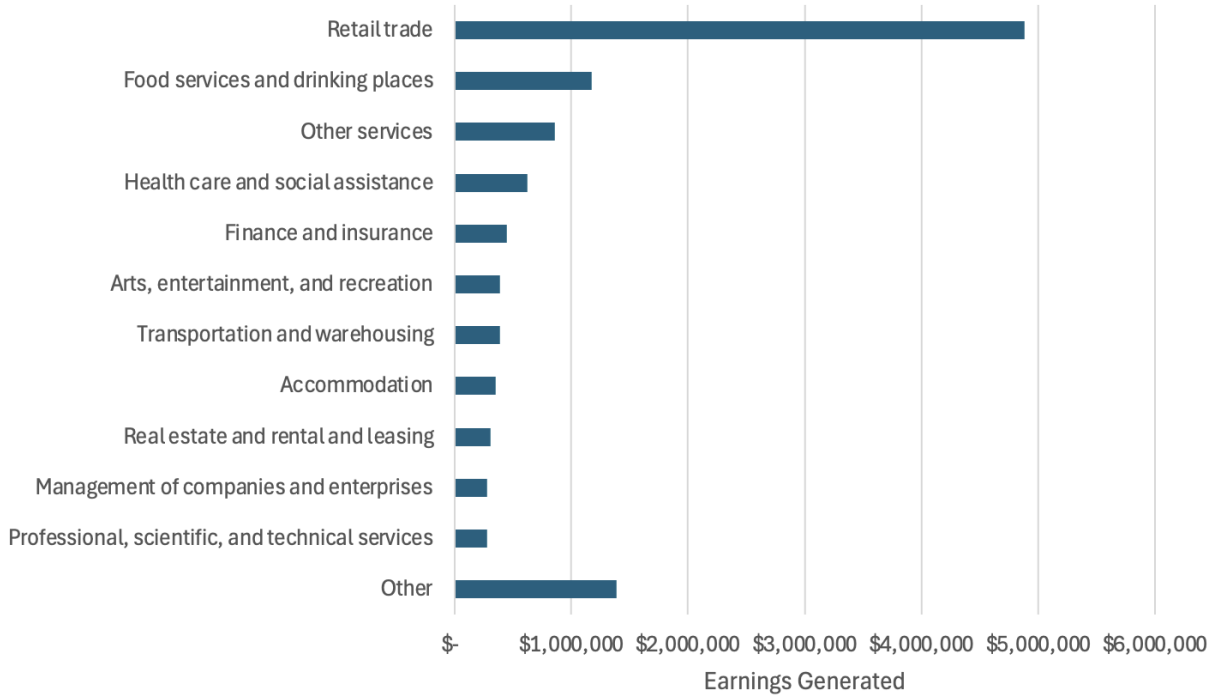

Figure 8: Annual earnings impact of statewide bicycle commuting by industry

Workers in the retail trade sector enjoy the most earnings, enjoying 43% of the total annual earnings generated by bicycle commuting. Workers in the food services and drinking places industry also earn $1.2 million per year due to economic activity generated by bicycle commuters.

We also estimate bicycle commuting across the state generates about $380,000 per year in state income taxes and $180,000 per year in state sales taxes.

Recreational Riding

One benefit of bicycling is that bicyclists tend to go on recreational outings more often than participants in nearly every other outdoor activity. The Outdoor Industry Association reports that the average bicyclist bikes 44 times in a year, higher than any other outdoor activity besides running and jogging.[18] This makes bicycling a habitual activity done often by participants.

[18] Outdoor Industry Association, "2023 Outdoor Participation Trends Report," Accessed October 22, 2024, https://www.outdoorsmen.com/images/2023_OIA_Participation_Report.pdf

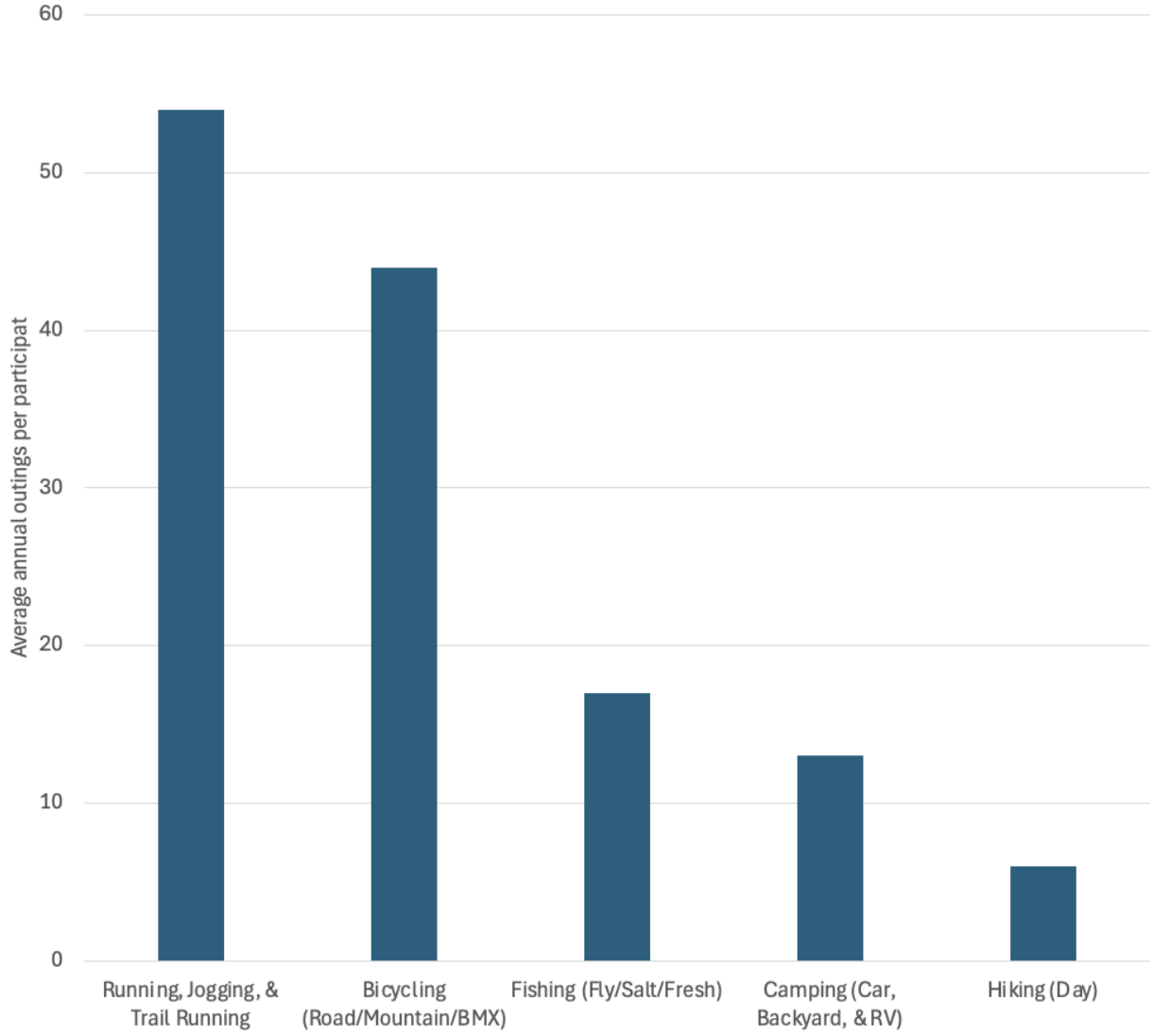

Figure 9: Bicycling only second to running and jogging for frequency of activity by participant

In our survey, there is a statistically significant relationship among recreational riders between how often survey respondents reported riding on bike infrastructure and how safe they felt when riding their bike.

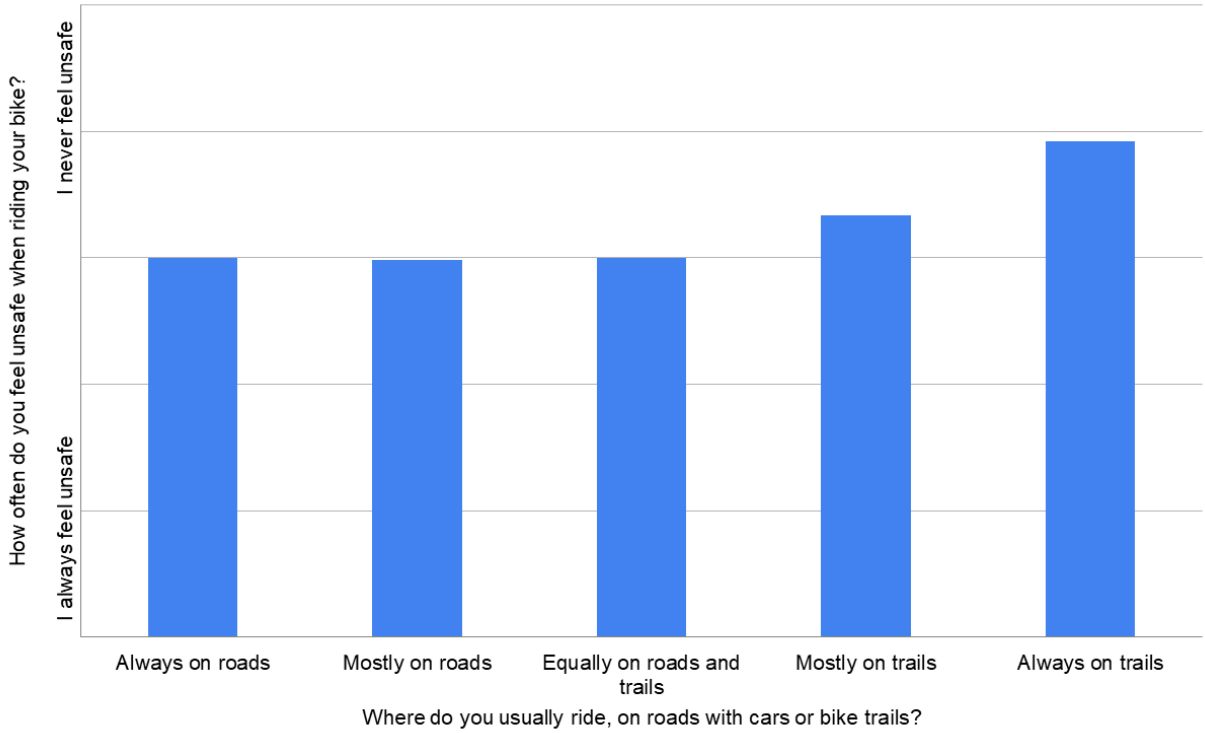

Figure 10: Survey respondents who ride on roads feel less safe than those who ride on trails[19]

Better infrastructure and support for cycling can not only make people feel more safe, it can be an economic driver for local businesses.[20]

To estimate per-cyclist economic impact of recreational bicycling in Iowa, we trifurcate the recreational biking population into three categories: occasional riders (those who reporting riding less frequently than twice a month), moderate riders (those who report riding at least twice a month but less than twice a week), and committed riders (those who report riding at least twice a week).

Committed recreational riders in our survey report spending more than moderate and occasional recreational riders, on average reporting spending four times as much as occasional riders.

[19] These questions were asked on a five-point likert scale, with a response of “1” corresponding to “I always feel unsafe” and a response of “5” corresponding to “I never feel unsafe.”
[20] Buehler, Ralph, and Andrea Hamre. "Business and bikeshare user perceptions of the economic benefits of capital bikeshare." Transportation Research Record 2520, no. 1 (2015): 100-111.

Type of Recreational Rider	Mean Spending	Median Spending
Committed (More than 10 rides per month)	$3,872.01	$2,000.00
Moderate (2 to 10 rides a month)	$1,589.30	$955.00
Occasional (less than 2 rides a month)	$945.00	$557.50

Table 2: Committed recreational riders spend four times as much as occasional riders

We estimated the number of recreational riders in each category using survey data from Corona Insights's 2018 U.S. Bicycling Participation Survey. We categorized each of Iowa's 99 counties into four categories: urban, suburban, small town, and rural. We designated central counties of metropolitan areas as defined by the Office of Management and Budget as "urban," other counties in these metropolitan areas as "suburban," counties in micropolitan areas as "small town," and counties with no metropolitan or micropolitan designation as "rural." We then estimated recreational ridership by multiplying the total population of each county by their respective bicycling rate and ride frequency.

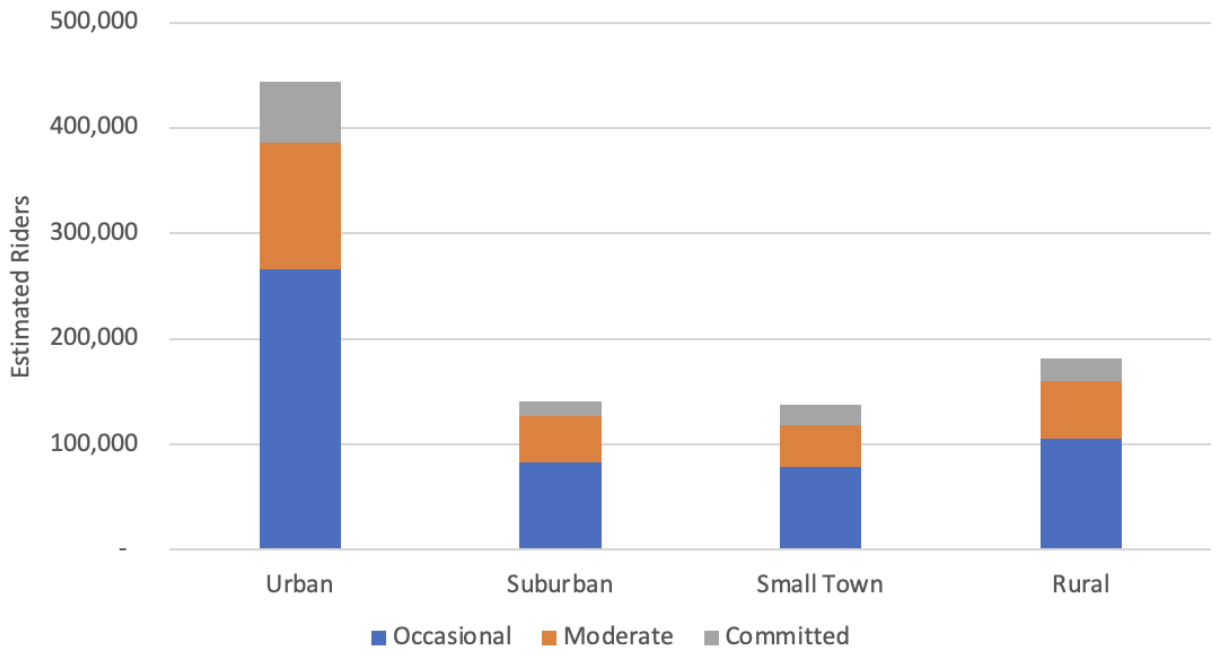

Figure 11: Estimated recreational riders in Iowa

We estimate there are about 900,000 recreational riders in Iowa. This is in range of estimates made by the Iowa Department of Natural Resources.[21] We estimate about three in five recreational riders are occasional riders, riding less than twice a month throughout the year. We

[21] Iowa Department of Natural Resources, "Iowa Residents' Participation in and Attitudes Toward Outdoor Recreation," 2022.

estimate most of Iowa's recreational riders live outside of Iowa's urban counties, with about 140,000 recreational riders residing in suburban counties and 320,000 residing in small-town or rural counties.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual economic impact of recreational riding to be $1.4 billion. If spending on recreational riding were its own industry, it would be a top 50 industry in the state of Iowa.[22] The largest impact is on the state retail trade industry, which received an annual economic impact of over half a billion dollars due to recreational riding in the state. Figure 12 shows the impacts broken down by industry for recreational riding.

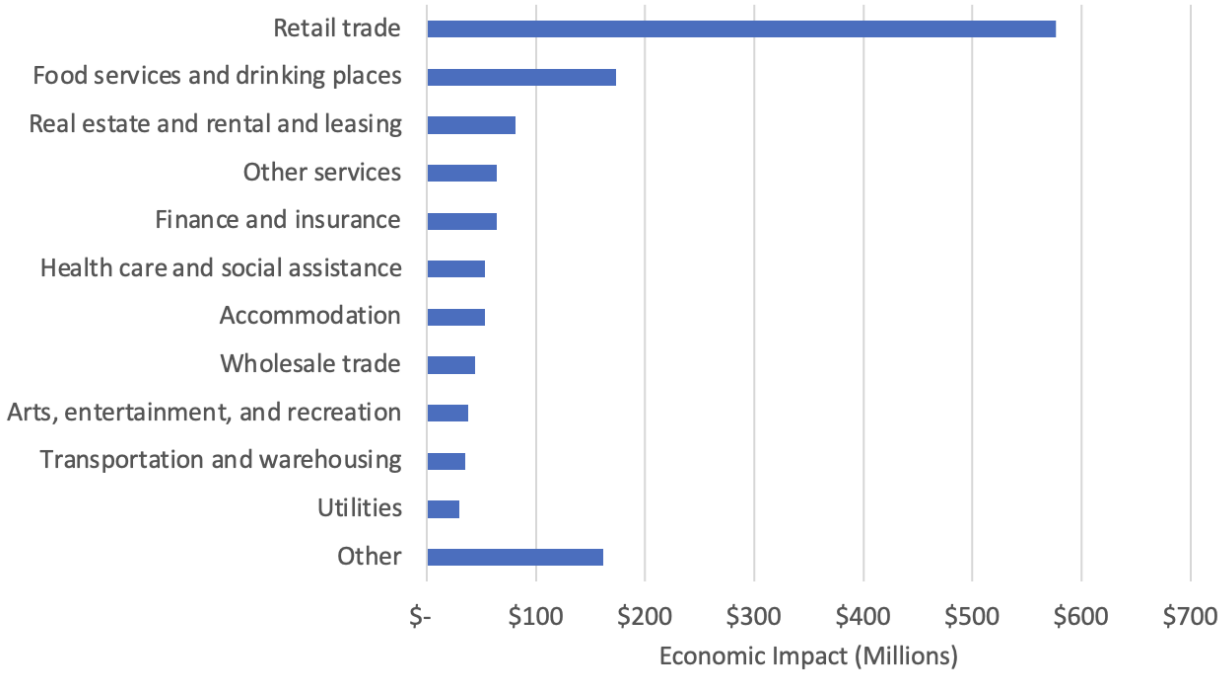

Figure 12: Annual economic impact of statewide recreational riding by industry

Iowa's retail trade industry benefits the most from recreational riding, enjoying over half a billion dollars in economic impact due to recreational riding, about 42% of the total economic impact of recreational riding across the state. We also estimate recreational riders in Iowa generate $170 million in economic impact for food services and drinking places and over $80 million in economic impact each for the real estate and rental and leasing industry.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate recreational riding in Iowa supports about 21,000 jobs across the state every year. About 46% of jobs supported are in the

[22] U.S. Bureau of Economic Analysis, "SAGDP2N Gross domestic product (GDP) by state 1" (accessed Tuesday, January 21, 2025).

retail trade industry, which recreational riding supports about 9,600 jobs for. Figure 13 shows the employment impact of recreational riding across Iowa broken down by industry.

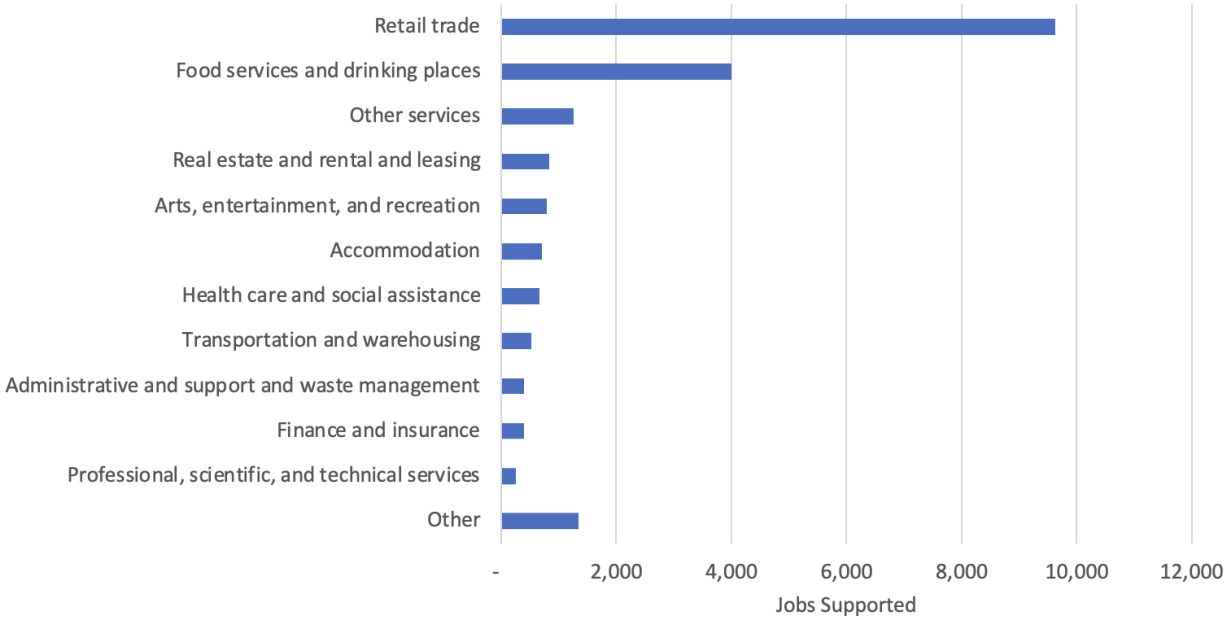

Figure 13: Annual employment impact of statewide recreational biking by industry

The statewide retail industry enjoys the largest employment impact, making up nearly half of the jobs supported by recreational biking. We estimate the food services and drinking places industry also has about 4,000 jobs supported every year due to recreational riding and about 1,300 jobs in the other services industry are also supported by recreational riding.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual earnings generated by recreational riding to be about $690 million. The largest impact is on workers in the retail trade industry, who earn $270 million due to recreational biking in the state. Figure 14 shows the annual earnings generated by recreational biking broken down by industry.

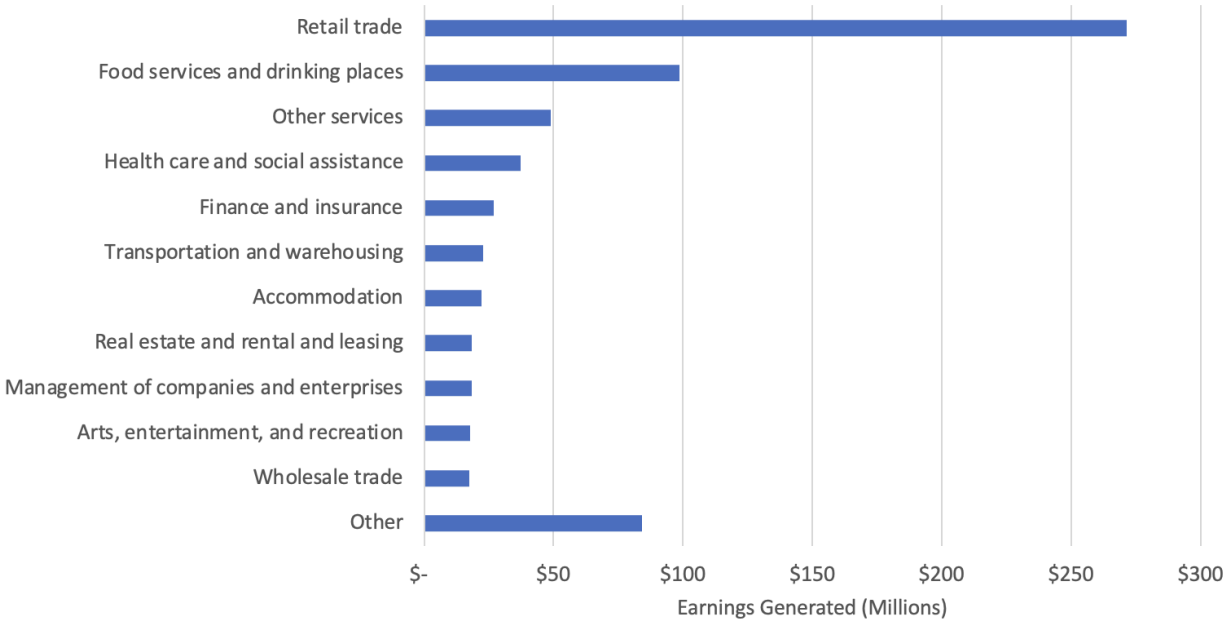

Figure 14: Annual earnings impact of statewide recreational biking by industry

Workers in the retail trade sector enjoy the most earnings, enjoying 40% of the total annual earnings generated by recreational biking. Workers in the food services and drinking places industry also earn about $100 million per year due to economic activity generated by recreational cyclists.

We also estimate recreational biking across the state generates about $23 million per year in state income taxes and $11 million per year in state sales taxes.

Retail Establishments

The bicycle dealership and repair industry represents a $8.3 billion industry in the United States.[23] We surveyed a range of retail establishments that catered to cyclists. The purpose of this section was to determine the economic impact of bicycle-related retail establishments in Iowa.

We used survey responses collected from bicycle retail establishments to determine the impacts of bicycle retailers on the Iowa economy. We used the survey to determine basic economic indicators and market demographics from bicycle retail establishments. The questionnaires were completed by participants through Google Forms, an online survey tool. Survey questions included the total number of bicycles sold and total revenue, expenses and employment.

[23] IBISWorld, “Bicycle Dealership and Repair in the US - Market Size (2004–2029),” Accessed November 7, 2024, https://www.ibisworld.com/industry-statistics/market-size/bicycle-dealership-repair-united-states/

Participants for this study include bicycle retailers in the state of Iowa. Responses were solicited and collected by the Iowa Bicycle Coalition.

Retail Survey Data

We collected data from 42 retail establishments across 25 of Iowa's counties. Unlike the distribution of riders, our bicycle retail survey respondents were fairly evenly distributed across the state. The three most represented counties were Polk County with six responses, then Pottawamie and Story Counties with four responses each.

Bicycle shops tend to rely heavily on in-person sales compared to online purchases. The median business in our sample reported having 1,400 in-person customer visits last year compared to only 10 online orders.

If we only look at the subset of businesses that more heavily rely on online orders (those with at least 50 in the last year), we still find a large reliance on in-person customer visits. Among these establishments, the median store saw a little over 5,000 customer visits in-person compared to 300 online orders.

Type of store	Median in-person customers	Median online orders
All stores	1,400	10
High online presence stores (at least 50 online orders)	5,000	300

Table 3: Even stores with many online sales rely heavily on in-person sales.

The majority of the revenue reported by the businesses in our survey came from the sale of bicycles (52%). The next largest individual categories of revenue were from accessory sales and repair services (14% and 9% respectively). In total, the 43 businesses reported having over $30 million in revenue over the previous year.

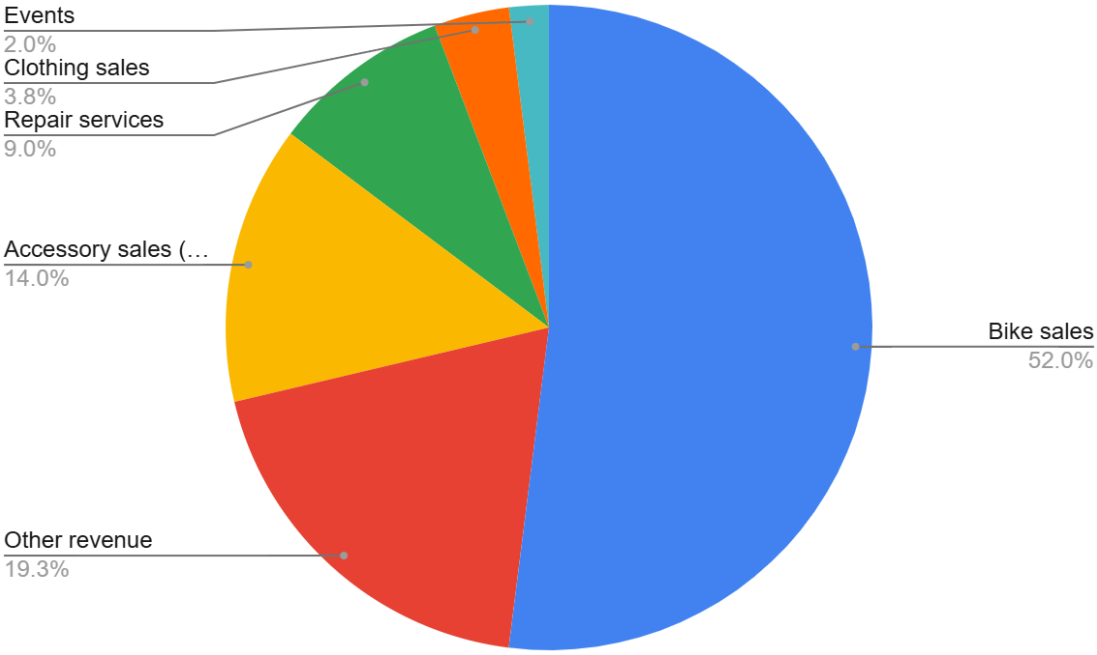

Figure 15: Bicycles made up over half of retail sales in our survey

The retailers we surveyed sold, on average, about $370,000 worth of bicycles, $100,000 worth of accessories, and $60,000 of repair services over the past year.

	Bicycle sales	Accessory sales	Repair services	Clothing sales	Events	Other revenue
Total	$15,735,788	$4,227,146	$2,719,670	$1,141,140	$600,422	$5,843,698
Percentage	52.0%	14.0%	9.0%	3.8%	2.0%	19.3%
Average	$365,949	$98,306	$63,248	$26,538	$13,963	$135,900

Table 4: The average retailer sold about $370,000 in bicycles over the past year.

Inventory-related expenses made up the largest percentage of the total expenses reported by our survey respondents (57%). This is because the largest revenue categories were both related to goods rather than services (bike and accessory sales). The next two largest categories of expenses were for facilities and personnel (19% and 17% respectively).

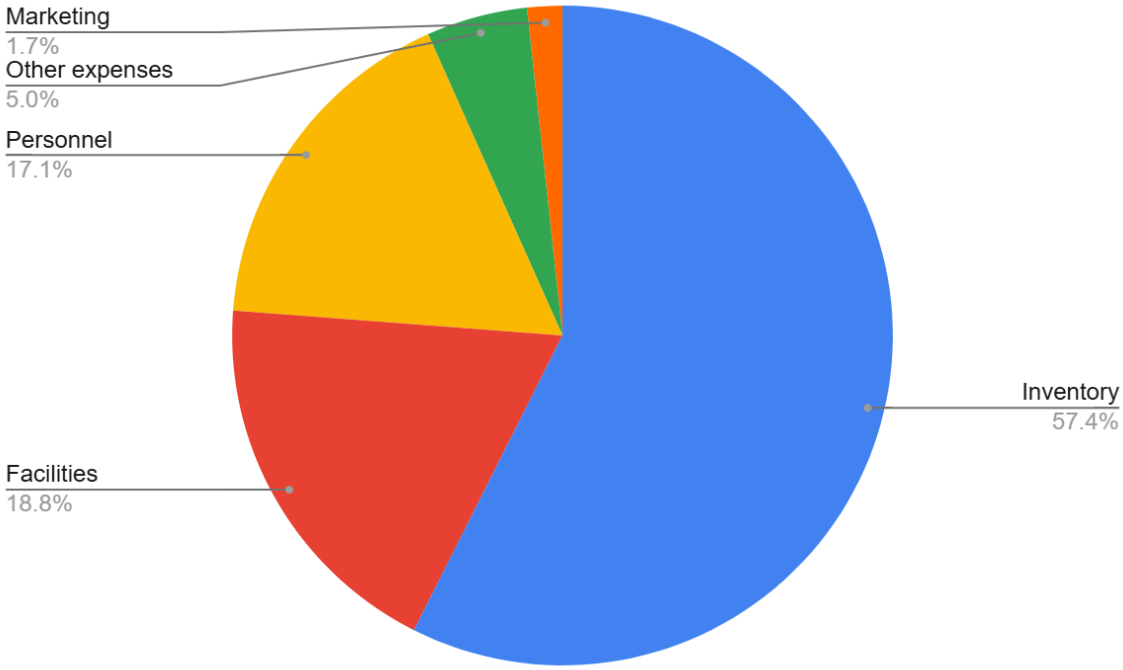

Figure 16: Inventory makes up over half of expenses among retail survey respondents.

The average respondent reported their business spent about $300,000 on inventory over the past year, about $100,000 on facilities, and about $90,000 on personnel.

	Inventory	Facilities	Personnel	Marketing	Other expenses
Total	$10,378,273	$3,395,070	$3,094,212	$310,550	$895,450
Percentage	57.4%	18.8%	17.1%	1.7%	5.0%
Mean	$296,522	$97,002	$88,406	$8,873	$25,584

Table 5: The average retail survey respondent spent $300,000 on inventory in the past year.

According to data from the Bureau of Labor Statistics, the median hourly wage for a retail salesperson in Iowa is $14.43 per hour.[24] This is almost identical to the median hourly wage reported for bicycle repair workers, $14.30 per hour.[25]

[24] Bureau of Labor Statistics, “Occupational Employment and Wage Statistics,” May 2023, Accessed November 13, 2024. Available Online: https://www.bls.gov/oes/2023/may/oes_ia.htm
[25] Ibid.

Businesses that responded to our survey reported employing more part-time seasonal workers than any other group. The second most common employee type for our survey respondents was full-time workers.

Type of Employee	Total Number	Average per business
Full-time	114	2.7
Full-time - seasonal	58	1.3
Part-time	78	1.8
Part-time - seasonal	150	3.5
Contractors	30	0.7

Table 6: Seasonal and full-time employees were most common among respondent establishments

Economic Impact Results

To estimate the economic impact of bicycle retail establishments, we consulted with industry professionals who gave us estimates of retail sales of establishments across the state of Iowa.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual economic impact of bicycle retail establishments to be $56 million. The largest impact is on the state retail trade industry, which received an annual economic impact of about $36 million due to spending at bicycle retail establishments in the state. Figure 17 shows the impacts broken down by industry for bicycle retail establishments.

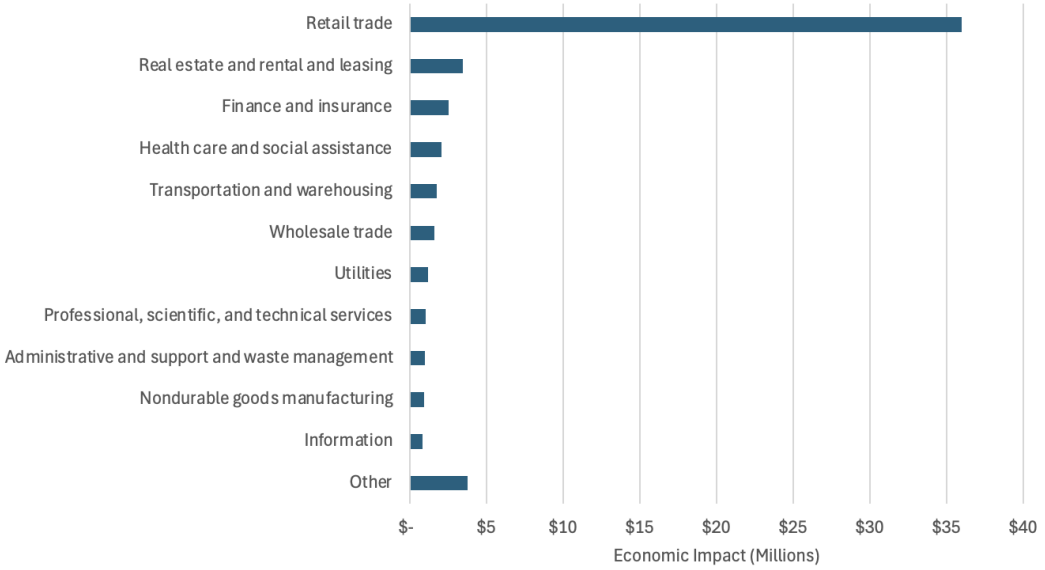

Figure 17: Annual economic impact of bicycle retail establishments by industry

Iowa's retail trade industry benefits the most from bicycle retail establishments, enjoying $36 million in economic impact due to bicycle retail establishments, nearly two-thirds of the total economic impact of bicycle retail establishments across the state. We also estimate bicycle retail establishments in Iowa generate $3.4 million in economic impact for the real estate and rental and leasing industry and over $2.5 million in economic impact each for the finance and insurance industry.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate bicycle retail establishments in Iowa support about 800 jobs across the state every year. About three-quarters of jobs supported are in the retail trade industry, which bicycle retail establishments support about 590 jobs for. Figure 18 shows the employment impact of bicycle retail establishments across Iowa broken down by industry.

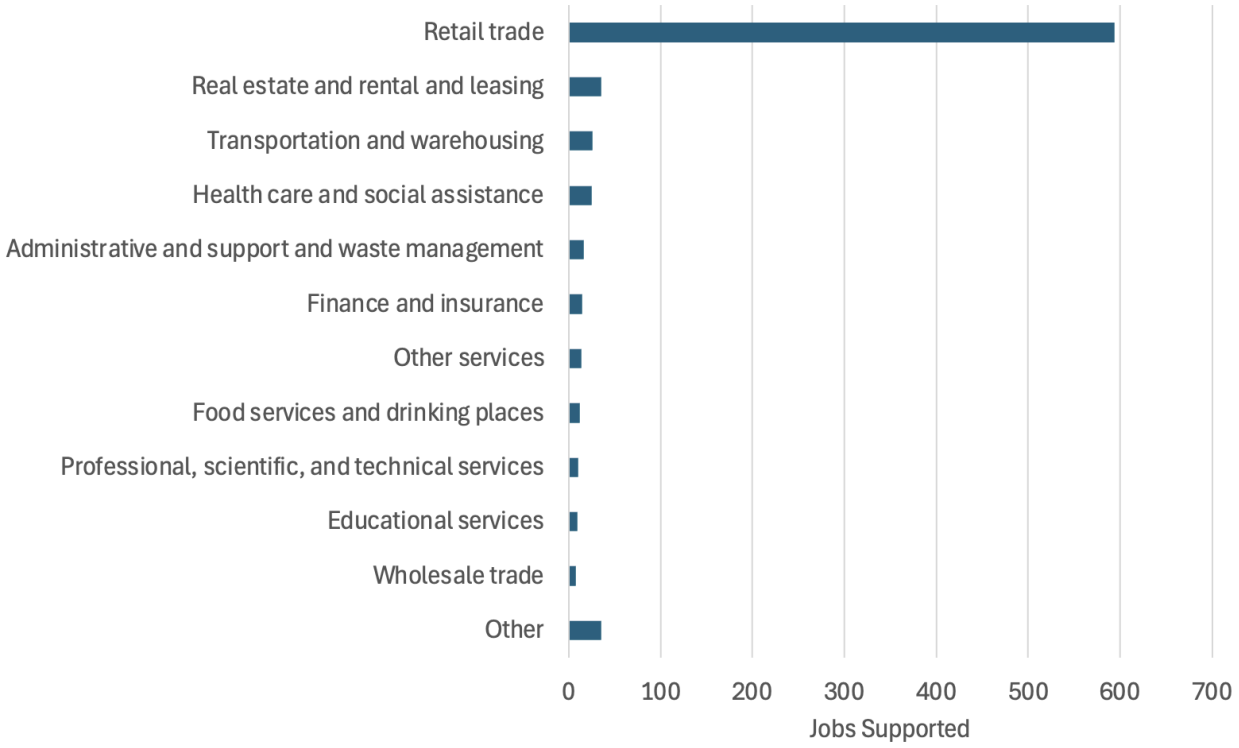

Figure 18: Annual employment impact of bicycle retail establishments by industry

The statewide retail trade industry enjoys the largest employment impact, making up nearly three-quarters of the jobs supported by bicycle retail establishments. We estimate the real estate and rental and leasing industry also has about 35 jobs supported every year due to bicycle retail establishments and about 26 jobs in the transportation and warehousing industry are also supported by bicycle retail establishments.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual earnings generated by bicycle retail establishments in Iowa to be about $26 million. The largest impact is on workers in the retail trade industry, who earn $17 million due to bicycle retail establishments

in the state. Figure 19 shows the annual earnings generated by bicycle retail establishments broken down by industry.

Figure 19: Annual earnings impact of statewide bicycle retail establishments by industry

Workers in the retail trade sector enjoy the most earnings from retail establishments, enjoying 63% of the total annual earnings generated by bicycle retail establishments. Workers in the health care and social assistance industry also earn about $1.4 million per year due to economic activity generated by bicycle retail establishments.

We also estimate recreational biking across the state generates about $900,000 per year in state income taxes and $400,000 per year in state sales taxes.

Bicycle Organizations

Bicycle clubs and organizations across Iowa play a significant role in promoting cycling culture and support the economy by organizing events, volunteering, and spending.

We collected survey data from 47 organizations across Iowa representing over 20,000 members. This represents almost 15% of the total bicycle organizations in Iowa.

The 47 organizations we surveyed had operating budgets that totaled over $3.7 million in the previous year. This meant that our average organization had an operating budget of just over $80,000. The median organization in our survey only had an operating budget of $10,000, suggesting that our data are quite heavily right-skewed.

Additionally, organizations that responded to our survey were responsible for organizing 377 bicycling events each year. As with the other statistics regarding organizations, the distribution of events is also right-skewed. Four respondents are responsible for organizing 200 of the 377 events each year, about 53% of all bicycling events

	Average	Median
Number of members	447	25
Organizational budget	$80,206	$10,000
Number of events organized	8	2

Table 8: The average bicycle organization had 25 members.

When looking at where bike organizations raise their revenue, we find that the largest source was donations, about 22% (further broken down into corporate and personal donations). The plurality (39%) of our survey respondents' budgets comes from other sources of revenue.

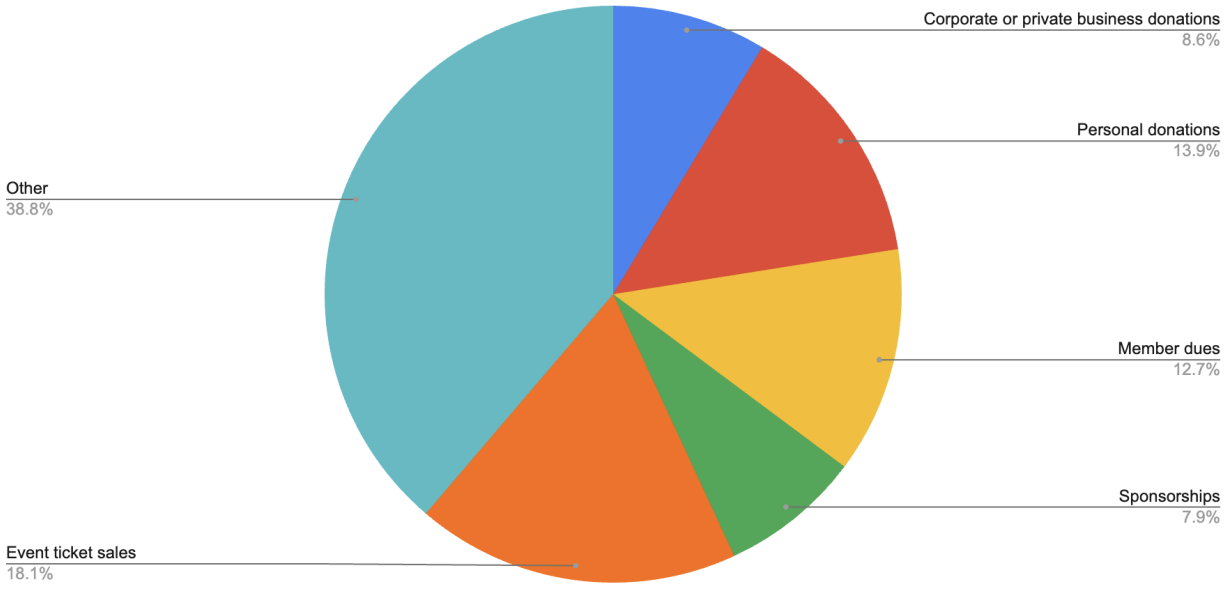

Figure 20: Bicycle organizations raise revenue from a range of sources

Value of Volunteer Hours

The 47 organizations that responded to our survey reported their nearly 2,700 volunteers contributed **over 180,000 hours** of volunteer time to their organizations. The median organization reported 12 volunteers contributing 245 hours of volunteer time in the past year.

Independent Sector, a coalition of nonprofit organizations, foundations and corporate giving programs in the United States, estimates the value of a volunteer hour in Iowa in 2023 was about $28.88.[26] This suggests volunteers for these organizations contributed a total of **$5.2 million** in volunteer time value in the year prior to our survey.

The Iowa Bicycle Coalition reports 321 bicycle clubs across the state of Iowa. If the remaining 283 bicycle clubs each had volunteer rates at the median rate of the clubs in our survey, they would generate another 67,000 volunteer hours, worth a total of $1.9 million. This would make **the total value of the 250,000 volunteer hours associated with bicycle clubs in Iowa about $7.1 million**.

Economic Impact

To estimate the economic impact of bicycle organizations in Iowa, we begin with a baseline of survey responses from bicycle organizations on their current organizational budgets. We then assume the 273 bicycle clubs that did not respond to our survey have budgets equal to the median budget of organizations that responded to our survey. This conservative assumption allows us to capture the value of organizations who did not respond to the survey while not overstating their economic impact. We took budgets of bicycle organizations to qualify as a type of “amusement, gambling, and recreation industries” for the purposes of calculating economic impact with the RIMS II model.

Using the Bureau of Economic Analysis’s RIMS II Model, we estimate the total annual economic impact of bicycle organizations to be $6.3 million. The largest impact is on the state arts, entertainment, and recreation industry, which received an annual economic impact of about $3.7 million due to spending by bicycle organizations in the state. Figure 21 shows the impacts broken down by industry for bicycle organizations.

[26] Independent Sector, “Value of Volunteer Time by State (2009-2023),” Accessed November 25, 2024, https://independentsector.org/wp-content/uploads/2024/04/is-vovt-report-all-years_v2-1.pdf

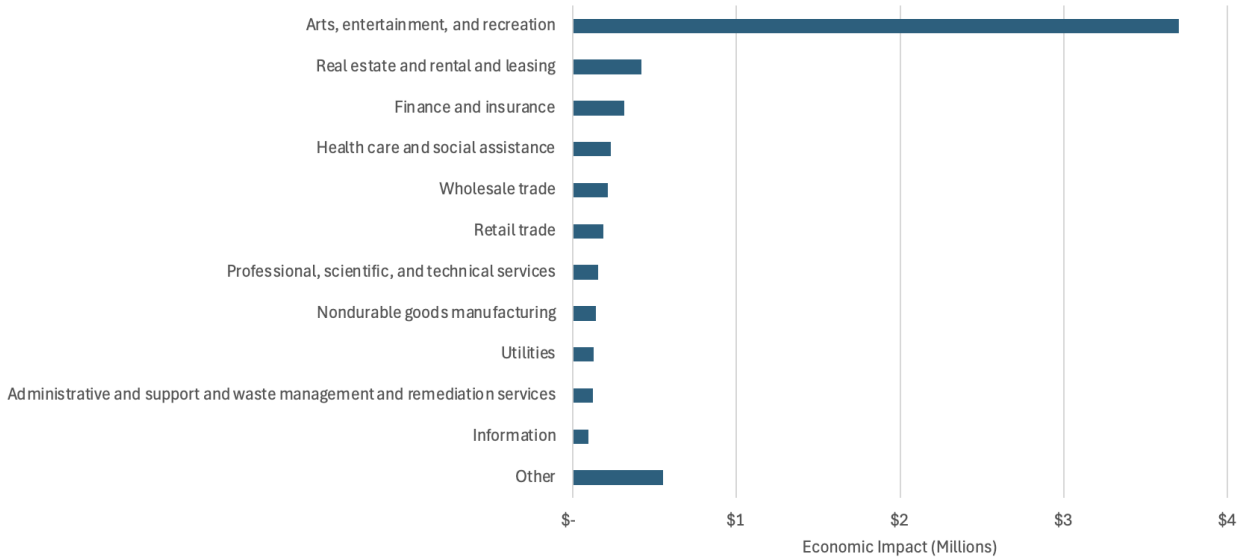

Figure 21: Annual economic impact of bicycle organizations by industry

Iowa's arts, entertainment, and recreation industry benefits the most from bicycle organizations, enjoying $3.7 million in economic impact due to bicycle organizations, 59% of the total economic impact of bicycle organizations across the state. We also estimate bicycle organizations in Iowa generate $420,000 in economic impact for the real estate and rental and leasing industry and $320,000 in economic impact each for the finance and insurance industry.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate bicycle organizations in Iowa support about 83 jobs across the state every year. About three-quarters of jobs supported are in the arts, entertainment, and recreation industry, which bicycle organizations support about 57 jobs for. Figure 22 shows the employment impact of bicycle organizations across Iowa broken down by industry.

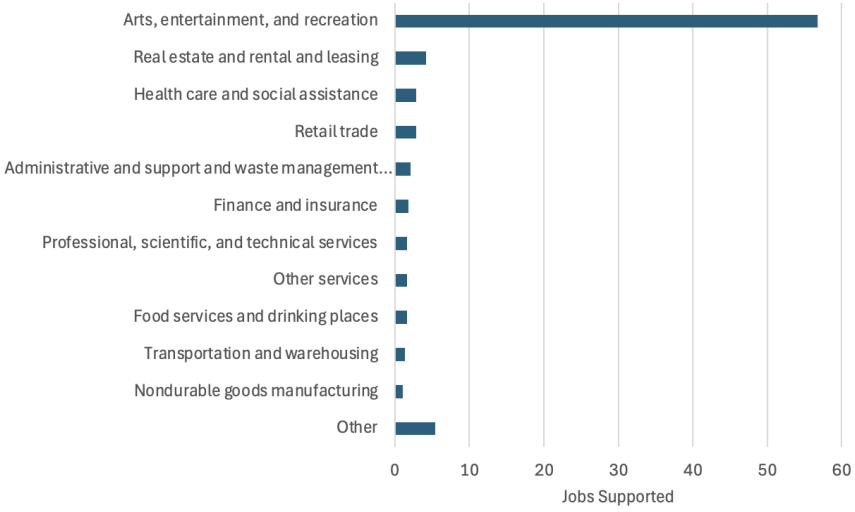

Figure 22: Annual employment impact of bicycle organizations by industry

The arts, entertainment, and recreation industry enjoys the largest employment impact, making up two-thirds of the jobs supported by bicycle organizations. We estimate bicycle organizations also support about 26 other jobs across the state, ranging from jobs in real estate and rental and leasing to health care and social assistance to retail trade.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual earnings generated by bicycle organizations in Iowa to be about $3 million. The largest impact is on workers in the arts, entertainment, and recreation industry, who earn $1.7 million due to bicycle organizations in the state. Figure 23 shows the annual earnings generated by bicycle organizations broken down by industry.

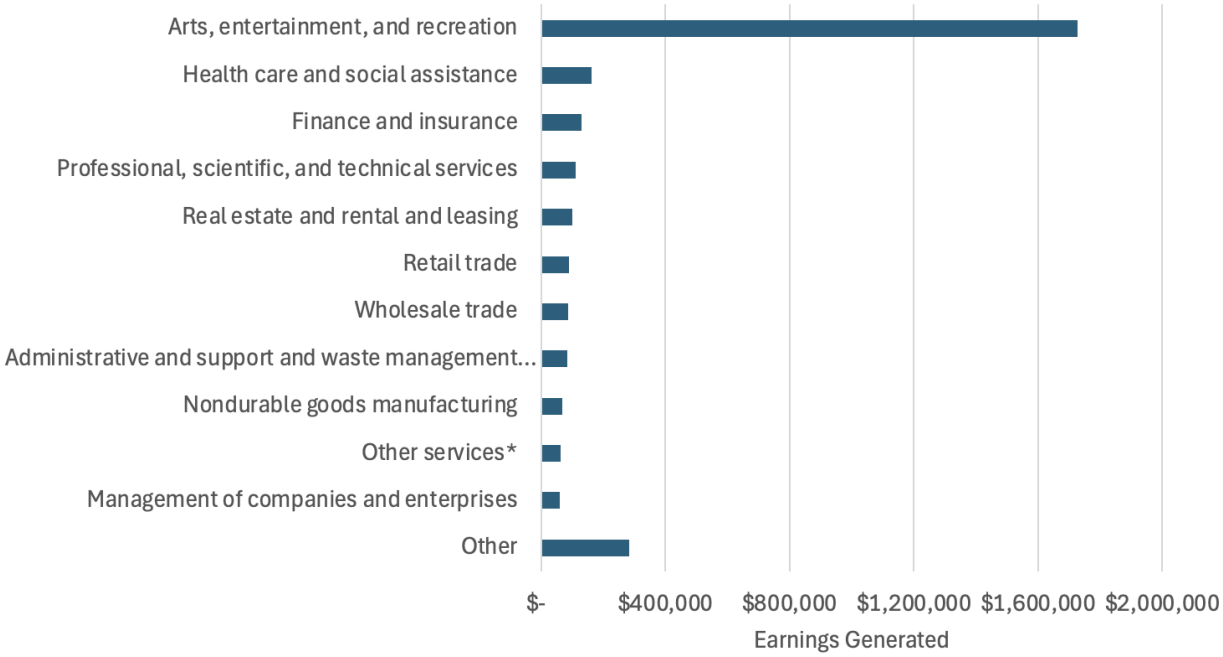

Figure 23: Annual earnings impact of statewide bicycle organizations by industry

Workers in the arts, entertainment, and recreation sector will gain the most earnings, enjoying 58% of the total annual earnings generated by bicycle organizations. Workers in the real estate and rental and leasing, professional, scientific, and technical services, finance and insurance, and health care and social assistance industries also earn over $100,000 per year due to economic activity generated by bicycle organizations.

We also estimate recreational biking across the state generates about $98,000 per year in state income taxes and $47,000 per year in state sales taxes.

Local Government Spending

The Iowa Department of Transportation reports over 1,300 miles of multi-use trails throughout the state.[27] Over 80% of multi-use trails are made from asphalt or some combination of asphalt and another material. Other common materials are concrete and limestone.

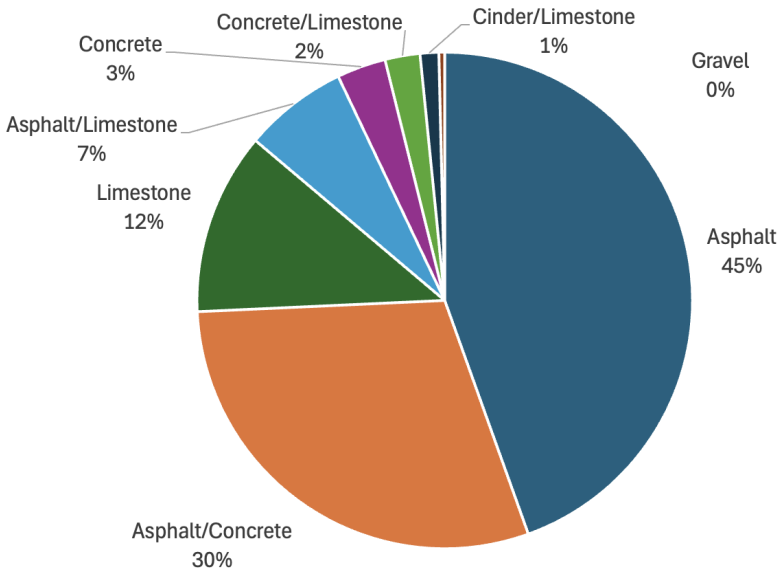

Figure 24: Asphalt is most common material in Iowa's multiuse trails

In 2022, the Rails to Trails Conservancy estimated the cost of trail maintenance for six multiuse trails across the country.[28] Per-mile annual maintenance costs ranged from $680 for a suburban trail in Lincoln, Nebraska to over $100,000 for an urban trail in Philadelphia, Pennsylvania.

[27] Iowa Department of Transportation, "Iowa's Multiuse Trails," Accessed January 2, 2025, https://iowadot.gov/iowabikes/Iowa-Trails/Multiuse-trails
[28] Rails-to-Trails Conservancy, "Routine Trail Maintenance Costs Per Mile," October 6, 2022, Accessed January 2, 2025, https://www.railstotrails.org/resource-library/resources/routine-trail-maintenance-costs-per-mile/

Location	Material	Setting	Maintenance Cost per Mile
Western Pennsylvania	Stone Dust	Rural	$2,377
Lincoln, Nebraska	Concrete	Suburban	$679
Central New Hampshire	Stone Dust	Rural	$1,330
Northern Indiana	Asphalt	Rural	$967
Seattle, Washington	Asphalt	Suburban	$7,819
Philadelphia, Pennsylvania	Asphalt	Urban	$102,322

Table 9: Trail maintenance costs per mile vary substantially across the country.

These thousands of dollars of trail maintenance per mile can add up to millions of dollars of contribution to a state economy. They also have been shown to help create jobs.[29] Construction and maintenance spending puts dollars in the pockets of workers and requires purchasing of equipment, materials, and real estate.

We surveyed nearly 50 public sector employees on local trail construction and maintenance spending in Iowa. We used these responses to estimate the economic impact of trail construction and maintenance spending in the state. Since we do not have data on the total spending throughout the state, we only use the data within the survey. This represents a conservative estimate of the economic impact of local government spending throughout the state.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual economic impact of local government spending on trails reported in our survey to be $24 million. The largest impact is on the construction industry, which received an annual economic impact of about $12 million due local government spending on trails in the state. Figure 25 shows the impacts broken down by industry for local government spending on trails reported in our survey.

[29] Garrett-Peltier, Heidi. Pedestrian and bicycle infrastructure: A national study of employment impacts. Amherst: Political Economy Research Institute, University of Massachusetts, Amherst, 2011.

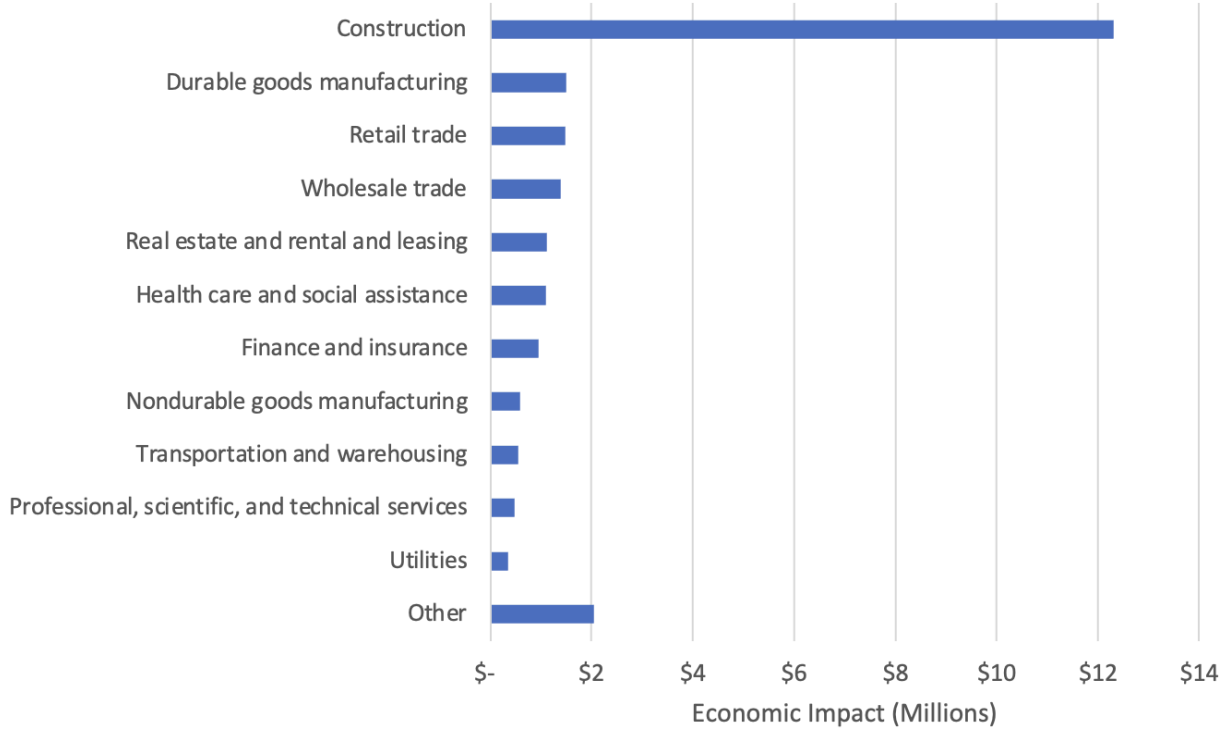

Figure 25: Annual economic impact of local government spending on trails reported in our survey by industry

Iowa's construction industry benefits the most from local government spending on trails reported in our survey, enjoying $12 million in economic impact due, about half of the total economic impact of local government spending on trails reported in our survey. We also estimate local government spending on trails reported in our survey generates $1.5 million in economic impact each for the durable goods and retail trade industries.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate local government spending on trails reported in our survey supports about 260 jobs across the state every year. About half of jobs supported are in the construction industry, which local government spending on trails reported in our survey supports about 140 jobs for. Figure 26 shows the employment impact of local government spending on trails reported in our survey broken down by industry.

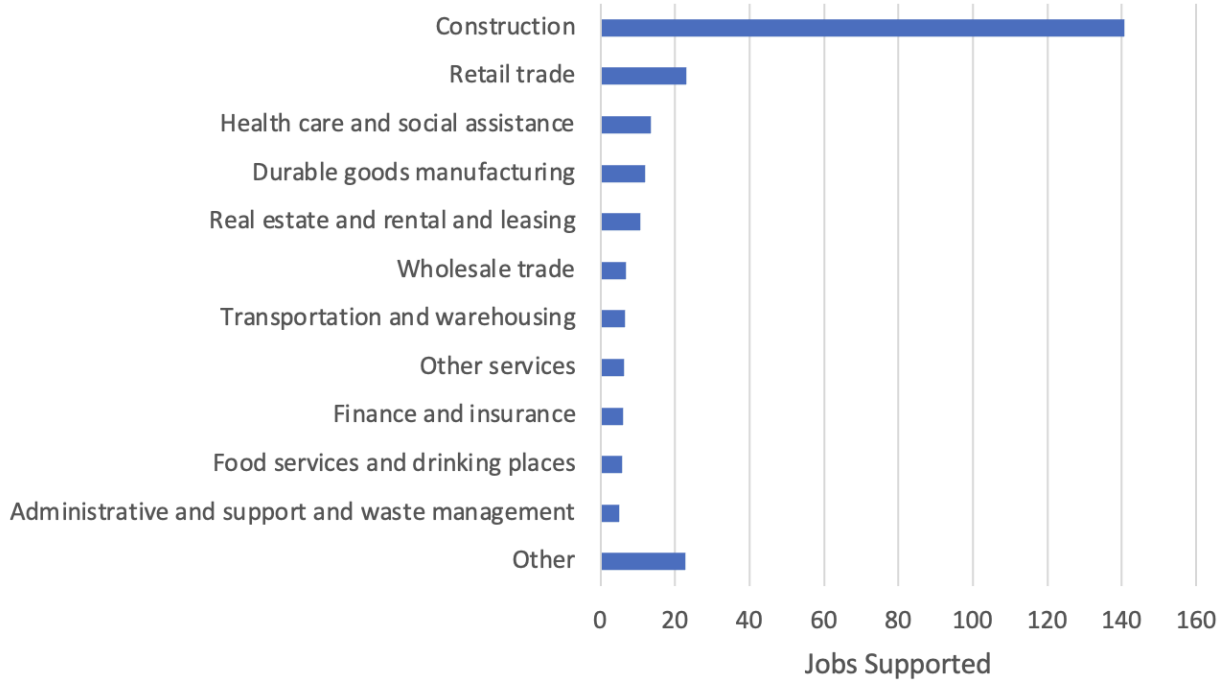

Figure 26: Annual employment impact of local government spending reported in our survey by industry

The construction industry enjoys the largest employment impact, making up half of the jobs supported by local government spending on trails reported in our survey. We estimate local government spending on trails reported in our survey also supports about two dozen retail trade jobs and a dozen jobs each in the health care and social assistance, durable goods manufacturing, and real estate and rental and leasing industries.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual earnings generated by local government spending on trails reported in our survey to be about $14 million. The largest impact is on workers in the construction industry, who earn $8.4 million due to local government spending on trails reported in our survey. Figure 27 shows the annual earnings generated by local government spending on trails broken down by industry.

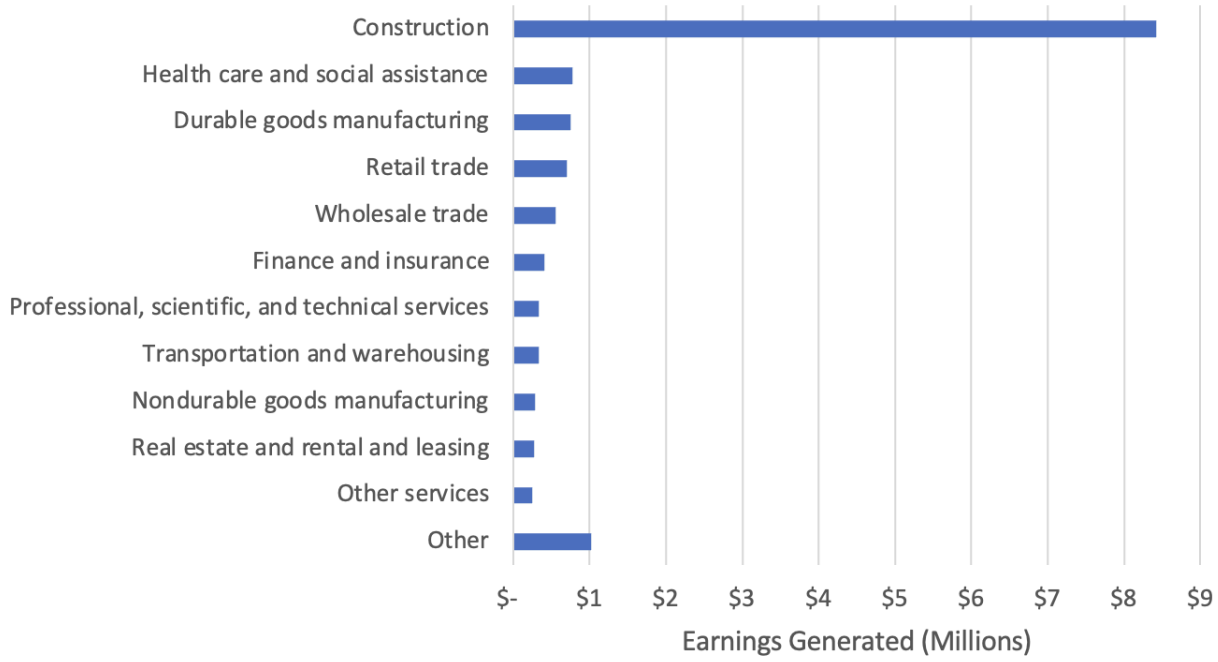

Figure 27: Annual earnings impact of local government spending on trails by industry

Workers in the construction sector earn the most earnings, enjoying 60% of the total annual earnings generated by local government spending on trails reported in our survey. Workers in the durable goods manufacturing and health care and social assistance industries also each earn over $700,000 per year due to economic activity generated by local government spending on trails.

We also estimate local government spending on trails across the state generates about $460,000 per year in state income taxes and $220,000 per year in state sales taxes.

Tourism

Iowa also experiences some economic benefit from bicycle-related tourism. Tourism Economics estimates about $1.2 billion was spent on recreation & entertainment tourism in Iowa in 2013.[30] Other Midwestern states like Indiana have found ways to make trails attractive for residents and visitors.[31] The Bureau of Economic Analysis estimates bicycling activities in Iowa have a value added benefit of $24 million and the value added of the arts, entertainment, and recreation industry is $2.1 billion, so bicycling is about 1.1% of the entire arts, entertainment, and

[30] Tourism Economics, “The Iowa Visitor Economy 2023,” October 2024, Accessed December 20, 2024, https://industrypartners.traveliowa.com/UserDocs/research/iowa_tourism_economic_impact_-_2023_-_client_preliminary.pdf
[31] Indiana University Public Policy Institute, “Reasons to Love the Indianapolis Cultural Trail: A Legacy of Gene and Marilyn Glick,” Available Online: https://indyculturaltrail.org/wp-content/uploads/2015/07/Cultural-Trail-issue-brief-15-C23.pdf

recreation industry. Assuming it makes up a similar percentage of tourism, it represents about $13 million in spending.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual economic impact of bicycle tourism to be $13 million. The largest impact is on the state arts, entertainment, and recreation industry, which received an annual economic impact of about $7.6 million due to spending on bicycle tourism in the state. Figure 28 shows the impacts broken down by industry for bicycle tourism.

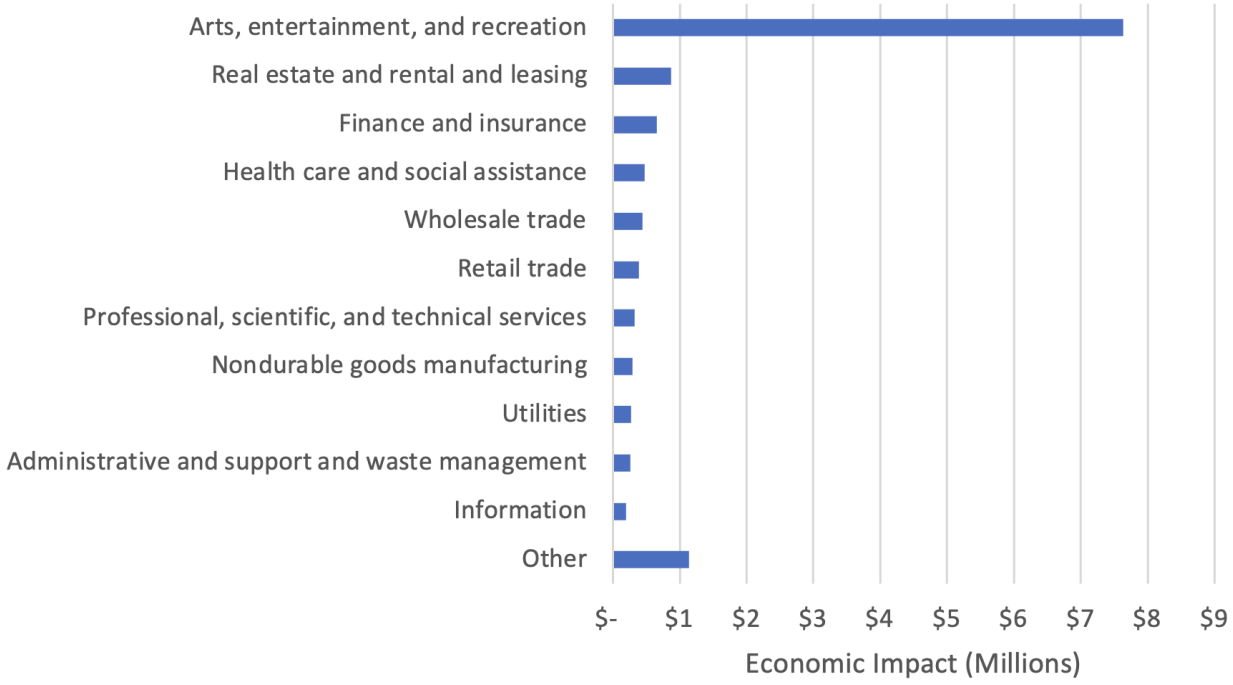

Figure 28: Annual economic impact of bicycle tourism by industry

Iowa's arts, entertainment, and recreation industry benefits the most from bicycle tourism, enjoying $7.6 million in economic impact due to bicycle tourism, 59% of the total economic impact of bicycle tourism across the state. We also estimate bicycle tourism in Iowa generates $870,000 in economic impact for the real estate and rental and leasing industry and $650,000 in economic impact for the finance and insurance industry.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate bicycle tourism in Iowa supports about 170 jobs across the state every year. About three-quarters of jobs supported are in the arts, entertainment, and recreation industry, which bicycle tourism supports about 120 jobs for. Figure 29 shows the employment impact of bicycle tourism across Iowa broken down by industry.

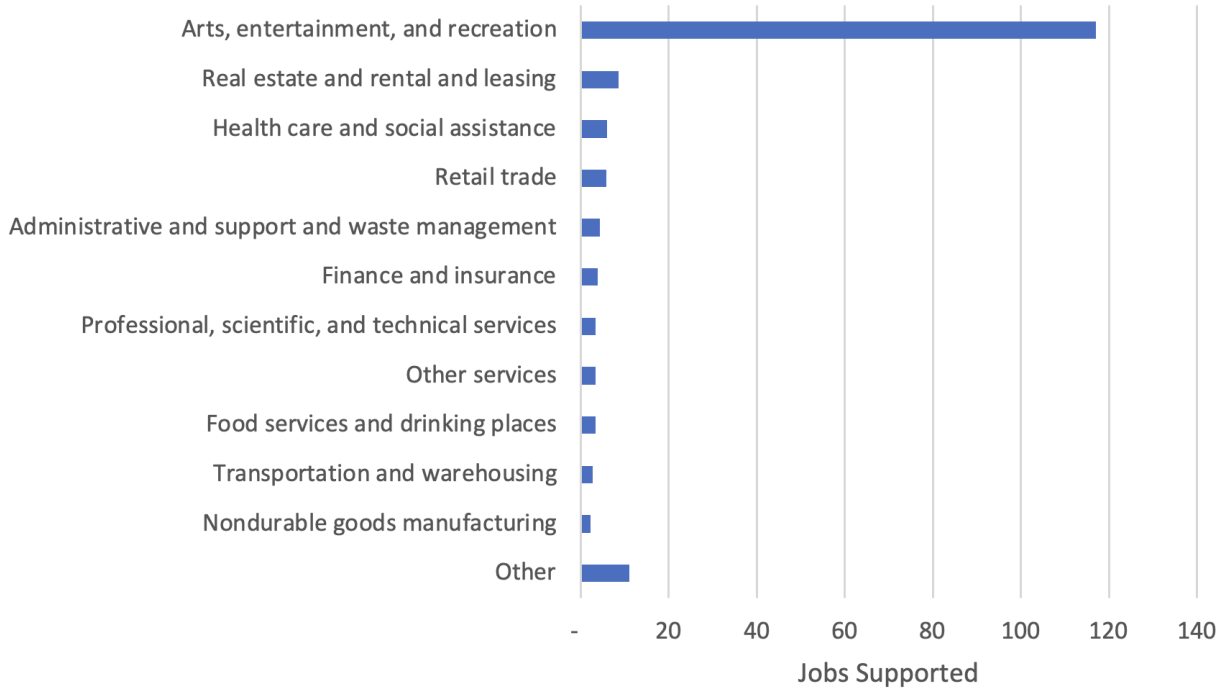

Figure 29: Annual employment impact of bicycle tourism by industry

The arts, entertainment, and recreation industry enjoys the largest employment impact, making up two-thirds of the jobs supported by bicycle tourism. We estimate bicycle tourism also supports about 55 other jobs across the state, ranging from jobs in real estate and rental and leasing to health care and social assistance to retail trade.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual earnings generated by bicycle tourism in Iowa to be about $6.1 million. The largest impact is on workers in the arts, entertainment, and recreation industry, who earn $3.6 million due to bicycle tourism in the state. Figure 30 shows the annual earnings generated by bicycle tourism broken down by industry.

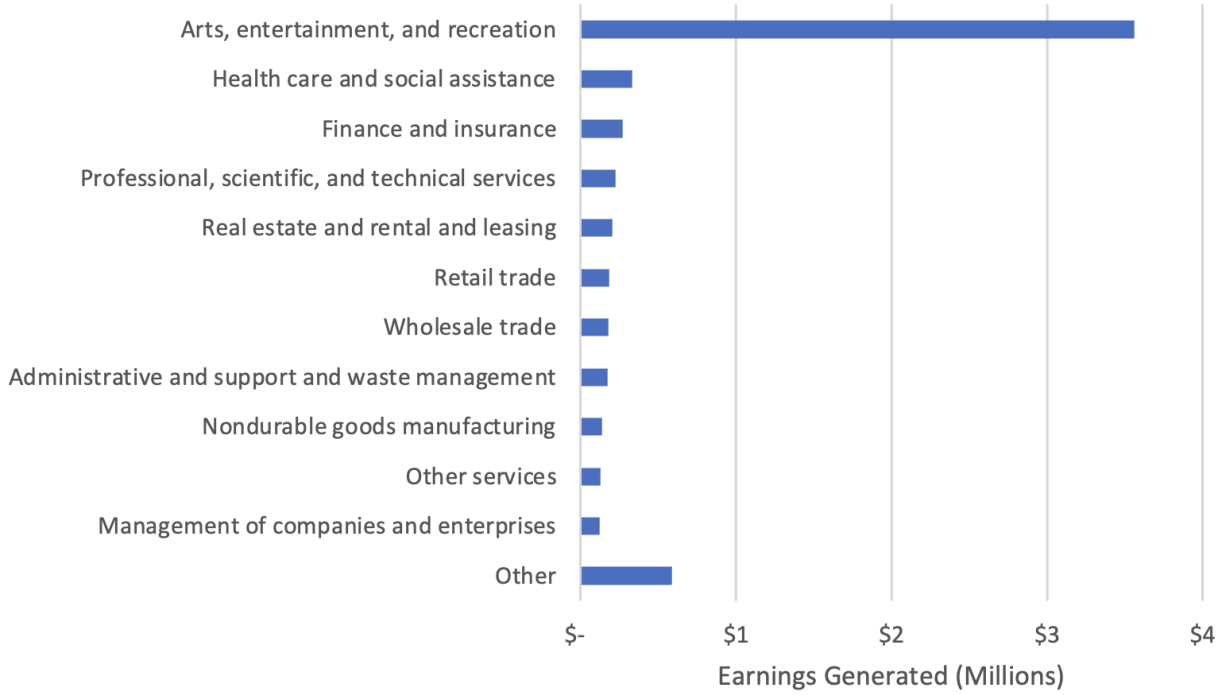

Figure 30: Annual earnings impact of bicycle tourism by industry

Workers in the arts, entertainment, and recreation sector gain the most earnings, enjoying 58% of the total annual earnings generated by bicycle tourism. Workers in the real estate and rental and leasing, professional, scientific, and technical services, finance and insurance, and health care and social assistance industries also earn over $200,000 per year due to economic activity generated by bicycle tourism.

We also estimate bicycle tourism across the state generates about $200,000 per year in state income taxes and $97,000 per year in state sales taxes.

Regional Impacts

In this section, we show the economic impacts of commuters and recreational riders on the regional economies of three regions: Cedar Rapids-Iowa City, Des Moines-Ames, and Pottawattamie County.

Cedar Rapids-Iowa City

The Cedar Rapids-Iowa City region makes up Iowa Regional Planning Affiliation 11, comprising Benton, Cedar, Iowa, Johnson, Jones, Linn, and Washington counties. We estimate the Cedar Rapids-Iowa City region is home to about 140,000 cyclists. About 60% of these are occasional riders, though we still estimate the region is home to almost 60,000 people who ride at least moderately (at least twice a month).

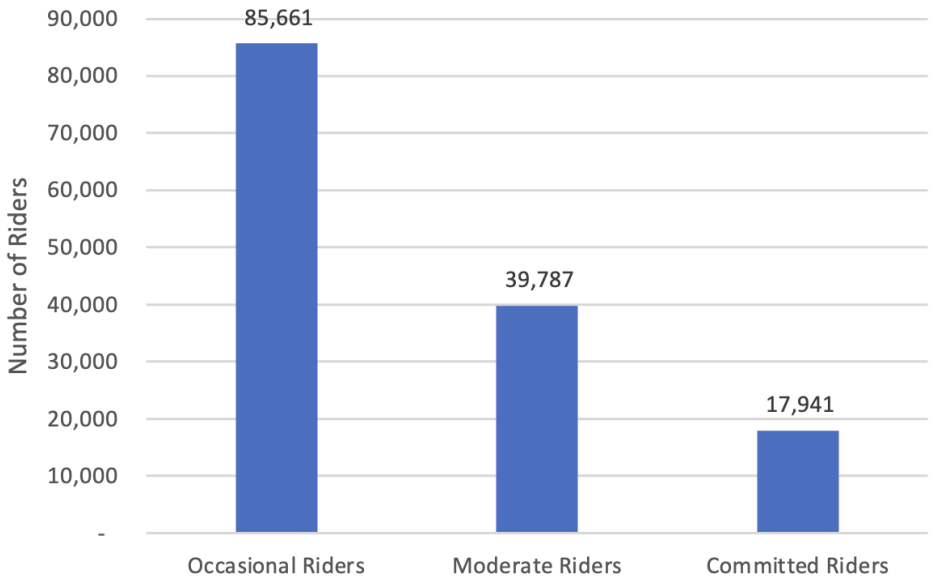

Figure 31: Cedar Rapids-Iowa City is home to about 140,000 cyclists

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual economic impact of bicyclists in Cedar Rapids-Iowa City to be $210 million. The largest impact is on the region's retail trade industry, which receives an annual economic impact of about $91 million due to spending by bicyclists. Figure 32 shows the impacts broken down by industry for bicyclists in Cedar Rapids-Iowa City.

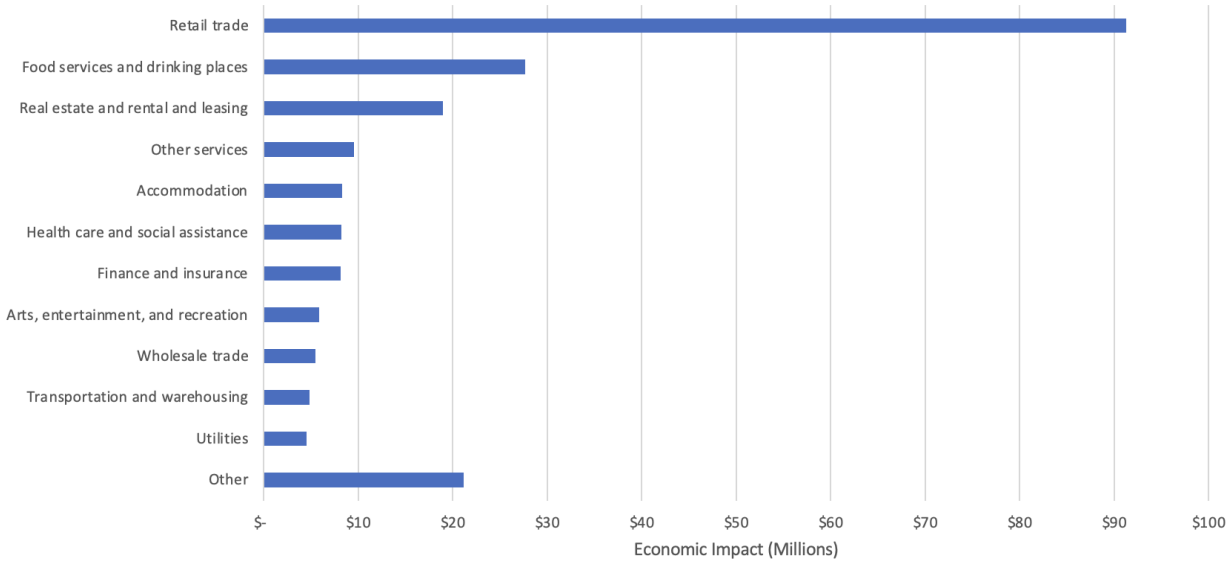

Figure 32: Annual economic impact of cyclists in Cedar Rapids-Iowa City by industry

Cedar Rapids-Iowa City's retail trade industry benefits the most from bicycle organizations, enjoying $91 million in economic impact due to cyclists, 43% of the total economic impact of

cyclists in the region. We also estimate cyclists in Cedar Rapids-Iowa City generate $28 million in economic impact for the food services and drinking places industry and $19 million in economic impact each for the real estate and rental and leasing industry.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate cyclists in Cedar Rapids-Iowa City support about 3,300 jobs in the region every year. About 46% of jobs supported are in the retail industry, which cyclists support about 1,500 jobs for in Cedar Rapids-Iowa City. Figure 33 shows the employment impact of cyclists in Cedar Rapids-Iowa City broken down by industry.

Figure 33: Annual employment impact of cyclists in Cedar Rapids-Iowa City by industry

The retail industry enjoys the largest employment impact, making up 46% of the jobs supported by cyclists in Cedar Rapids-Iowa City. We estimate cyclists also support about 640 jobs at food services and drinking places and 200 jobs in the real estate and rental and leasing industry.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual earnings generated by cyclists in Cedar Rapids-Iowa City to be about $100 million. The largest impact is on workers in the retail trade industry, who earn $43 million due to cyclists in Cedar Rapids-Iowa City. Figure 34 shows the annual earnings generated by cyclists broken down by industry.

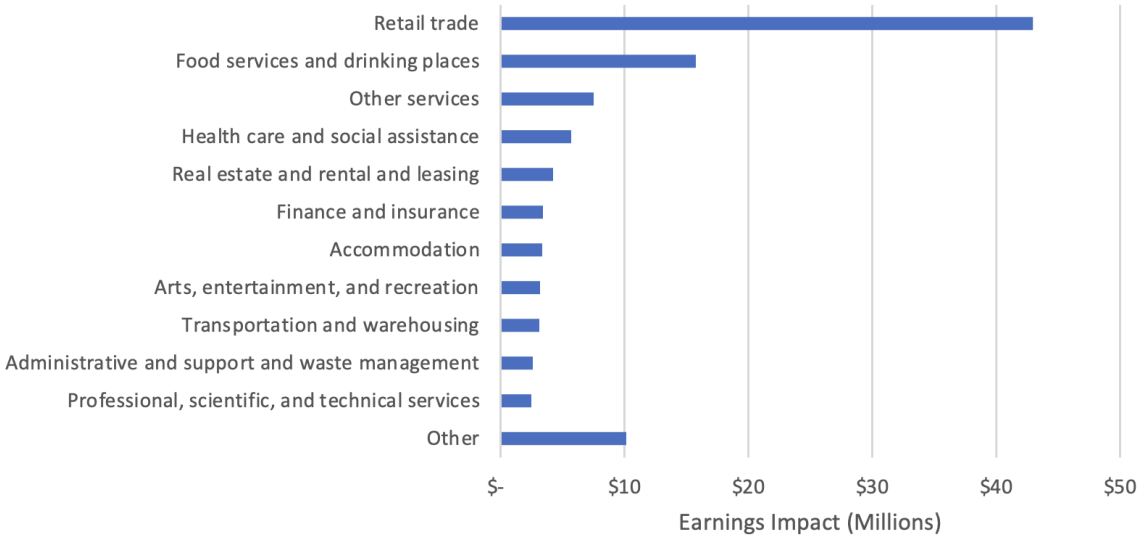

Figure 34: Annual earnings impact of cyclists in Cedar Rapids-Iowa City by industry

Workers in the retail sector will gain the most earnings of any sector, enjoying 41% of the total annual earnings generated by cyclists in Cedar Rapids-Iowa City. Workers in the food and drinking places industry also earn $16 million per year due to economic activity generated by cyclists in the region.

Des Moines-Ames

The Des Moines-Ames region makes up Iowa Regional Planning Affiliation 10, comprising Boone, Dallas, Jasper, Madison, Marion, Polk, Story, and Warren counties. We estimate the Des Moines-Ames region is home to about 250,000 cyclists. About 60% of these are occasional riders, though we still estimate the region is home to about 100,000 people who ride at least moderately (twice a month or more).

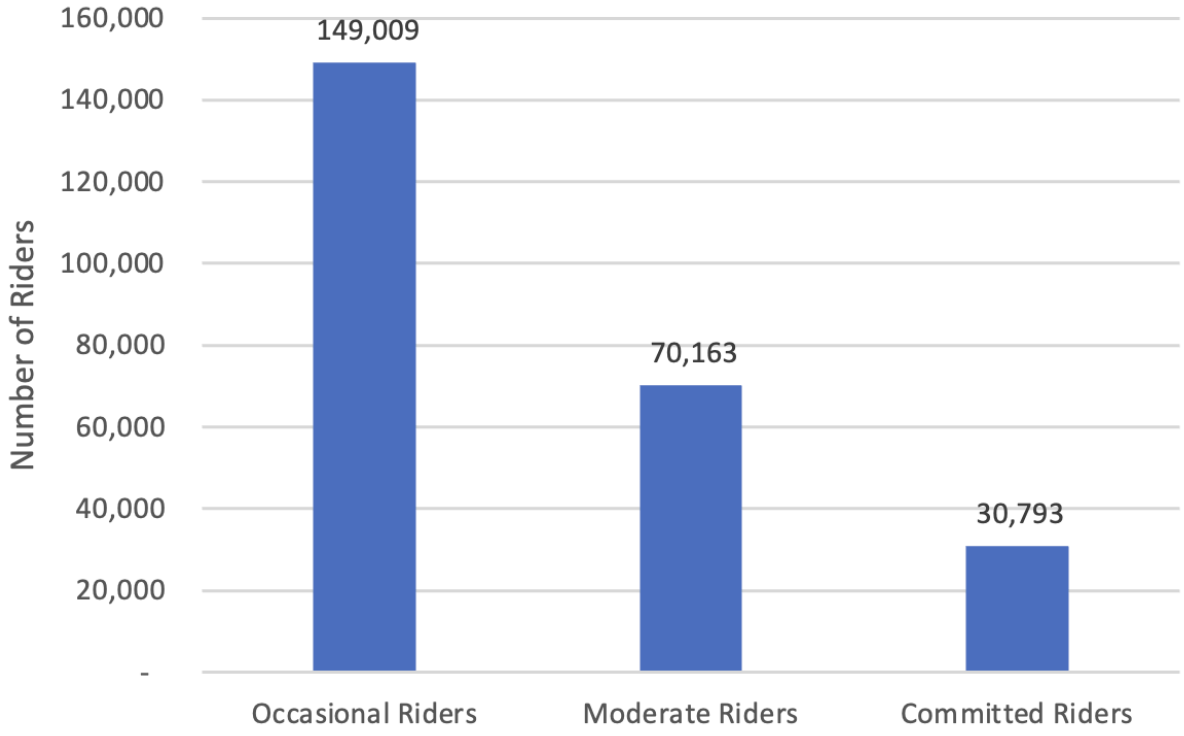

Figure 35: Des Moines-Ames is home to about a quarter million cyclists

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual economic impact of bicyclists in Des Moines-Ames to be $420 million. The largest impact is on the region's retail trade industry, which receives an annual economic impact of about $160 million due to spending by bicyclists. Figure 36 shows the impacts broken down by industry for bicyclists in Des Moines-Ames.

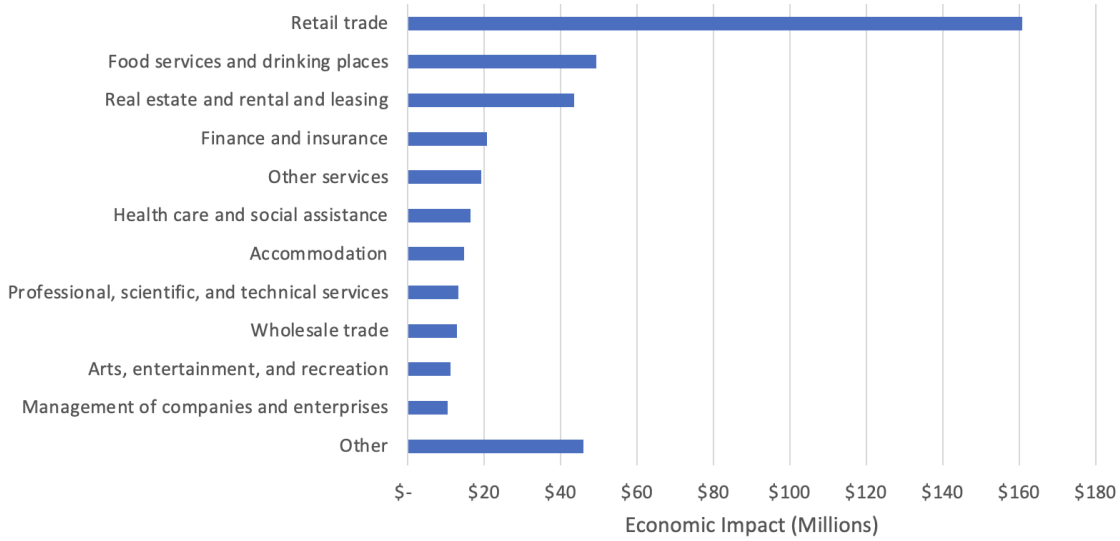

Figure 36: Annual economic impact of cyclists in Des Moines-Ames by industry

Des Moines-Ames's retail trade industry benefits the most from bicycle organizations, enjoying $160 million in economic impact due to cyclists, 38% of the total economic impact of cyclists in the region. We also estimate cyclists in Des Moines-Ames generate $49 million in economic impact for the food services and drinking places industry and over $44 million in economic impact each for the real estate and rental and leasing industry.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate cyclists in Des Moines-Ames support about 6,300 jobs in the Des Moines-Ames region every year. About 42% of jobs supported are in the retail industry, which cyclists support about 2,700 jobs for in Des Moines-Ames. Figure 37 shows the employment impact of cyclists in Des Moines-Ames broken down by industry.

Figure 37: Annual employment impact of cyclists in Des Moines-Ames by industry

The retail industry enjoys the largest employment impact, making up 42% of the jobs supported by cyclists in Des Moines-Ames. We estimate cyclists also support about 1,200 jobs at food services and drinking places and 460 jobs in the real estate and rental and leasing industry.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual earnings generated by cyclists in Des Moines-Ames to be about $210 million. The largest impact is on workers in the retail trade industry, who earn $76 million due to cyclists in Des Moines-Ames. Figure 38 shows the annual earnings generated by cyclists broken down by industry.

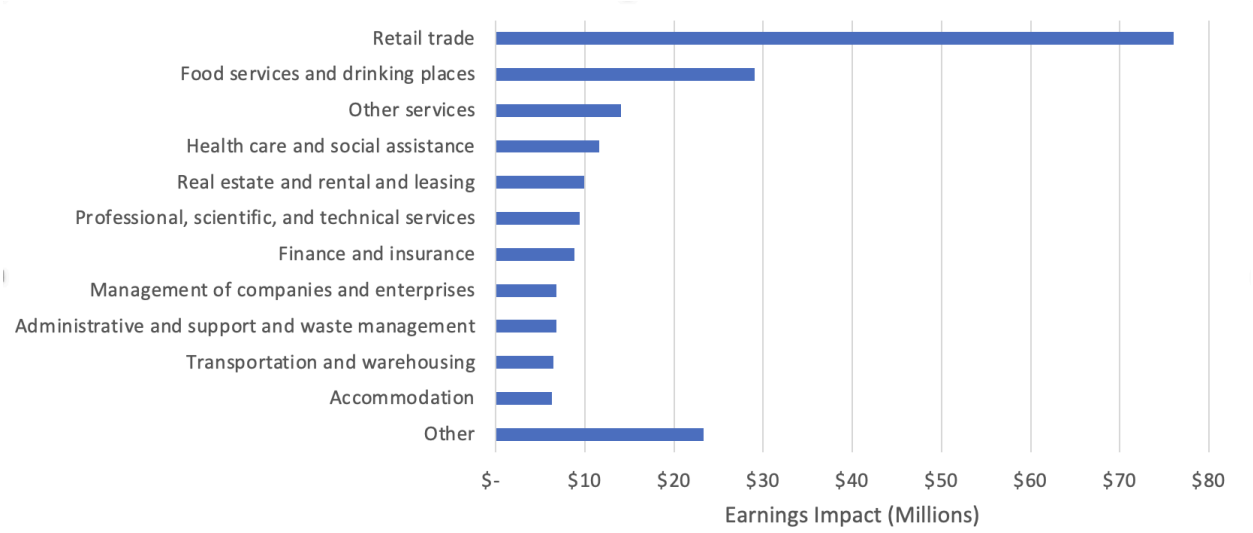

Figure 38: Annual earnings impact of cyclists in Des Moines-Ames by industry

Workers in the retail sector will gain the most earnings of any sector, enjoying 36% of the total annual earnings generated by cyclists in Des Moines-Ames. Workers in the food and drinking places industry also earn over $29 million per year due to economic activity generated by cyclists in the region.

Pottawattamie County

We estimate Pottawattamie County is home to nearly 28,000 cyclists. Over half of these are occasional riders, though we still estimate the county is home to over 11,000 people who ride at least moderately (at least twice a month).

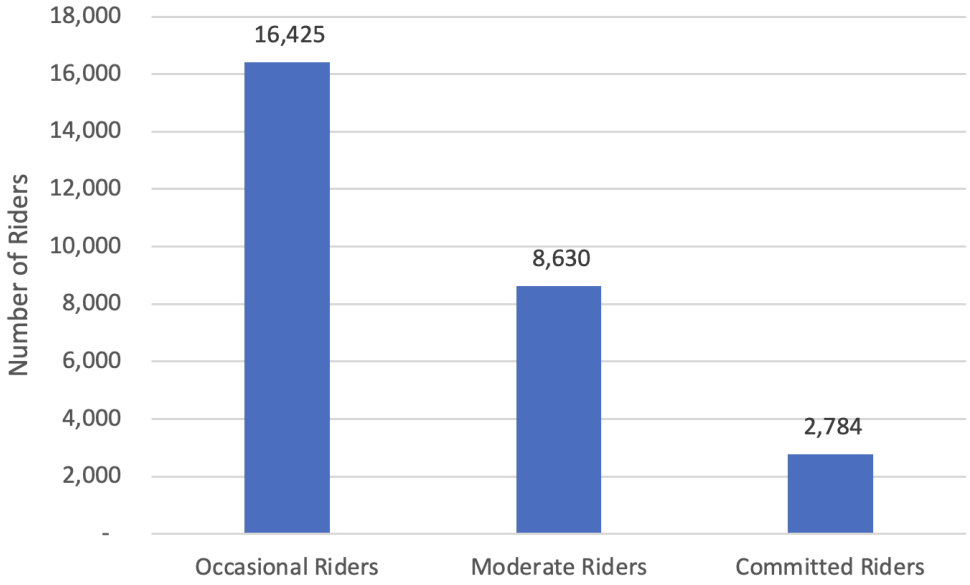

Figure 39: Pottawatamie County is home to nearly 28,000 cyclists

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual economic impact of bicyclists in Pottawattamie County to be $34 million. The largest impact is on the county's retail trade industry, which receives an annual economic impact of about $17 million due to spending by bicyclists in the county. Figure 40 shows the impacts broken down by industry for cyclists in Pottawattamie County.

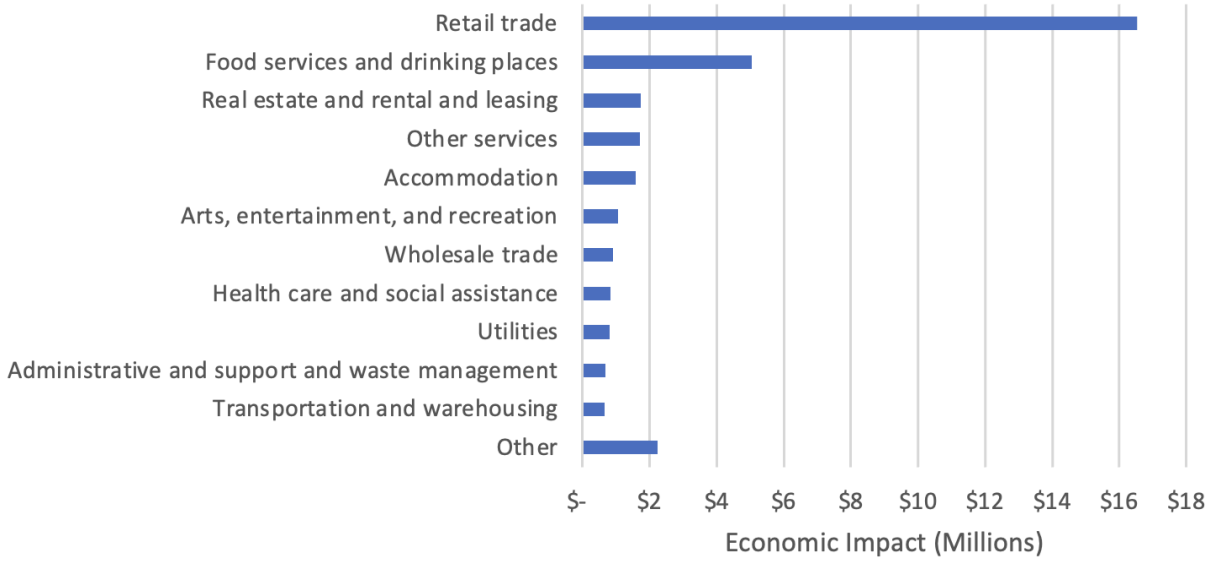

Figure 40: Annual economic impact of cyclists in Pottawattamie County by industry

Pottawattamie County's retail trade industry benefits the most from cyclists, enjoying $17 million in economic impact due to cyclists, nearly half of the total economic impact of cyclists in the county. We also estimate cyclists in Pottawattamie County generate $5.0 million in economic impact for the food services and drinking places industry and over $1.7 million in economic impact each for the real estate and rental and leasing industry and the other service industries.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate cyclists in Pottawattamie County support about 360 jobs every year. About half of jobs supported are in the retail industry, which cyclists support about 170 jobs for in Pottawattamie County. Figure 41 shows the employment impact of cyclists in Pottawattamie County broken down by industry.

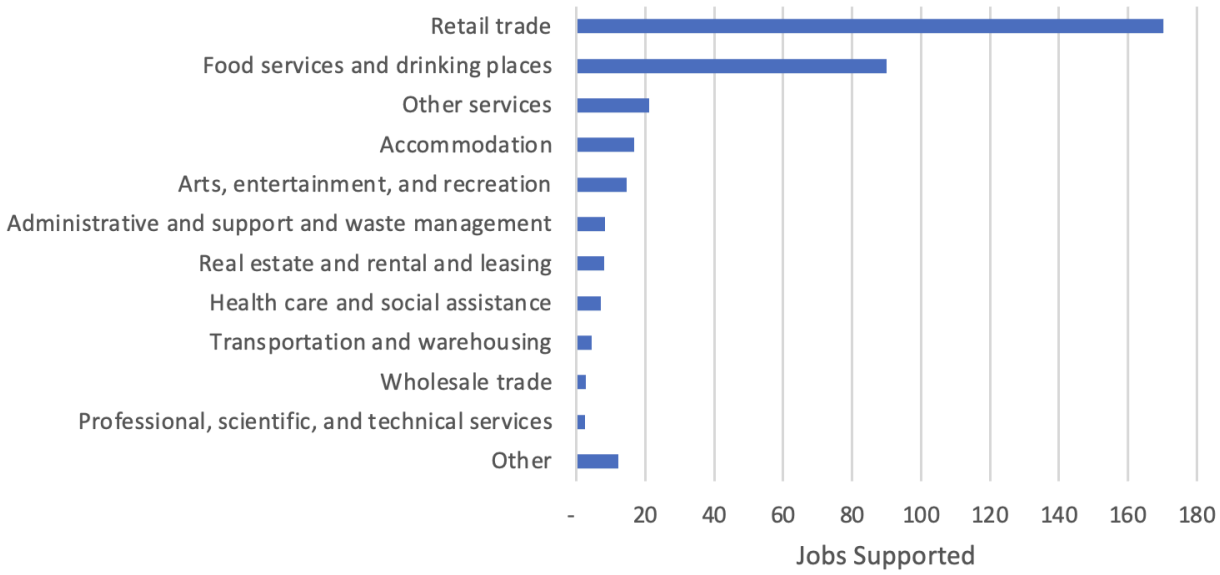

Figure 41: Annual employment impact of cyclists in Pottawattamie County by industry

The retail industry enjoys the largest employment impact, making up half of the jobs supported by cyclists in Pottawattamie County. We estimate cyclists also support about 190 other jobs in the county, ranging from jobs at food services and drinking places to other services, accommodations, and arts, entertainment, and recreation.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual earnings generated by cyclists in Pottawattamie County to be about $11 million. The largest impact is on workers in the retail trade industry, who earn $4.8 million due to cyclists in the county. Figure 42 shows the annual earnings generated by cyclists broken down by industry.

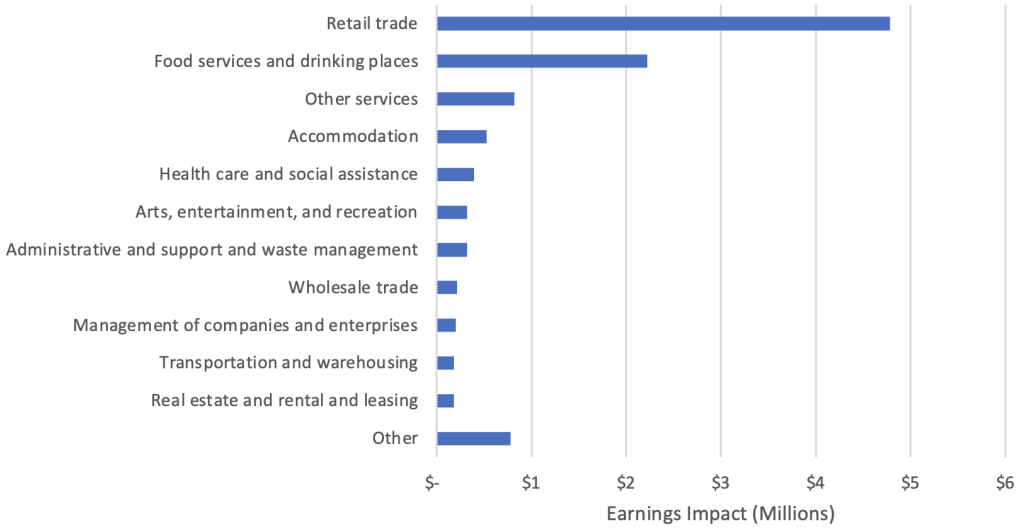

Figure 42: Annual earnings impact of cyclists in Pottawattamie County by industry

Workers in the retail sector will gain the most earnings, enjoying 44% of the total annual earnings generated by cyclists in Pottawattamie County. Workers in the food and drinking places industry also earn over $2 million per year due to economic activity generated by cyclists in Pottawattamie County.

Health Impacts

According to the Centers for Disease Control and Prevention, about a quarter of Iowans report not participating in physical activities or exercise outside of work in the past month.[32] In Iowa, over one in three residents are obese, tying it with Indiana for the #7 highest obesity rate among U.S. states.[33] With low levels of physical activity and higher rates of obesity, Iowans are at a greater risk of developing chronic diseases that will impact their physical health and influence the cost of health care as the prevalence of non-communicable disease continues to grow nationwide.[34]

Obesity is related to higher risk for diabetes, hypertension, cerebrovascular disease, cardiovascular disease, kidney disease, biliary disease, respiratory disease, osteoarthritis, and neoplasms.[35] In Iowa, obesity costs state residents an estimated $4.5 billion in healthcare spending, loss of life, absenteeism, and disability. Increased participation in physical activity will reduce prevalence of non-communicable diseases and the costs associated with these illnesses.

The United States Department of Health and Human Services recommends adults participate in 150 minutes of moderate-vigorous physical activity each week.[36] Active transportation choices like cycling may be used to meet this goal. People who take part in active commuting have been

[32] Centers for Disease Control and Prevention, “Adult Physical Inactivity Outside of Work,” January 2022, Accessed December 20, 2024, https://www.cdc.gov/physical-activity/php/data/inactivity-maps.html.
[33] Centers for Disease Control and Prevention, “Adult Obesity Prevalence Maps,” Accessed December 20, 2024, https://www.cdc.gov/obesity/data-and-statistics/adult-obesity-prevalence-maps.html
[34] Hambleton, Ian R., Roberta Caixeta, Selvi M. Jeyaseelan, Silvana Luciani, and Anselm JM Hennis. "The rising burden of non-communicable diseases in the Americas and the impact of population aging: a secondary analysis of available data." The Lancet Regional Health–Americas 21 (2023).
[35] Woods, Thomas, and Tatjana Miljkovic. "Modeling the economic cost of obesity risk and its relation to the health insurance premium in the United States: a state level analysis." Risks 10, no. 10 (2022): 197.
[36] United States Department of Health and Human Services, “Physical Activity Guidelines for Americans: 2nd Edition,” Accessed December 20, 2024, https://odphp.health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf

found to have a significantly lower risk of all-cause mortality and cardiovascular disease incidence.[37, 38, 39, 40]

To calculate the health impacts of bicycling in Iowa, we rely on data from the Behavioral Risk Factor Surveillance System, the best available source of individual level health data in the United States.[41] We compare morbidity rates of certain health outcomes between people who reported being active cyclists compared to all other Iowans. Specifically, we define active cyclists as people whose self-reported activity level was either “active” or “very active” on a five point scale and who reported that their most frequent form of exercise was biking.

Diabetes

Consistent physical activity is critical for reducing the risk of diabetes.[42] According to the Behavioral Risk Factor Surveillance System, active cyclists in Iowa are 25% less likely to have diabetes compared to other Iowans. If cyclists experienced diabetes at the same rate as the rest of the state, there would be **2,000 additional cases of diabetes in the state per year.**

According to data from the American Diabetes Association, the average person with diabetes spends $12,022 more than a similar individual without diabetes each year.[43] This means that if Iowans did not actively bike, there would be **additional spending of over $25 million on diabetes treatment annually.**

[37] Dinu, Monica, Giuditta Pagliai, Claudio Macchi, and Francesco Sofi. "Active commuting and multiple health outcomes: a systematic review and meta-analysis." Sports medicine 49 (2019): 437-452.
[38] Campbell, Richard, and Margaret Wittgens. "The business case for active transportation." *Gloucester: Go for Green* (2004).
[39] Pérez, Katherine, Marta Olabarria, David Rojas-Rueda, Elena Santamariña-Rubio, Carme Borrell, and Mark Nieuwenhuijsen. "The health and economic benefits of active transport policies in Barcelona." *Journal of Transport & Health* 4 (2017): 316-324.
[40] The League of American Bicyclists, “The New Majority, Pedaling Towards Equity,” Available Online: https://bikeleague.org/sites/default/files/equity_report.pdf
[41] Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2023.
[42] Colberg, Sheri R., Ronald J. Sigal, Jane E. Yardley, Michael C. Riddell, David W. Dunstan, Paddy C. Dempsey, Edward S. Horton, Kristin Castorino, and Deborah F. Tate. "Physical activity/exercise and diabetes: a position statement of the American Diabetes Association." *Diabetes care* 39, no. 11 (2016): 2065.
[43] Parker, Emily D., Janice Lin, Troy Mahoney, Nwanneamaka Ume, Grace Yang, Robert A. Gabbay, Nuha A. ElSayed, and Raveendhara R. Bannuru. "Economic costs of diabetes in the US in 2022." *Diabetes Care* 47, no. 1 (2024): 26-43.

Breast Cancer

Studies have shown that physical exercise can reduce the risk of breast cancer in adults.[44,45] Our analysis found that active cyclists in Iowa were 28% less likely to have breast cancer compared to the rest of the population. If cyclists experienced breast cancer at the same rate as the rest of the state, there would be **160 additional cases of breast cancer per year**.

One study on the treatment costs of breast cancer found that the average cost was over $128,000.[46] This translates to over **$21 million in annual avoided medical costs for breast cancer** that result from active cyclists in Iowa.

Colorectal Cancer

Studies have shown that physical exercise can reduce the risk of colorectal cancer in adults.[47] Our analysis found that active cyclists in Iowa were 77% less likely to have colorectal cancer compared to the rest of the population. This would represent a reduction of **about 100 cases of colorectal cancer across the state per year.**

One study from 2022 found that the median cost of treating colorectal cancer was over $150,000.[48] This means that because of its active bicyclists, **Iowa avoids almost $16 million in colorectal cancer related medical costs per year.**

Overweight

It is well documented that regular exercise is an important factor in maintaining a healthy body weight.[49] Active cyclists in Iowa were 19% less likely to be overweight or obese compared to the rest of the population. If these people were overweight at the same rate as the rest of the population, then over **9,000 more people would be overweight every year.**

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[44] Friedenreich, Christine M., and Anne E. Cust. "Physical activity and breast cancer risk: impact of timing, type and dose of activity and population subgroup effects." *British journal of sports medicine* 42, no. 8 (2008): 636-647.
[45] Patel, Alpa V., Christine M. Friedenreich, Steven C. Moore, Sandra C. Hayes, Julie K. Silver, Kristin L. Campbell, Kerri Winters-Stone et al. "American College of Sports Medicine roundtable report on physical activity, sedentary behavior, and cancer prevention and control." *Medicine and science in sports and exercise* 51, no. 11 (2019): 2391.
[46] Blumen, Helen, Kathryn Fitch, and Vincent Polkus. "Comparison of treatment costs for breast cancer, by tumor stage and type of service." *American health & drug benefits* 9, no. 1 (2016): 23.
[47] Samad, A. K. A., R. S. Taylor, Timothy Marshall, and Mark AS Chapman. "A meta-analysis of the association of physical activity with reduced risk of colorectal cancer." *Colorectal disease* 7, no. 3 (2005): 204-213.
[48] Bhimani, N., G. Y. M. Wong, C. Molloy, N. Pavlakis, C. I. Diakos, S. J. Clarke, M. Dieng, and T. J. Hugh. "Cost of treating metastatic colorectal cancer: a systematic review." *Public Health* 211 (2022): 97-104.
[49] Petridou, Anatoli, Aikaterina Siopi, and Vassilis Mougios. "Exercise in the management of obesity." *Metabolism* 92 (2019): 163-169.

The Centers for Disease Control found that adults with obesity experienced annual medical costs that were $1,861 higher than other adults.[50] If Iowa's active cyclists were overweight at the same rate as the rest of the state, then they would incur **over $25 million in additional annual medical expenses due to obesity.**

High Blood Pressure

Exercise has been shown to improve blood pressure outcomes for individuals with high blood pressure.[51] Active cyclists in Iowa were 5% less likely to have high blood pressure compared to the rest of the population. If these people had high blood pressure at the same rate as the rest of the population, then **almost 1,200 more people would have high blood pressure per year.**

A study found that the median cost for a person with high blood pressure spent to achieve blood pressure control was $3,316.[52] This means that by participating in cycling, **active Iowans are avoiding almost $4 million in medical costs associated with high blood pressure per year.**

Stroke

Although risk of stroke may increase during and shortly after intense exercise, a lifelong commitment to exercise decreases the risk in the long run.[53] Active cyclists in Iowa were 12% less likely to have a stroke compared to the rest of the population. If these people had strokes at the same rate as the rest of the population, then **250 more people would experience a stroke per year.**

According to a 2021 study, the average healthcare cost of a stroke per person is over $140,000.[54] By participating in cycling, **the state of Iowa avoids almost $35 million in medical costs associated with stroke per year.**

Mental Health

The Behavioral Risk Factor Surveillance System asks respondents how many days of the past thirty they experienced poor mental health. They categorize respondents into those that had

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[50] Centers for Disease Control, "Adult Obesity Facts," May 14, 2024. Available Online: https://www.cdc.gov/obesity/adult-obesity-facts/index.html

[51] Pagonas, Nikolaos, Fernando Dimeo, F. Bauer, F. Seibert, F. Kiziler, W. Zidek, and T. H. Westhoff. "The impact of aerobic exercise on blood pressure variability." *Journal of human hypertension* 28, no. 6 (2014): 367-371.

[52] Jacob, Verughese, Sajal K. Chattopadhyay, Anilkrishna B. Thota, Krista K. Proia, Gibril Njie, David P. Hopkins, Ramona KC Finnie, Nicolaas P. Pronk, Thomas E. Kottke, and Community Preventive Services Task Force. "Economics of team-based care in controlling blood pressure: a community guide systematic review." *American journal of preventive medicine* 49, no. 5 (2015): 772-783.

[53] Edward, Justin A., and William K. Cornwell III. "Impact of exercise on cerebrovascular physiology and risk of stroke." *Stroke* 53, no. 7 (2022): 2404-2410.

[54] Rochmah, Thinni Nurul, Indana Tri Rahmawati, Maznah Dahlui, Wasis Budiarto, and Nabilah Bilqis. "Economic burden of stroke disease: a systematic review." *International journal of environmental research and public health* 18, no. 14 (2021): 7552.

zero days of poor mental health, those with one to fifteen days of poor mental health, and those with more than 15 days of poor mental health.[55]

Studies have found that exercise can positively impact an individual's mental health.[56] Compared to non-cyclists in Iowa, active cyclists are 49% less likely to have experienced over 15 days of poor mental health at the time of response. If these cyclists experienced poor mental health at the same rate as the rest of the state, there would be **an additional 5,400 Iowans experiencing poor mental health per year.**

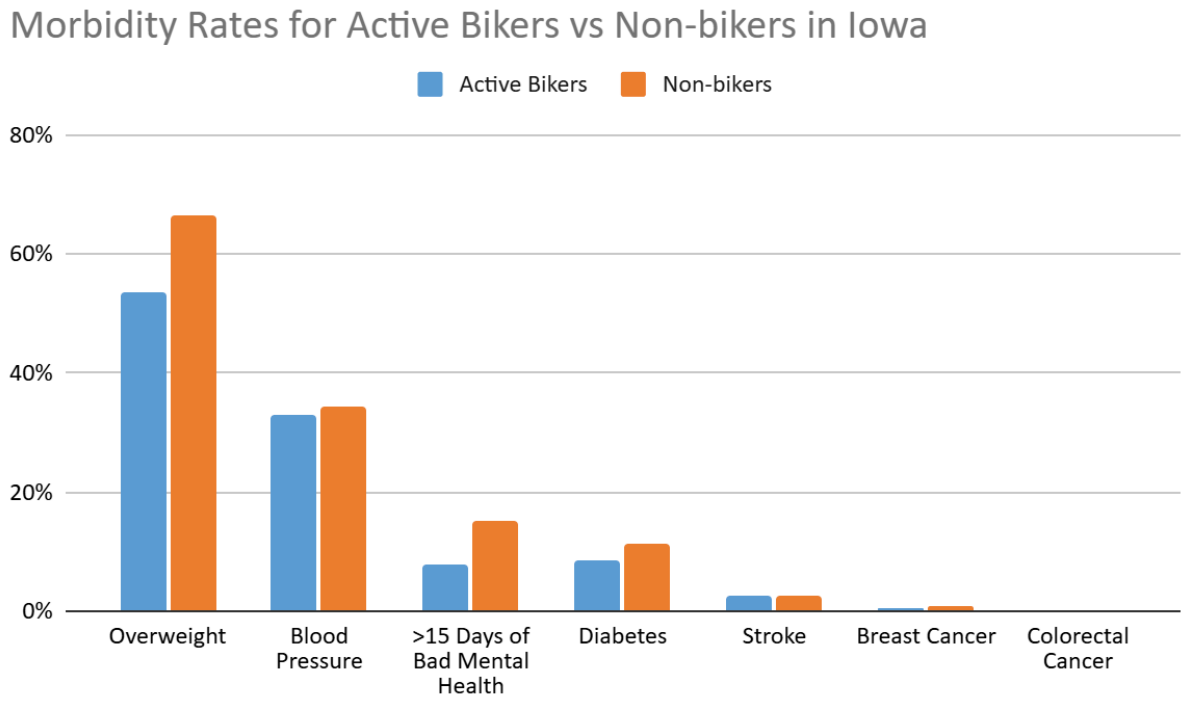

Figure 43: Cyclists have lower risk for a range of health issues.

[55] Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2023.
[56] Mikkelsen, Kathleen, Lily Stojanovska, Momir Polenakovic, Marijan Bosevski, and Vasso Apostolopoulos. "Exercise and mental health." *Maturitas* 106 (2017): 48-56.

Carbon Emissions

People who use bicycles to commute to work also help the environment by avoiding car use.[57, 58, 59, 60] We estimate the impact this has by looking at data from the American Community Survey on the amount of time bicycle commuters spend on their bikes. To calculate what the carbon reductions are from this choice, we make the following assumptions:

1. Each bicycle commuter would drive their own car if they did not commute by bicycle.
2. Each person commutes 177 days each year. This is the number of weekdays between the months of May and November, minus federal holidays. We choose these months because they have an average high temperature of more than 40 degrees fahrenheit.[61]
3. Cyclists average speed is between 10 and 15 miles per hour.
4. Cyclists would have to travel the same distance in their cars as they do on their bikes.
5. The average car emits 400 grams of carbon dioxide per mile traveled.[62]

We provide two scenarios below: one where the average speed is 10 miles per hour, and one where the average speed is fifteen miles per hour. This provides sufficient bounds of likely carbon emissions reductions from bicycling. Overall, we estimate that bicycle commuting in Iowa reduced carbon emissions in the state by 1,000 to 1,523 tons.

Scenario	Average Speed	Reduced CO_2
Low reduction scenario	10 mph	1,015 tons
High reduction scenario	15 mph	1,523 tons

Table 10: Bicycle commuting in Iowa reduced carbon emissions in the state by 1,000 to 1,523 tons.

[57] Dana Yanocha and Sarah Mawdsley, “Making the Economic Case for Cycling,” Institute for Transportation and Development Policy, June 2022. Available Online: https://itdp.org/wp-content/uploads/2022/06/Making-the-Economic-Case-for-Cycling_6-13-22.pdf
[58] Shaheen, Susan, and Adam Cohen. "Shared micromoblity policy toolkit: Docked and dockless bike and scooter sharing." (2019).
[59] Lasley, Phil. "2023 Urban mobility report." (2023).
[60] Liu, Jenny H., and Wei Shi. *Understanding Economic and Business Impacts of Street Improvements for Bicycle and Mobility–A Multi-City Multi-Approach Exploration*. No. NITC-RR-1031-1161. National Institute for Transportation and Communities (NITC), 2020.
[61] U.S. Climate Data, “Climate Des Moines - Iowa,” Accessed December 14, 2024. Available Online: https://www.usclimatedata.com/climate/des-moines/iowa/united-states/usia1761
[62] EPA, “Greenhouse Gas Emissions from a Typical Passenger Vehicle,” Accessed December 14, 2024. Available Online: https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle

Case Studies

Below are case studies on five communities throughout Iowa and the role cycling and trails play within them. We provide information on ridership, estimated spending, and estimated health impacts for the cities of Jefferson, Decorah, Marshalltown, and Mason City and their surrounding counties and the counties along the Wabash Trace Nature Trail.

City of Jefferson

Jefferson is a city of about 4,200 people as of the 2023 American Community Survey.[63] Jefferson is the county seat of Greene County, a rural county nestled between the Des Moines-West Des Moines Metropolitan Statistical Area, the Ames Metropolitan Statistical Area, the Carroll Micropolitan Statistical Area, and the Fort Dodge Micropolitan Statistical Area. Jefferson is the terminus of the Raccoon River Valley Trail, which riders can take south and provides multiple routes to Des Moines.

We estimate that about 2,100 people in Greene County ride recreationally, about 880 of whom ride at least twice a month.

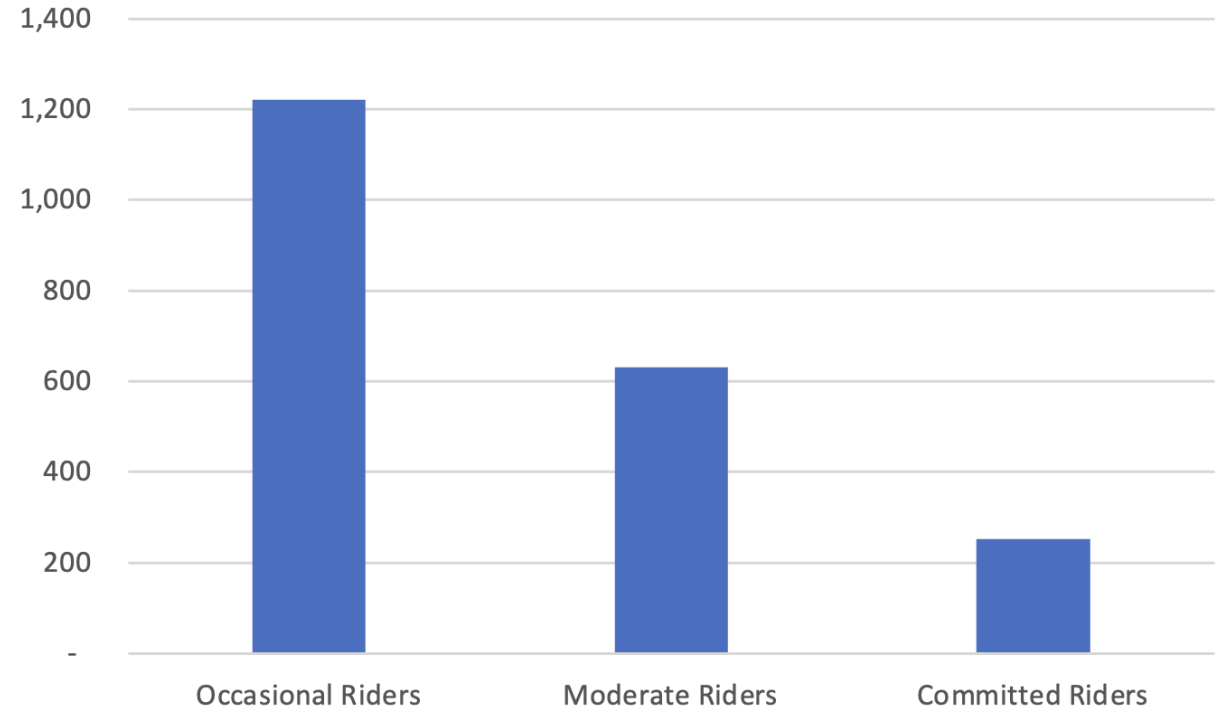

Figure 44: About 2,100 Greene County residents cycle recreationally

[63] United States Census Bureau, "ACS Demographic and Housing Estimates," 2023, Accessed December 27, 2024, https://data.census.gov/table/ACSDP5Y2023.DP05?q=Jefferson%20city,%20Iowa

Using average levels of spending reported by bicyclists in our survey, we can estimate how much cyclists in Greene County spent related to cycling in 2024. We estimate cyclists spent about $3.1 million on cycling in 2024, with about half of that spent on buying and renting bikes and restaurant and bar spending.

Spending Category	Estimated 2024 Spending
Lodging	$175,000
Restaurant & Bar	$690,000
Grocery, Food, and Drink	$250,000
Transportation/Gas	$370,000
Event Admissions and Entertainment	$120,000
Shopping	$370,000
Buying and Renting Bikes	$970,000
Bike Repair/Maintenance	$190,000
Total	**$3.1 million**

Table 11: Estimated spending by cyclists in Greene County, 2024

Adjusting for the share of committed riders in Greene County, we estimate the health benefits of bicycling in Greene County. We estimate that if health issues among active riders equaled that of the general population, there would be 21 more cases of overweight or higher BMI, 12 more cases of chronic poor mental health, and 5 more cases of diabetes.

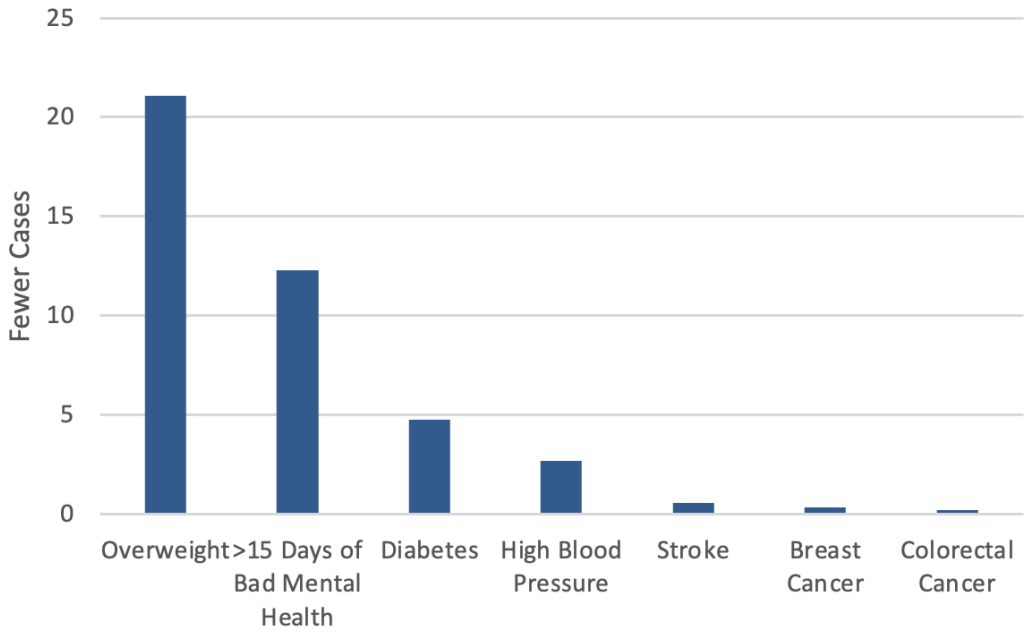

Figure 45: Fewer cases of health conditions associated with cycling in Greene County.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual economic impact of bicyclists in Greene County to be $2.2 million. The largest impact is on the county's retail trade industry, which receives an annual economic impact of about $1.3 million due to spending by bicyclists in the county. Figure 46 shows the impacts broken down by industry for bicyclists in Greene County.

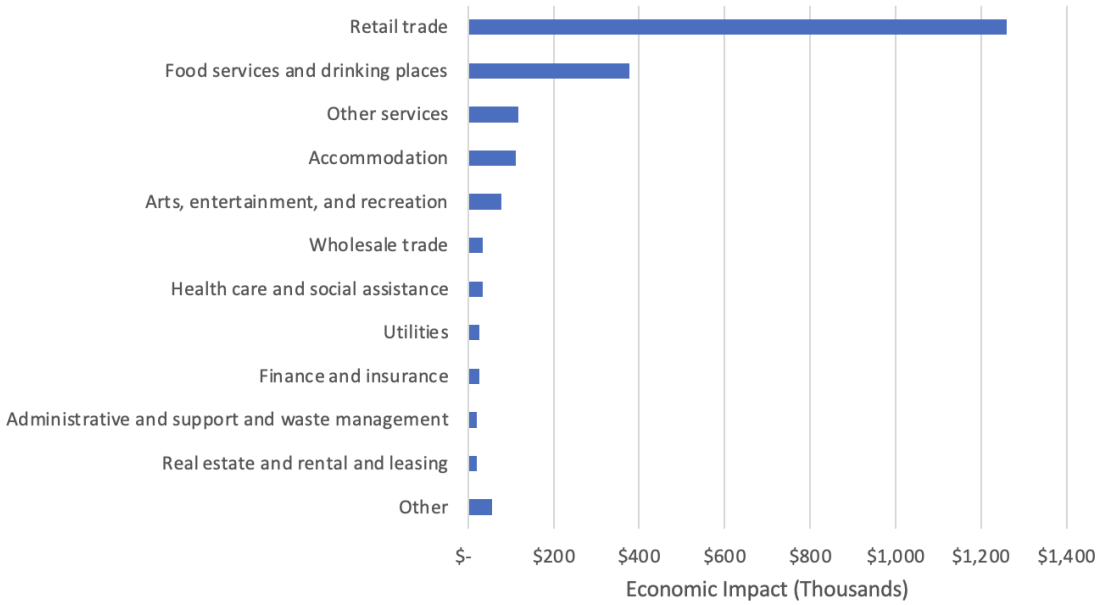

Figure 46: Annual economic impact of cyclists in Greene County by industry

Greene County's retail trade industry benefits the most from cyclists, enjoying $1.3 million in economic impact due to cyclists, over half of the total economic impact of cyclists in the county. We also estimate cyclists in Greene County generate $380,000 in economic impact for the food services and drinking places industry and over $100,000 in economic impact each for the accommodation industry and the other service industries.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate cyclists in Greene County support about 29 jobs every year. Over half of jobs supported are in the retail industry, which cyclists support about 16 jobs for in Greene County. Figure 47 shows the employment impact of cyclists in Greene County broken down by industry.

Figure 47: Annual employment impact of cyclists in Greene County by industry

The retail industry enjoys the largest employment impact, making up over half of the jobs supported by cyclists in Greene County. We estimate cyclists also support about 13 other jobs in the county, ranging from jobs at food services and drinking places to other services, accommodations, and arts, entertainment, and recreation.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total annual earnings generated by cyclists in Greene County to be about $850,000. The largest impact is on workers in the retail trade industry, who earn $450,000 due to cyclists in the county. Figure 48 shows the annual earnings generated by cyclists broken down by industry.

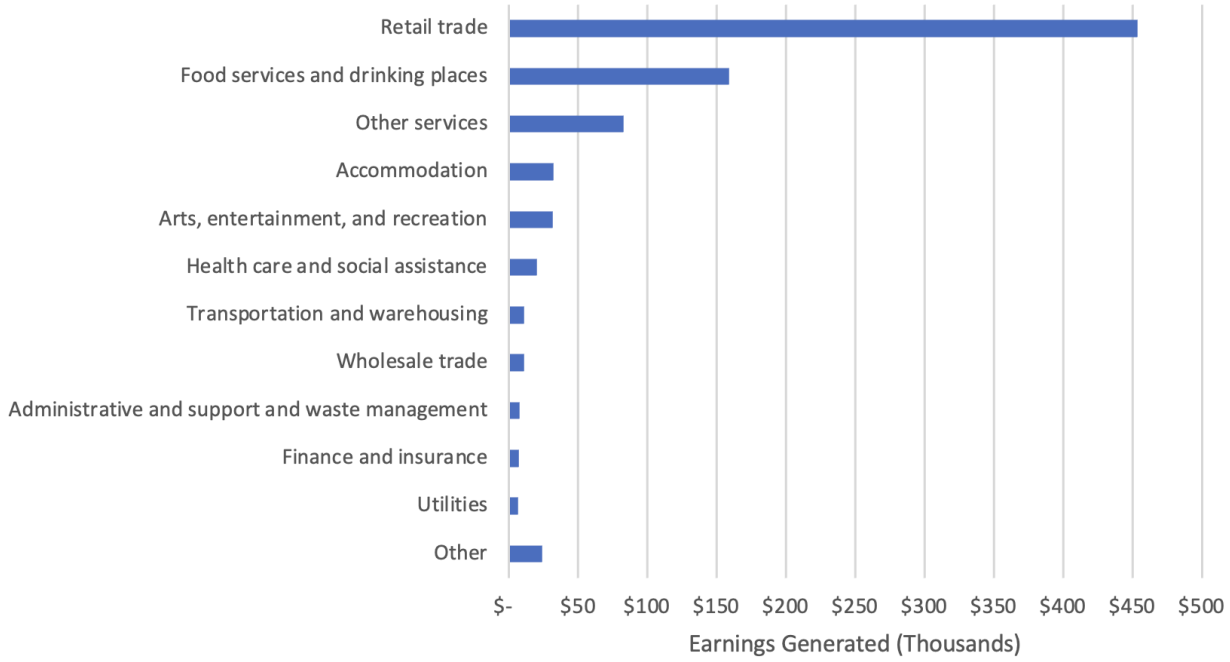

Figure 48: Annual earnings impact of cyclists in Greene County by industry

Workers in the retail sector enjoy the most earnings, enjoying 54% of the total annual earnings generated by cyclists in Greene County. Workers in the food and drinking places industry also earn over $150,000 per year due to economic activity generated by cyclists in Greene County.

Raccoon River Valley Trail Infrastructure Project

Improvements to bicycle infrastructure have been found to lead to increased economic activity due to increased bicycle tourism.[64] They also have been found to promote economic activity.[65] Greene County and Guthrie County are considering a project to replace the 14 miles from Winkelman Switch to Yale. They estimate the project would cost about $5.4 million. Using the Bureau of Economic Analysis's RIMS II Model, we estimate this investment would lead to about **$6.2 million** in gross economic output.

We can also use the RIMS II model to estimate value added, employment, and earnings effects of the project. Using this model, we estimate the total economic impact of this project will be $3.4 million. The largest impact will be on the area's construction industry, which will receive an economic impact of about $2.9 million due to the project. Figure 49 shows the impacts broken down by industry for the project.

[64] California Bicycle Coalition, "Promoting Safe Bicycle Travel Opportunities for Bicycle Tourism and Economic Development," 2021, Available Online: https://www.calbike.org/wp-content/uploads/2022/05/BicycleTourismReport_2021_Final.pdf
[65] Arancibia, Daniel, Steven Farber, Beth Savan, Yvonne Verlinden, Nancy Smith Lea, Jeff Allen, and Lee Vernich. "Measuring the local economic impacts of replacing on-street parking with bike lanes: A toronto (canada) case study." Journal of the American Planning Association 85, no. 4 (2019): 463-481.

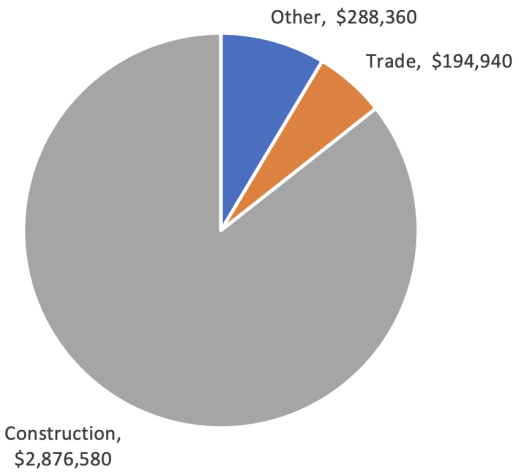

Figure 49: Economic impact of Raccoon River Valley Trail infrastructure investment

The area's construction industry will benefit the most from the investment, enjoying $2.9 million in economic impact due to it, about 86% of the total economic impact of the investment. We also estimate the investment will generate $190,000 in economic impact for trade industries and $290,000 in economic impact for other industries.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the infrastructure investment will support about 25 jobs. Most jobs supported are in the construction industry, which the project will support about 21 jobs for. Figure 50 shows the employment impact of the project.

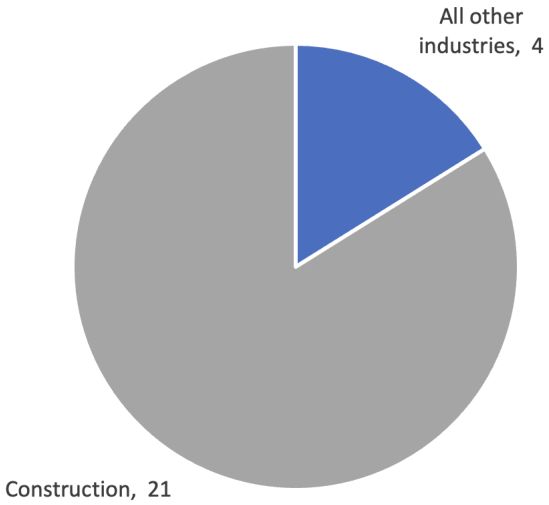

Figure 50: Employment impact of Raccoon River Valley Trail infrastructure investment

The construction industry will enjoy the largest employment impact, making up 21 of the 25 jobs supported by the investment. We estimate the investment will also support about 4 other jobs in the county, most likely in the retail trade and health care and social assistance industries.

Using the Bureau of Economic Analysis's RIMS II Model, we estimate the total earnings generated by Raccoon River Valley Trail infrastructure investment to be about $1.4 million. The largest impact is on workers in the construction industry, who will earn $1.2 million due to Raccoon River Valley Trail infrastructure investment. Figure 51 shows the projected earnings generated by Raccoon River Valley Trail infrastructure investment.

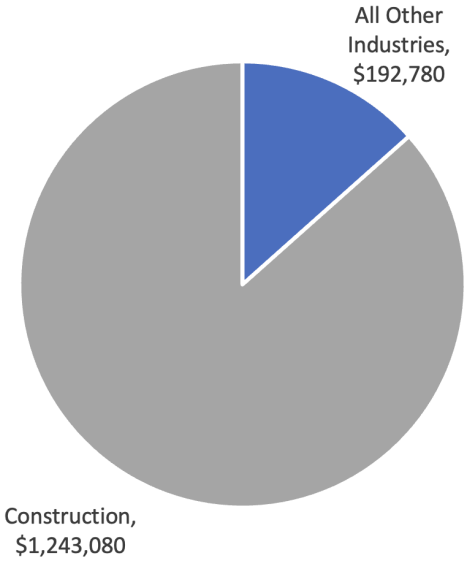

Figure 51: Earnings impact of Raccoon River Valley Trail infrastructure investment

Workers in the construction sector will gain the most earnings, enjoying 87% of the total earnings generated by Raccoon River Valley Trail infrastructure investment. Workers in other industries will also earn about $190,000 from the investment, with most going to workers in the health care and social assistance, retail trade, transportation and warehousing, professional, scientific, and technical services, and other service industries.

If investment in the trail increases recreational cycling in the county, this investment would have economic benefits for years to come. Communities with significant investments in bicycling infrastructure have been found to have economic benefits that outweigh costs in the form of health care and fuel savings.[66] One study of a new bike path estimated a 38% increase in bicycling after its construction.[67] To estimate the impact of bicycling investments, we present scenarios where recreational bicycling increases by 10%, 25%, and 50% due to local investments and the associated economic impacts.

[66] Gotschi, Thomas. "Costs and benefits of bicycling investments in Portland, Oregon." Journal of Physical Activity and Health 8, no. s1 (2011): S49-S58.
[67] Cohen, Deborah, Amber Sehgal, Stephanie Williamson, Daniela Golinelli, Nicole Lurie, Thomas L. McKenzie, and Peter Capone-Newton. "Impact of a new bicycle path on physical activity." (2008).

Recreational Cycling Scenario	Additional Annual Economic Impact	Additional Annual Jobs Supported	Additional Annual Earnings Generated
10% Increase	$220,000	3	$85,000
25% Increase	$540,000	7	$210,000
50% Increase	$1.1 million	14	$420,000

Table 12: Estimated increases in economic activity due to increased cycling in Greene County

Greene County's gross domestic product in 2017 chained dollars has grown about 7.6% from 2013 to 2023, a growth rate less than half as much as the state as a whole, which grew 18.1% over that same time period.[68] As of 2023, Greene County's gross domestic product was about $680 million.

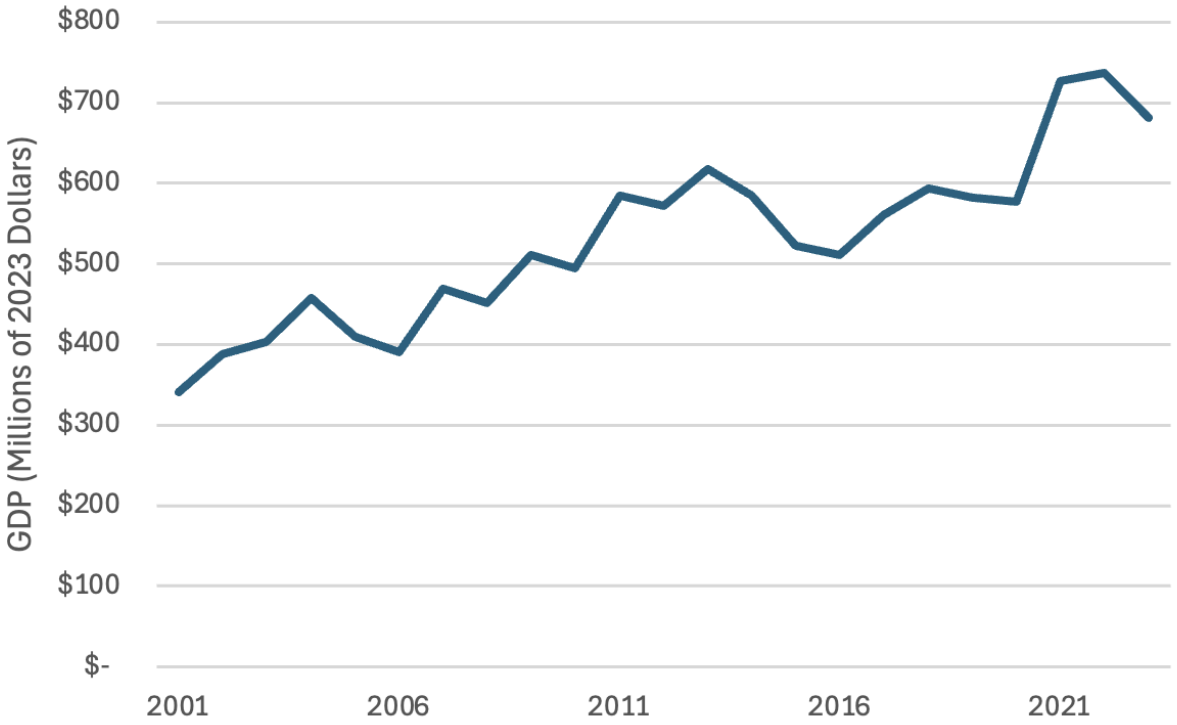

Figure 52: Greene County's economic growth has been sluggish over past decade

[68] Bureau of Economic Analysis, "Regional Data: GDP and Personal Income," Accessed December 27, 2024, https://apps.bea.gov/itable/?ReqID=70&step=1&_gl=1*12xnvly*_ga*MTkwMDM5OTQyOS4xNzI0MjcyNjc5*_ga_J4698JNNFT*MTczNTMxMDE0MC4xOS4xLjE3MzUzMTEwNTIuNTQuMC4w#eyJhcHBpZCI6NzAsInN0ZXBzIjpbMSwyOSwyNSwzMSwyNiwyNywzMF0sImRhdGEiOltbIlRhYmxlSWQiLCI1MzMiXSxbIk1ham9yX0FyZWEiLCI0Il0sWyJTdGF0ZSIsWyIxOTAwMCJdXSxbIkFyZWEiLFsiMTkwMDAiXV0sWyJTdGF0aXN0aWMiLFsiLTEiXV0sWyJVbml0X29mX21lYXN1cmUiLCJMZXZlbHMiXSxbIlllYXIiLFsiLTEiXV0sWyJZZWFyQmVnaW4iLCItMSJdLFsiWWVhcl9FbmQiLCItMSJdXX0=

Over the past five years, Greene County's economy has grown by $88 million in 2023 dollars. If Greene County increased bicycling by as much as one of the above scenarios over a five-year period, it would contribute the equivalent of 0.2% to 1.2% of Greene County's past five years of total economic growth to the county economy.

City of Decorah

Decorah is a city of about 7,600 people as of the 2023 American Community Survey.[69] Decorah is the county seat of Winneshiek County, a rural county in the northeast corner of the state. Decorah is served by the Trout Run Trail, which circumnavigates the city, a small half-mile trail outside of Luther College, and a 20-mile trail connecting the nearby towns of Cresco, Ridgeway, and Calmar. Last year, Luther College was awarded a Bicycle Friendly University silver award by the League of American Bicyclists.[70] Decorah is currently building 6 new miles of singletrack for mountainbiking, hiking and trail running as part of its Carlson Park project and is considering bike infrastructure in its Heivly Street Project.[71,72]

We estimate that about 4,800 people in Winneshiek County ride recreationally, about 2,000 of whom ride at least twice a month.

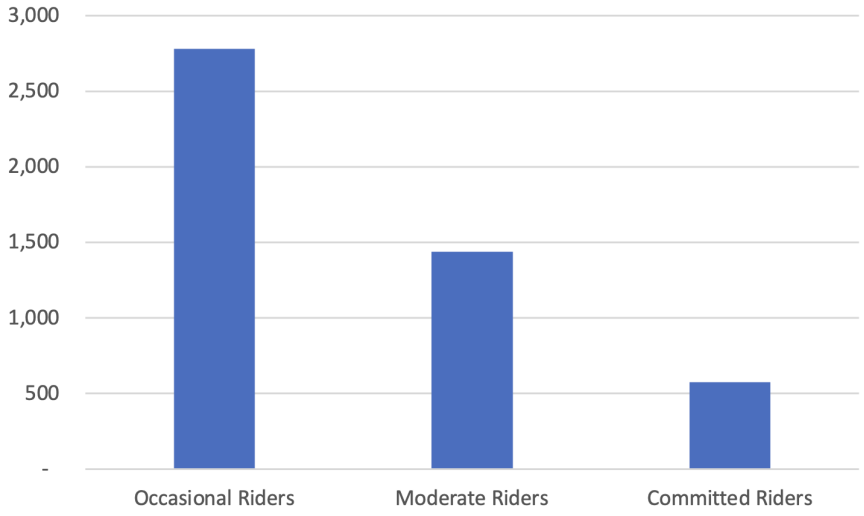

Figure 53: About 4,800 Winneshiek County residents cycle recreationally

[69] United States Census Bureau, "ACS Demographic and Housing Estimates," 2023, Accessed December 30, 2024, https://data.census.gov/table/ACSDP5Y2023.DP05?q=Decorah%20city,%20Iowa
[70] Luther College. "Luther students, faculty pave the way for bike friendly campus award." November 5, 2024. Accessed January 21, 2025. https://www.luther.edu/news/luther-students-faculty-pave-the-way-for-bike-friendly-campus-award
[71] Decorah Parks & Recreation. "What's that Park Project?" Accessed January 21, 2025. https://decorahnews.com/news/12946/council-considers-parking-reforms-and-approves-heivly-street-redesign-for-2025/
[72] Decorah News. "Council Considers Parking Reforms and Approves Heivly Street Redesign for 2025." Sep 26, 2024. Accessed January 21, 2025. https://decorahnews.com/news/12946/council-considers-parking-reforms-and-approves-heivly-street-redesign-for-2025/

Using average levels of spending reported by bicyclists in our survey, we estimate how much cyclists in Winneshiek County spent related to cycling in 2024. We estimate cyclists spent about $7.1 million on cycling in 2024, with about half of that spent on buying and renting bikes and restaurant and bar spending.

Spending Category	Estimated 2024 Spending
Lodging	$400,000
Restaurant & Bar	$1.6 million
Grocery, Food, and Drink	$580,000
Transportation/Gas	$850,000
Event Admissions and Entertainment	$280,000
Shopping	$840,000
Buying and Renting Bikes	$2.2 million
Bike Repair/Maintenance	$440,000
Total	**$7.1 million**

Table 13: Estimated spending by cyclists in Winneshiek County, 2024

Adjusting for the share of committed riders in Winneshiek County, we estimate the health benefits of bicycling in Winneshiek County. We estimate that if health issues among active riders equaled that of the general population, there would be 48 more cases of overweight or higher BMI, 28 more cases of chronic poor mental health, and 11 more cases of diabetes.

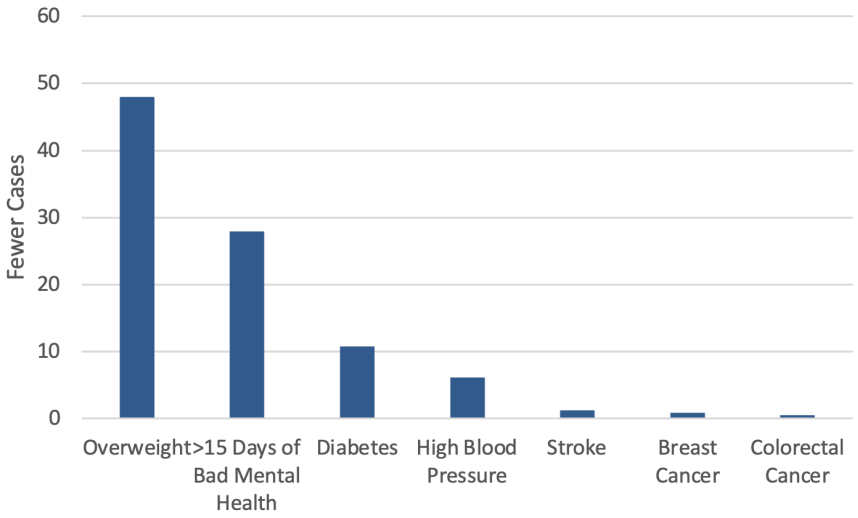

Figure 54: Fewer cases of health conditions associated with cycling in Winneshiek County.

City of Marshalltown

Marshalltown is a city of about 27,000 people as of the 2023 American Community Survey.[73] Marshalltown has a multiuse trail, the Linn Creek Greenbelt Recreation Trail, which stretches across the city following Linn Creek from the Southwest to the Northeast of the city then north to Riverview Park. It also has a trail stretching from downtown to about a mile northwest of town and a short loop trail around Glenwood Lake on South 6th Street. These trails provide interconnection throughout the city for residents.

We estimate that about 12,000 people in the Marshalltown Micropolitan Area ride recreationally, about 5,000 of whom ride at least twice a month.

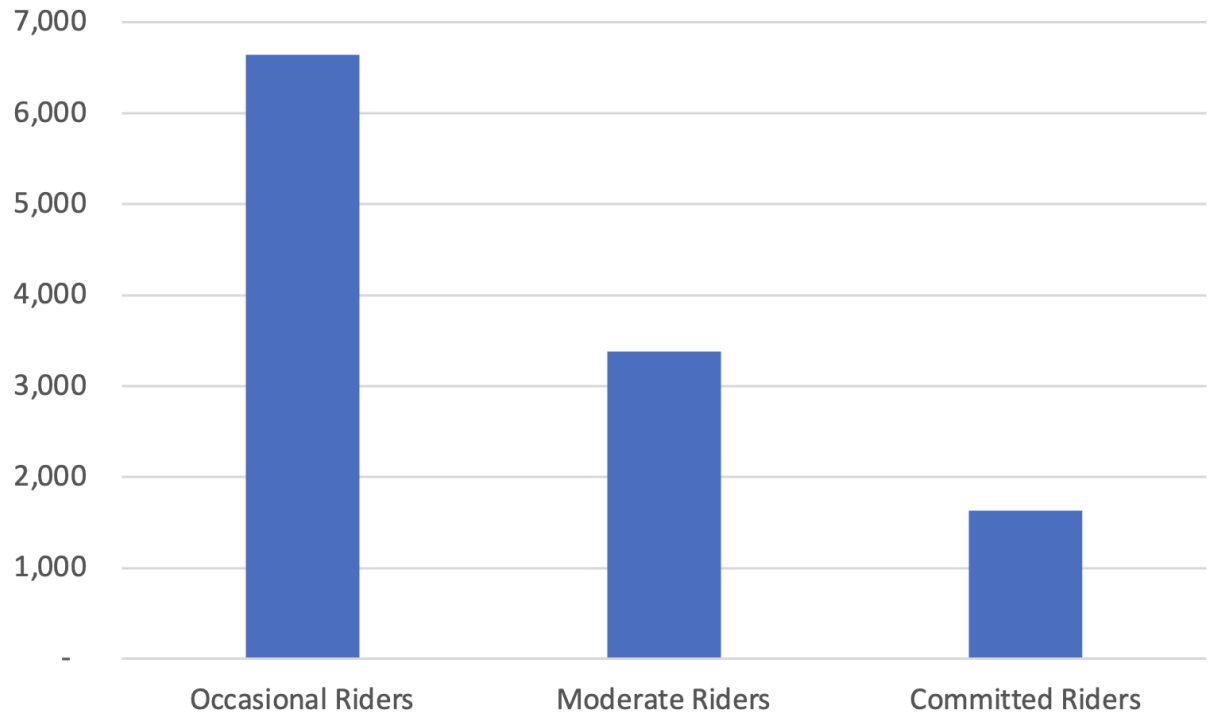

Figure 55: About 12,000 Marshalltown Micropolitan Area residents cycle recreationally.

Using average levels of spending reported by cyclists in our survey, we can estimate how much cyclists in the Marshalltown Micropolitan Area spent related to cycling in 2024. We estimate cyclists spent about $18 million on cycling in 2024, with about half of that spent on buying and renting bikes and restaurant and bar spending.

Spending Category	Estimated 2024 Spending

[73] United States Census Bureau, "ACS Demographic and Housing Estimates," 2023, Accessed December 17, 2024, https://data.census.gov/table/ACSDP5Y2023.DP05?q=Marshalltown%20city,%20Iowa

Lodging	$1.0 million
Restaurant & Bar	$3.9 million
Grocery, Food, and Drink	$1.5 million
Transportation/Gas	$2.1 million
Event Admissions and Entertainment	$700,000
Shopping	$2.1 million
Buying and Renting Bikes	$5.5 million
Bike Repair/Maintenance	$1.1 million
Total	**$18 million**

Table 14: Estimated spending by cyclists in Marshalltown Micropolitan Statistical Area, 2024

Adjusting for the share of committed riders in Marshalltown, we estimate the health benefits of bicycling in the Marshalltown Micropolitan area. We estimate that if health issues among active riders equaled that of the general population, there would be 140 more cases of overweight or higher BMI, 79 more cases of chronic poor mental health, and 31 more cases of diabetes.

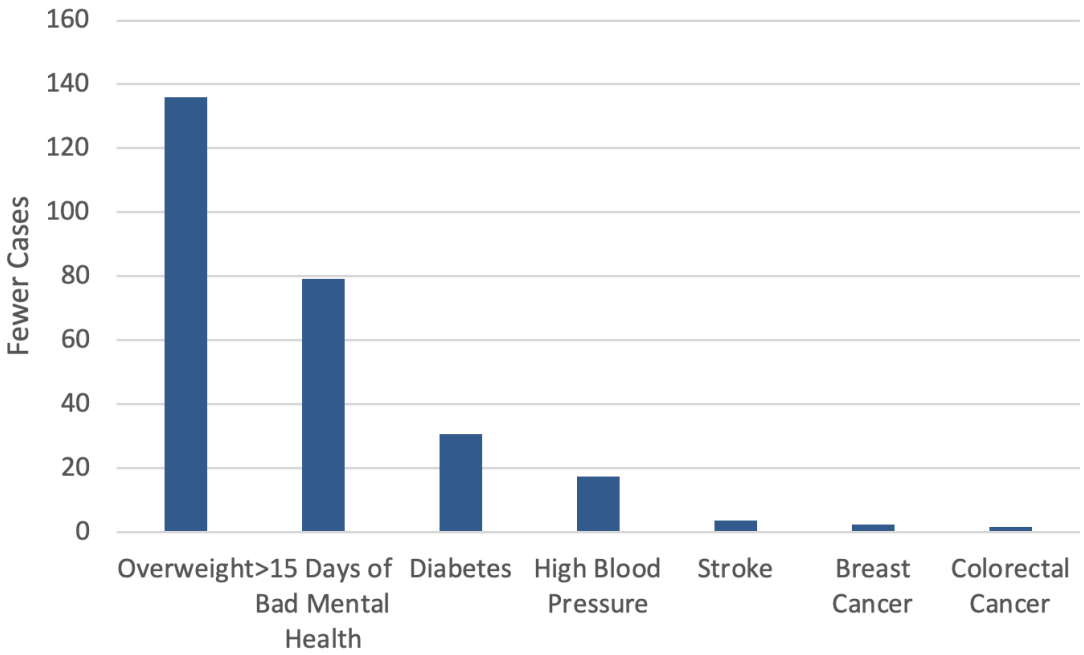

Figure 56: Fewer cases of health conditions associated with cycling in Marshalltown Micropolitan Area.

Mason City

Mason City is a city of about 27,000 people as of the 2023 American Community Survey.[74] Mason City has a series of trails that crisscross the city, connecting neighborhoods to the downtown and to parks such as the Lime Creek Nature Center on the north edge of the city. Residents can also cycle ten miles down the Trolley Trail to Mason City's sister city, Clear Lake. The Shell Rock Green Belt Trail northeast of the city takes riders 11 miles from Plymouth to Nora Springs. There also is a trail that can be taken out of the city southwest to Belmond. These trails provide interconnection throughout the city for residents and recreation opportunities for residents to cycle for exercise and leisure. Mason City has also recently added 20 miles of mountain bike trails.[75]

We estimate that about 15,000 people in the Mason City Micropolitan Area ride recreationally, about 6,300 of whom ride at least twice a month.

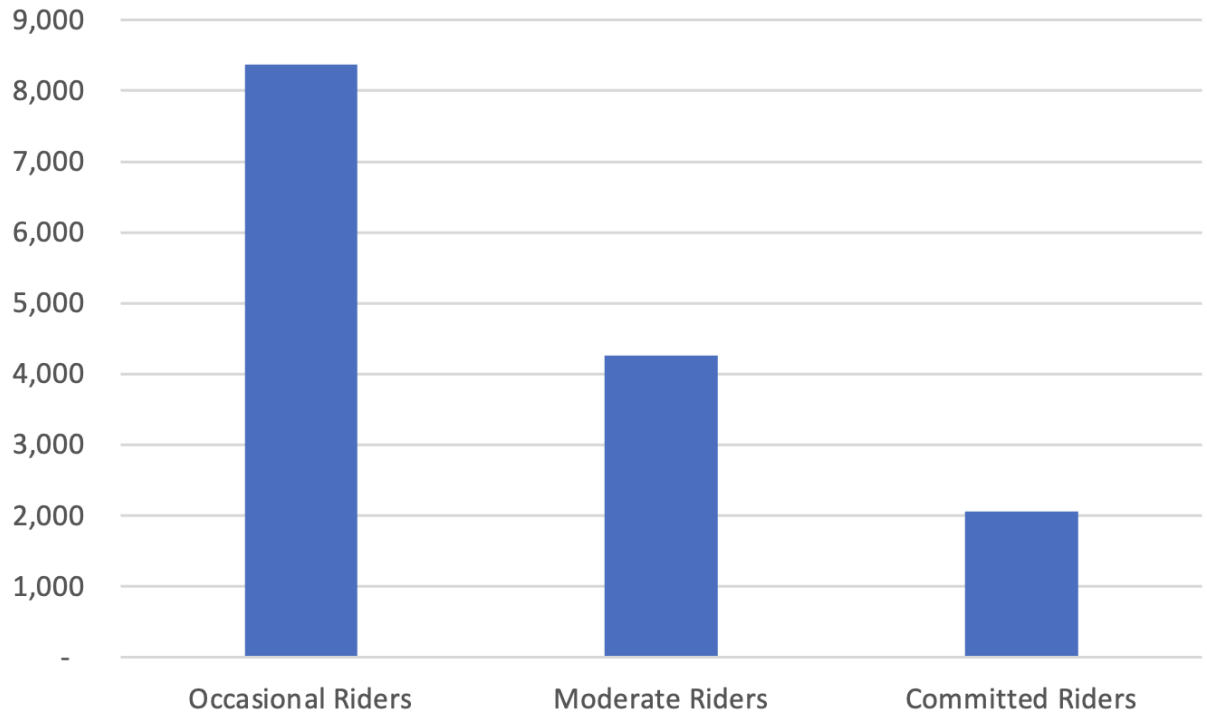

Figure 57: About 15,000 Mason City Micropolitan Area residents cycle recreationally.

Using average levels of spending reported by bicyclists in our survey, we can estimate how much cyclists in the Mason City Micropolitan Area spent related to cycling in 2024. We estimate cyclists spent about $23 million on cycling in 2024, with about half of that spent on buying and renting bikes and restaurant and bar spending.

[74] United States Census Bureau, "ACS Demographic and Housing Estimates," 2023, Accessed December 18, 2024, https://data.census.gov/table/ACSDP5Y2023.DP05?q=Mason%20City%20city,%20Iowa
[75] Visit Mason City. "Discover the Thrill of Prairie Rock Trails." Accessed January 21, 2025. https://visitmasoncityiowa.com/articles/prairie-rock-trails/

Spending Category	Estimated 2024 Spending
Lodging	$1.3 million
Restaurant & Bar	$5.0 million
Grocery, Food, and Drink	$1.9 million
Transportation/Gas	$2.6 million
Event Admissions and Entertainment	$880,000
Shopping	$2.6 million
Buying and Renting Bikes	$7.0 million
Bike Repair/Maintenance	$1.4 million
Total	**$23 million**

Table 15: Estimated spending by cyclists in Mason City Micropolitan Statistical Area, 2024

Adjusting for the share of committed riders in Mason City, we estimate the health benefits of bicycling in the Mason City Micropolitan area. We estimate that if health issues among active riders equaled that of the general population, there would be 170 more cases of overweight or higher BMI, 100 more cases of chronic poor mental health, and 39 more cases of diabetes.

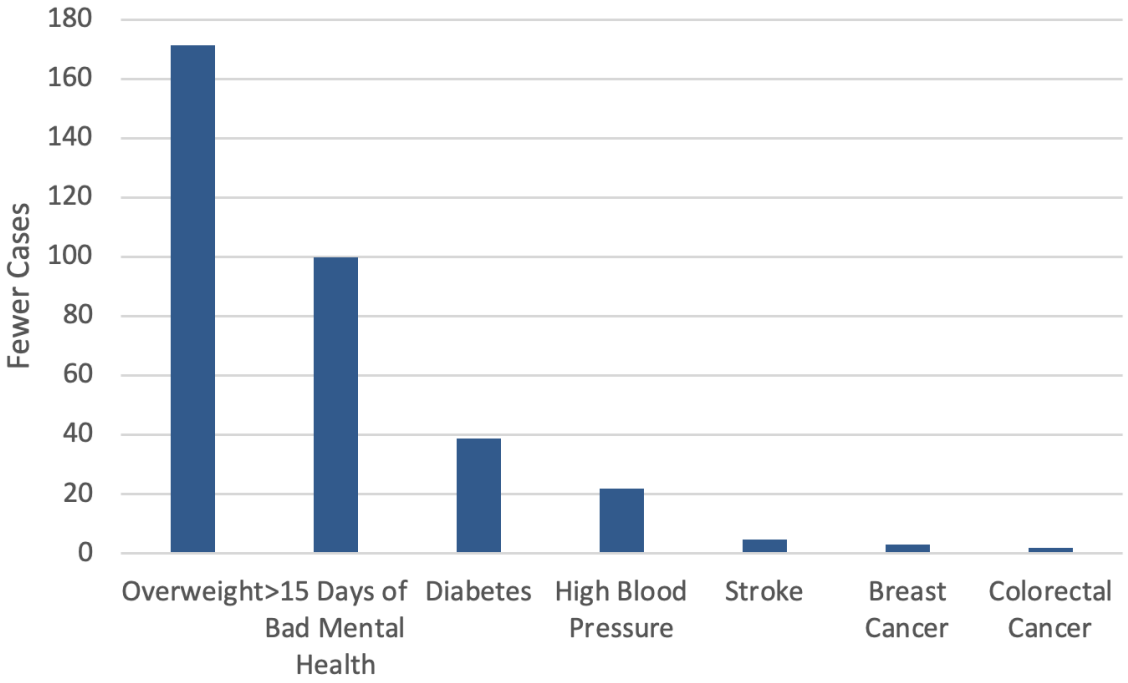

Figure 58: Fewer cases of health conditions associated with cycling in Mason City Micropolitan Area

Wabash Trace Nature Trail

The Wabash Trace Nature Trail runs 62 miles from Council Bluffs, Iowa to Blanchard, Iowa, allowing cyclists to travel from Iowa's western border with Nebraska to its southern border with Missouri. On this route, it passes through eight towns and four counties with a total population of about 130,000.[76] The Rapp Park Connector Trail is currently underway, which will connect the Sportsmans Park trailhead in Shenandoah to Page County Conservation's Rapp Park and the Wabash Trace Cemetery Trailhead in Shenandoah.[77]

We estimate that about 37,000 people in the counties along the Wabash Trail ride recreationally, about 15,000 of whom ride at least twice a month.

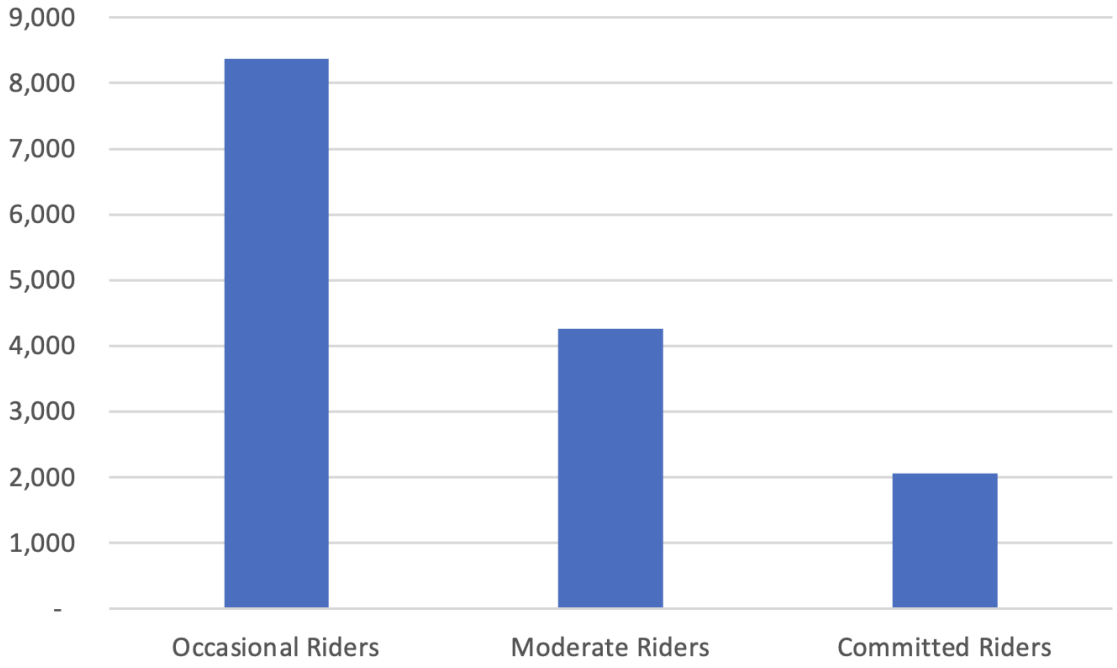

Figure 59: About 37,000 residents of counties along the Wabash Trail cycle recreationally.

Using average levels of spending reported by bicyclists in our survey, we can estimate how much cyclists in counties along the Wabash Trail spent on cycling in 2024. We estimate cyclists spent about $54 million on cycling in 2024, with about half of that spent on buying and renting bikes and restaurant and bar spending.

Spending Category	Estimated 2024 Spending

[76] United States Census Bureau, "S0601: Selected Characteristics of the Total and Native Populations in the United States," 2023, Accessed December 18, 2024 https://data.census.gov/table/ACSST5Y2023.S0601?q=Fremont%20County,%20Iowa&g=050XX00US19129,19145,19155

[77] Wabash Trace Nature Trail, "Rapp Park Connector Trail," Accessed January 21, 2025, https://www.wabashtrace.org/rapp-park

Lodging	$3.0 million
Restaurant & Bar	$12 million
Grocery, Food, and Drink	$4.3 million
Transportation/Gas	$6.6 million
Event Admissions and Entertainment	$2.1 million
Shopping	$6.4 million
Buying and Renting Bikes	$17 million
Bike Repair/Maintenance	$3.3 million
Total	**$54 million**

Table 16: Estimated spending by cyclists in Wabash Trail counties, 2024

Adjusting for the share of committed riders in Wabah Trail counties, we estimate the health benefits of bicycling in Wabash Trail counties. We estimate that if health issues among active riders equaled that of the general population, there would be 320 more cases of overweight or higher BMI, 190 more cases of chronic poor mental health, and 72 more cases of diabetes.

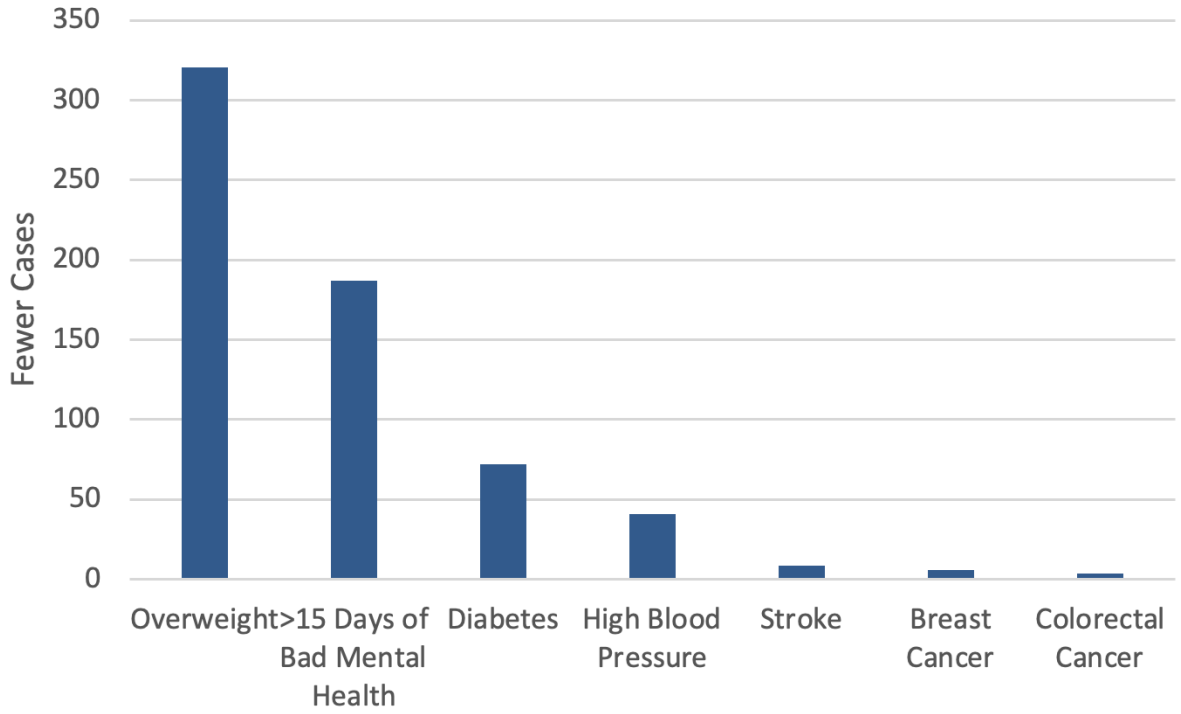

Figure 60: Fewer cases of health conditions associated with cycling in Wabash Trail counties

Appendix A: Understanding Economic Impact Analysis

The Regional Input-Output Modeling System (RIMS II), developed by the Bureau of Economic Analysis, is a tool used by economists to estimate the economic impact of sectors in a region's economy. This appendix provides an overview of the model's methodology and its application in this report.

RIMS II is based on input-output tables that describe how industries interact within an economy. These tables estimate how the output of one industry is used as an input by another. By applying regional data to these tables, the Bureau of Economic Analysis creates tables that reflect a specific region's economic composition.

The model uses multipliers to estimate three types of economic impacts:

1. **Direct Effects.** The immediate effects of spending changes in a region, such as jobs created by a new business.
2. **Indirect Effects.** The impact on local suppliers due to increased demand for goods and services.
3. **Induced Effects.** The ripple effects of increased household income and spending due to the direct and indirect impacts.

RIMS II utilizes data from multiple sources, including national input-output accounts and regional economic data from the Census Bureau and the Bureau of Economic Analysis. The model uses this information to model the unique characteristics of a given region. This customization ensures that the multipliers reflect the regional economy's size, industry mix, and supply chain dynamics.

While RIMS II is a robust tool, it has limitations. It assumes fixed relationships between industries and does not account for economies of scale or changes in productivity brought about by economic change. It does not directly address spending that leaks out of the region, though this is minimized through the use of regional data. It does not account for complex dynamics like changes in wages or prices that might result from increased demand. Despite these limitations, RIMS II remains a valuable tool for providing a baseline understanding of economic impacts.

Appendix B: Project Methodology

In this study, we estimate the scope of the economic and health impacts of bicycling and trails in Iowa. We utilize primary and secondary data to estimate these impacts, employing the Bureau of Economic Analysis's Regional Input-Output Modeling System (RIMS II) to estimate the economic effects and a health modeling framework to assess health outcomes. The approach is designed to capture both direct and indirect contributions of cycling activities to Iowa's economy and population health.

Responses were collected from 2,563 Iowans and 199 out-of-state visitors who engage in bicycling or use trails. Survey responses were gathered from 94 of Iowa's 99 counties, with a focus on urban, suburban, and rural demographics. Surveys included questions on spending habits, frequency of bicycling, and trail usage. Respondents included individuals, retail establishments, organizations, and local government officials.

Secondary Data sources included the U.S. Census Bureau, Iowa Department of Transportation, Centers for Disease Control and Prevention, and other publicly available datasets. These sources provided baseline data on cycling rates, health outcomes, and economic activity in Iowa.

The RIMS II model was used to estimate economic impacts. This system estimates the total economic effects (direct, indirect, and induced) of spending by cyclists, retail establishments, and local government trail maintenance and construction. Spending categories included bicycle purchases, repairs, trail maintenance, food services, lodging, and events. Cyclists were categorized into commuters, recreational riders (occasional, moderate, and committed), and visitors to Iowa. We estimated impacts on gross state product, job creation, earnings, and state tax revenue. Impacts were disaggregated by industry, allowing us to estimate impacts on a range of different industries, including retail, food services, real estate, and construction.

We used data from the Behavioral Risk Factor Surveillance System (BRFSS) to compare health outcomes between active cyclists and the general population. Key health metrics included rates of obesity, diabetes, high blood pressure, mental health, and cancer incidence. We defined "active cyclists" as individuals reporting "active" or "very active" physical activity levels and bicycling as their primary form of exercise. We calculated avoided healthcare costs using average treatment costs for specific conditions, such as diabetes and stroke. We estimated the number of cases of chronic diseases avoided due to cycling and the corresponding reduction in healthcare costs. Mental health benefits were assessed based on self-reported improvements.

Results were cross-referenced with data from similar studies in other states to ensure consistency, but there is some limitation to this analysis. The RIMS II model assumes static relationships and does not account for dynamic changes in productivity or market conditions. Health outcomes rely on self-reported data, which may introduce bias inherent in self-reported

data. Regional leakage was not explicitly modeled, though this is mitigated by the use of state-specific data.

Appendix C: Survey Methodology

Our spending data comes from a survey conducted from July to October 2024. The survey was distributed by the Iowa Bicycle Coalition, targeting recreational riders, commuters, retail bicycle businesses, bicycle organizations and clubs, and local government officials. During this time, we collected information about the economic activity of riders and trail users, bike and trail related businesses, bike and trail related organizations, and local government officials. Survey distribution was carried out by the Iowa Bicycle Coalition, using a convenience sample design.

We received 2,751 total responses to our survey, with 2,553 coming from people who live in Iowa. Of these respondents, 2,581 were riders or trail users, 60 represented bike or trail related businesses, 60 represented bike or trail related organizations, and 50 represented local governments across Iowa.