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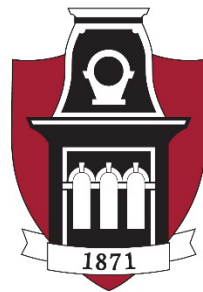
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Estimating the Economic and Health Benefits of Bicycling in Northwest Arkansas

produced for the Walton Family Foundation



UNIVERSITY OF
ARKANSAS®

Sam M. Walton
College of Business
Center for Business & Economic Research

Center for Business and Economic Research
Willard J. Walker Hall 538
Sam M. Walton College of Business
1 University of Arkansas
Fayetteville, Arkansas 72701-1201
(479) 575-4151
Contact: Mervin Jebaraj, Director

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Introduction

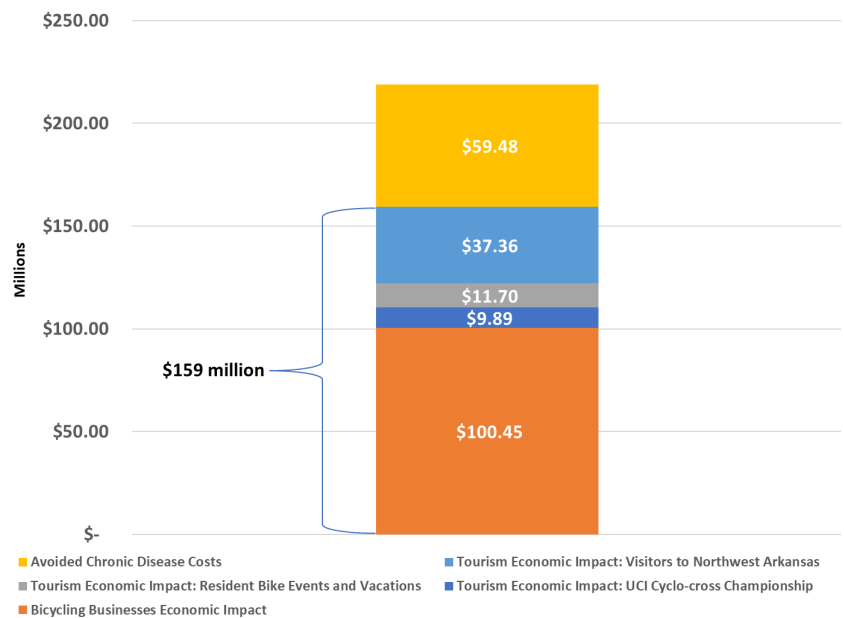
Over the past year, the Center for Business and Economic Research in the Sam M. Walton College of Business at the University of Arkansas conducted an analysis of the economic and health benefits of bicycling in Northwest Arkansas. The study was commissioned by the Walton Family Foundation and built on a previous study completed in 2018. The data and analysis presented in this study will inform regional and state policymakers, funders, and other community stakeholders about the overall return-on-investment from the significant investments in the bicycling ecosystem in Northwest Arkansas. Major highlights of the study were:

- The bicycling ecosystem in Northwest Arkansas generates an economic impact of \$159 million.

- Bicycling participation by Northwest Arkansas residents generates an additional \$59 million in avoided health care costs.

- A third of the residents in Northwest Arkansas reported riding a bike in the past 12 months.

- Close to 41% of riders rode their bikes 3-9 days per month and nearly 12% rode their bikes on 20 or more days per month.



- Businesses that operate in the bicycling ecosystem are a significant driver of economic opportunity in the region, contributing more than \$100 million in economic impact. They supported 743 jobs in Northwest Arkansas and generated \$6 million in state and local taxes.
- Bicycling tourism generated an economic impact of \$59 million, supporting 587 jobs and generated \$4.7 million in state and local tax collections.

Economic Impact of Bicycling in Northwest Arkansas				
Category	Jobs	Labor Income (millions)	State and Local Taxes (millions)	Economic Impact (millions)
Bicycling Tourism	587	\$19.9	\$4.8	\$59.0
Bicycling Businesses	743	\$27.9	\$6.1	\$100.5
Total	1,329	\$47.7	\$10.9	\$159.4

Northwest Arkansas Bicycling Businesses Economic Impact

Bicycling as a sport and recreational activity is not new to Northwest Arkansas, but the increased investments in the past decade which include new paved and soft-surface trail construction, the creation of programs at the Northwest Arkansas Community College to teach trail construction and bicycle maintenance, and the Greenhouse Outdoor Recreation Program at the University of Arkansas that helps businesses in the outdoor economy, have all resulted in building and growing a thriving business ecosystem focused on the various activities that revolve around biking.

The bicycling business ecosystem in Northwest Arkansas is not limited to retail outlets that sell bikes and related accessories but extends to businesses that aid in the bicycling tourism sector in Northwest, the bicycling event/race production sector, the bicycle and bicycle accessory manufacturing sector, and the trail construction and maintenance sector. All these businesses create a sustainable cycling economy that contributes to greater economic growth in the region.

Traditional enumerations of the impact of bicycling may focus on the tourism economic impacts and the health benefits that can be derived from a population that is biking regularly but, given the scale of investments in the bicycling infrastructure in Northwest Arkansas it is important to measure the economic impact of all the businesses that have setup or thrived in this region because of these investments.

Data collected and maintained by the Runway Group indicated that in 2022, there were 109 businesses associated with bicycling operating in Northwest Arkansas. This data also shows that since 2018, 34 cycling-related business and service providers have moved to or launched in Northwest Arkansas, the number of cycling events has grown by 18, and the number of shops that sell, rent, or repair bikes has grown by 17. The 109 bicycling-related businesses in Northwest Arkansas employ a total of 530 individuals in the region. These businesses are categorized by sector in the table that follows.

Table 1: Employment at Bicycling Related Businesses in Northwest Arkansas

Employment at Bicycling Related Businesses in Northwest Arkansas	
Industry Category	Jobs
Sporting Goods Stores	180
Motorcycle, Bicycle, and Parts Manufacturing	106
Civic and Social Organizations	82
Other Heavy and Civil Engineering Construction	44
Other Personal and Household Goods Repair and Maintenance	29
All Other Amusement and Recreation Industries	16
Sporting and Athletic Goods Manufacturing	14
Other Motion Picture and Video Industries	13
Recreational Goods Rental	12
Sports and Recreation Instruction	12
Soft Drink Manufacturing.	8
Other Grocery and Related Products Merchant Wholesalers	6
Promoters of Performing Arts, Sports, and Similar Events with Facilities	4

Sporting and Recreational Goods and Supplies Merchant Wholesalers	3
Internet Publishing and Broadcasting and Web Search Portals	1
Total	530

Source: Runway Group survey and Center for Business and Economic Research calculations.

The economic impact of businesses operating in the bicycling economy was calculated by researchers at the Center for Business and Economic Research using data shown above. The employment at these businesses was allocated to sectors within the IMPLAN input/output model to obtain the overall economic impact including indirect and induced impacts. A detailed description of the IMPLAN input/output model can be found in the Appendix.

The operations of the bicycling businesses created additional economic activity within the Northwest Arkansas region through indirect and induced impacts. The output multiplier for economic activities associated with these business operations was 1.6. This means for every dollar of business operation, the total economic impact generated within Northwest Arkansas was \$1.60. These operations generated an economic impact of more than \$100 million in Northwest Arkansas. These activities directly supported 530 jobs and a total of 743 jobs through indirect and induced effects. Total labor income generated by the bicycling business operations was \$27.9 million. All dollar values are presented in 2023 inflation-adjusted dollars.

Table 2: Bicycling Related Businesses Economic Impact

Bicycling Related Businesses Economic Impact				
Impact	Employment	Labor Income	Value Added	Output
Direct	530	\$15,996,508	\$31,105,029	\$62,275,396 ¹
Indirect	139	\$8,204,025	\$13,414,176	\$26,204,836
Induced	73	\$3,656,207	\$6,942,701	\$11,969,817
Total	743	\$27,856,740	\$51,461,907	\$100,450,049

These business operations and their associated economic impacts contributed significant tax collections that accrued to both the state of Arkansas and the various local governments. According to estimates from the IMPLAN software, the economic activity from bicycling-related businesses generated a total of \$10 million in tax collections, of which more than \$1.4 million went to local governments like cities and counties and \$4.7 million went to the state government.

Table 3: Bicycling Related Businesses Tax Impact

Bicycling Related Businesses Tax Impact				
Impact	County	State	Federal	Total
Direct	\$1,029,213	\$3,268,990	\$2,090,262	\$6,388,466
Indirect	\$209,939	\$781,984	\$1,332,030	\$2,323,953
Induced	\$184,987	\$606,754	\$532,192	\$1,323,933
Total	\$1,424,140	\$4,657,728	\$3,954,484	\$10,036,352

¹ The IMPLAN model generates the direct output, value added, and labor income utilizing the regional output per worker relationships, estimating the dollars of output per employee in a particular industry. Details are available in the appendix.

The bicycling businesses in the region benefit from an active bicycling community in Northwest Arkansas that routinely spends money at their businesses in the form of bicycle purchases, bicycling accessory and maintenance purchases, and expenditures at bicycling events held by regional organizers. Researchers from the Center estimated total household spending on a variety of bicycle-related expenditures in Northwest Arkansas using survey data collected in the 2022 Northwest Arkansas resident survey. The survey asked each respondent to separately report the total their household spent on bicycle purchases in Northwest Arkansas and on bicycle goods, equipment, and maintenance purchases in Northwest Arkansas.

Households in Benton County that purchased a bike and reported riding bikes in the past 12 months had a median expenditure of \$800 on bikes and in Washington County the median expenditure of similar households was \$600. The median expenditure on bicycles from all households in Northwest Arkansas that purchased a bike and reported riding a bike in the last 12 months was \$700.

Among households that did not report riding a bike in the past 12 months but purchased a bike, the median expenditure on bikes was \$250 in Benton County and \$100 in Washington County. The respective median expenditure for all non-bike riding households that purchased a bike in Northwest Arkansas was \$130. Combining the median expenditure from these households, Center researchers estimate that a total of \$19.3 million was spent on purchasing bikes in Northwest Arkansas.

A similar methodology was used to calculate the household spending on bicycling accessories and maintenance. Households in Benton County that spent money on bicycling accessories and maintenance and reported riding bikes in the past 12 months had a median expenditure of \$300 and in Washington County the median expenditure of similar households was \$200. The median expenditure on bicycling accessories and maintenance from all households in Northwest Arkansas that reported riding a bike in the last 12 months was \$200.

Among households that did not report riding a bike in the past 12 months but purchased bicycling accessories, the median expenditure on accessories and maintenance was \$63 in Benton County and \$100 in Washington County. The respective median expenditure for all non-bike riding households that had bicycling accessories and maintenance expenditures in Northwest Arkansas was \$100. Combining the median expenditure from these households, Center researchers estimate that a total of \$14.3 million was spent on purchasing bikes in Northwest Arkansas.

In total, 16.5% of regional residents reported purchasing a bike in the last 12 months. These respondents were also asked where they purchased these bikes. 30% of them responded that they purchased their bikes at local stores, 25% purchased bikes at large retailers, 25% from online sources, 8% from sporting goods stores, and 25% purchased bikes from other sources. The numbers add up to more than 100% as respondents were allowed to select multiple options. In addition to bicycle purchases, a third of Northwest Arkansas residents reported spending money on accessories or maintenance. In total, Northwest Arkansas residents spent \$33.6 million on bicycles, accessories and maintenance and this money flowed through the many bicycling-related businesses discussed earlier in this section and contributed towards the \$100 million economic impact from the operations of bicycling businesses.

Table 4: Northwest Arkansas Resident Spending on Bicycles and Bicycle Accessories

Northwest Arkansas Resident Spending on Bicycles and Bicycle Accessories by Bike Riders						
	Households Purchasing Bikes	Median Expenditures on Bikes per Household	Total Bike Expenditures	Households Purchasing Bicycling Accessories	Median Expenditures on Bicycling Accessories per Household	Total Bicycling Accessory Expenditures
Benton County	14,297	\$800	\$11,437,588	29,673	\$300	\$8,901,896
Washington County	10,211	\$600	\$6,126,621	20,422	\$200	\$4,084,414
Northwest Arkansas	24,508	\$700	\$17,564,209	50,095	\$200	\$12,986,310

Northwest Arkansas Resident Spending on Bicycles and Bicycle Accessories by Non-Bike Riders						
	Households Purchasing Bikes	Median Expenditures on Bikes per Household	Total Bike Expenditures	Households Purchasing Bicycling Accessories	Median Expenditures on Bicycling Accessories per Household	Total Bicycling Accessory Expenditures
Benton County	5,935	\$250	\$1,480,682	10,790	\$63	\$674,386
Washington County	3,017	\$100	\$301,690	6,266	\$100	\$626,586
Northwest Arkansas	8,951	\$130	\$1,782,372	17,056	\$100	\$1,300,972

Northwest Arkansas Bicycling Tourism Economic Impact

Northwest Arkansas has more than 300 miles of top-tier bike trails, offering cyclists from around the nation and globe one of the best destinations for a bicycling-oriented vacation. The terrain of the region, combined with significant multi-year investments in bicycling infrastructure, and events such as the International Mountain Bicycling Association (IMBA) World Summit in 2016, the Red Bull Pump Track World Championship in 2019, the 2022 UCI Cyclo-cross World Championships continues to generate bicycle tourism trips to Northwest Arkansas. In this section, researchers estimate the economic impacts of bicycle tourism from three sources: 1- the UCI Cyclo-cross World Championship in 2022, 2- visits from non-event related out-of-region bicycle tourists, and 3- the bicycling vacations and event participation by Northwest Arkansas residents.

2022 Walmart UCI Cyclo-cross World Championships

In January 2022, Northwest Arkansas hosted the 2022 Walmart UCI Cyclo-Cross World Championships at Centennial Park in Fayetteville. While it was the 73rd edition of the cyclo-cross world championship it was only the second time that the championship was hosted outside of Europe. The main event held from January 27-30, featured six championship races for elite men and women riders, under-23 men and women riders, and junior men and women riders. Athletes participating in the competition represented their home countries, much like the Olympics, and 21 nations were represented at the competition. The competition was broadcast live to an international audience.

In addition to the excitement and attention, hosting this event generated significant economic impacts to the Northwest Arkansas region from the investments in bicycling infrastructure, expenditures made by organizers to put on a successful event, expenditures from the visitors and participants who generated new economic activity in the region, and positive engagement with participants, visitors, and a global media audience.

The most significant impact from hosting the 2022 Cyclo-cross World Championships came from the economic activity generated by visitors to the region. These visitors were spectators, race participants and coaches, race officials, media personnel and event volunteers. The Center for Business and Economic Research and Experience Fayetteville organized a survey of each of these categories of visitors during and immediately after the event to collect key data points needed to produce an economic impact analysis. These data points included identifying the number of unique visitors and their expenditures while in Northwest Arkansas.

Over 17,500 people attended the three-day event, which included a one-day free event and two days of ticketed events. Working with Experience Fayetteville, researchers at the Center for Business and Economic Research estimated that 9,445 unique individuals attended the three-day event based on the number of scanned tickets and associated wristbands. Researchers caution that this is necessarily an undercount, as tickets weren't scanned at the one-day free event and wristband holders were not rescanned and may have been able to share them with other individuals during the two days of ticketed events. Based on analysis of the address data on ticket sales and survey data collected at the event, Center researchers estimate that 73.4% of spectators, or nearly 7,000 individuals came from outside of Northwest Arkansas.

219 individuals competed in the races over the weekend in Fayetteville. They were accompanied by 81 coaches and 102 race officials for a total of 402 individuals. Of these, 401 individuals were ascertained to have been non-residents of Northwest Arkansas and were included in the count of visitors. In addition, we identified 59 members of media organization who were here to cover the event, three of who were residents of Northwest Arkansas, and 101 volunteers who came from 27 states in the US and from Canada. In total, of the 10,000 unique attendees at the event, we estimate that 7,500 came from outside Northwest Arkansas, thereby generating new economic impacts in the area.

Table 5: 2022 UCI Cyclo-cross World Championship Visitor Estimates

2022 UCI Cyclo-cross World Championship Visitor Estimates							
Spectators		Participants, Coaches, Race Officials		Media and Volunteers		Total	
Total Unique Spectators	9,445	Total Unique Participants	402	Total Unique Media and Volunteers	160	Total Unique Attendees	10,007
Visiting Spectators	6,933	Visiting Participants	401	Visiting Media and Volunteers	157	Total Visitors	7,491

Source: Experience Fayetteville and Center for Business and Economic Research survey

During and immediately after the event, researchers from the Center surveyed a wide cross-section of attendees to generate estimates of spending by visitors to the region. Close to 500 spectators were surveyed during the three-day event, and all media organizations and participating teams were surveyed during and immediately after the event. These survey responses allowed researchers to estimate that visiting spectators spent \$4.2 million in Northwest Arkansas, during their 4-day stay in the region. Participants, coaches, and race officials were estimated to have spent \$305,000 while visiting media members and volunteers spent more than \$191,000. In total, more than \$4.7 million in visitor spending in Northwest Arkansas was generated from hosting the Cyclo-cross World Championships.

Table 6: Spending by UCI Cyclo-cross World Championship Attendees

Spending by UCI Cyclo-cross World Championship Attendees				
Category	Spectators	Participant, Coach, Race Official	Media and Volunteers	Total
Accommodations	\$2,253,606	\$188,237	\$118,774	\$2,560,617
Food	\$958,583	\$61,298	\$27,337	\$1,047,218
Other	\$1,000,662	\$55,418	\$45,415	\$1,101,496
Total	\$4,212,851	\$304,953	\$191,526	\$4,709,330

Source: Center for Business and Economic Research survey

The economic impact of spending from visitors to the event was calculated by researchers at the Center for Business and Economic Research using data shown above. The visitor expenditures were allocated to spending in sectors within the IMPLAN input/output model to obtain the overall economic impact including indirect and induced impacts. A detailed description of the IMPLAN input/output model can be found in the Appendix.

The expenditures by visitors created additional economic activity within the Northwest Arkansas region through indirect and induced impacts. The output multiplier for economic activities associated with these visitor expenditures was 1.7. This means for every dollar of visitor expenditures, the total

economic impact generated within Northwest Arkansas was \$1.70. These expenditures generated an economic impact of \$7.8 million in Northwest Arkansas. These activities directly supported 48 jobs and a total of 66 jobs through indirect and induced effects. Total labor income generated by the visitor expenditures was \$2.5 million. All dollar values are presented in 2023 inflation-adjusted dollars.

Table 7: UCI Cyclo-cross World Championship Visitor Economic Impact

UCI Cyclo-cross World Championship Visitors Economic Impact				
Impact	Employment	Labor Income	Value Added	Output
Direct	48	\$1,529,338	\$2,761,508	\$4,715,934 ²
Indirect	11	\$679,926	\$1,059,517	\$2,027,782
Induced	7	\$335,531	\$637,021	\$1,098,305
Total	66	\$2,544,796	\$4,458,047	\$7,842,022

These visitor expenditures and their associated economic impacts contributed significant tax collections that accrued to both the state of Arkansas and the various local governments. According to estimates from the IMPLAN software, the economic activity from visitors generated a total of \$932,000 in taxes collections, of which more than 134,500 went to local governments like cities and counties and more than \$436,000 went to the state government.

Table 8: UCI Cyclo-cross World Championship Visitors Tax Impact

UCI Cyclo-cross World Championship Visitors Tax Impact				
Impact	Local	State	Federal	Total
Direct	\$98,157	\$310,533	\$204,443	\$613,132
Indirect	\$19,435	\$70,090	\$107,957	\$197,482
Induced	\$16,972	\$55,671	\$48,840	\$121,483
Total	\$134,564	\$436,293	\$361,240	\$932,097

Event organizers, Experience Fayetteville, and their partners undertook numerous expenditures both prior to the event and during the event to successfully host the 2022 UCI Cyclo-cross World Championships in Fayetteville. These expenditures, which covered categories such as food and beverages, equipment rental, marketing, and security also generated new economic activity in Northwest Arkansas. Data provided by Experience Fayetteville showed that the event organizers had expenditures of nearly \$3.2 million prior to and during the event. Working the Experience Fayetteville, researchers from the Center identified expenditures that occurred with vendors who were based in Northwest Arkansas and estimated that more than \$1.2 million was spent with regional vendors. The remainder of the expenditures were spent with out-of-region vendors and as such would not generate any economic activity in Northwest Arkansas and are excluded from the economic impact analysis. The following table shows the aggregated expenditures by category that were identified as having flowed to a vendor in Northwest Arkansas.

² Output here is the 2023 inflation adjusted expenditures of \$4,709,330 by visitors from the previous table.

Table 9: UCI Cyclo-cross World Championships Organizer Expenditures in Northwest Arkansas

UCI Cyclo-cross World Championships Organizer Expenditures in Northwest Arkansas	
Category	Spending
Food and Beverages	\$308,994
Marketing research and all other miscellaneous professional, scientific, and technical services	\$183,024
Hotels and motels	\$127,410
General and consumer goods rental	\$127,150
Other support services	\$96,943
Commercial and industrial machinery and equipment rental and leasing	\$92,140
Transit and ground passenger transportation	\$83,844
Construction	\$74,452
Automotive equipment rental and leasing	\$32,622
Truck transportation	\$26,831
Recreation sector business	\$15,750
Waste management and remediation services	\$11,853
Security services	\$11,435
Other ambulatory health care services	\$10,856
Clothing	\$6,418
Legal services	\$4,066
Financial institutions	\$2,700
Medical and diagnostic laboratories	\$2,170
Miscellaneous store retailers	\$2,119
Real estate transactions	\$1,500
Promoters of performing arts and sports	\$740
Mail and courier services	\$180
Building material and supplies stores	\$105
General merchandise stores	\$60
Total	\$1,223,361

Source: Experience Fayetteville and Center for Business and Economic Research calculations

The local expenditures by organizers also created additional economic activity within the Northwest Arkansas region through indirect and induced impacts. The output multiplier for economic activities associated with these expenditures was 1.7. This means for every dollar of organizer expenditures, the total economic impact generated within Northwest Arkansas was \$1.70. These expenditures generated an economic impact of \$2 million in Northwest Arkansas. These activities directly supported 12 jobs and a total of 17 jobs through indirect and induced effects. Total labor income generated by the visitor expenditures was more than \$688,000. All dollar values are presented in 2023 inflation-adjusted dollars.

Table 10: UCI Cyclo-cross World Championships Organizer Economic Impact

UCI Cyclo-cross World Championships Organizer Economic Impact				
Impact	Employment	Labor Income	Value Added	Output
Direct	12	\$408,513	\$677,356	\$1,226,159 ³
Indirect	3	\$189,149	\$291,313	\$528,097
Induced	2	\$90,523	\$171,879	\$296,337
Total	17	\$688,185	\$1,140,549	\$2,050,593

These expenditures and their associated economic impacts contributed significant tax collections that accrued to both the state of Arkansas and the various local governments. According to estimates from the IMPLAN software, the economic activity from organizing the UCI Cyclo-cross World Championships generated a total of \$222,000 in taxes collections, of which nearly \$27,000 went to local governments like cities and counties and more than \$91,000 went to the state government.

Table 11: UCI Cyclo-cross World Championship Organizer Tax Impact

UCI Cyclo-cross World Championship Organizer Tax Impact				
Impact	Local	State	Federal	Total
Direct	\$17,637	\$58,866	\$60,022	\$136,525
Indirect	\$4,609	\$17,267	\$30,883	\$52,759
Induced	\$4,580	\$15,021	\$13,176	\$32,777
Total	\$26,826	\$91,155	\$104,081	\$222,062

Combining the visitor and organizer economic impacts, the 2022 UCI Cyclo-cross World Championships in Fayetteville generated an economic impact of nearly \$9.9 million, created or supported 83 jobs with a labor income of \$3.2 million, and generated \$1.1 million in tax collections.

In addition to the enumerated economic impacts, the event also provided positive global exposure for Northwest Arkansas as a bicycling tourism destination. This included millions of impressions via media coverage, live broadcasts, and social media channelsⁱ. When asked by surveyors, 100% of participants, 98% of visitors, and 97% of media expressed satisfaction with the event. The vast majority of participants also identified the 2022 Championship in Fayetteville as the best version among all the championships attended by these participants since 2015. The 2018 Championship in Valkenburg was identified as the best by the second highest number of participants.

85% of visitors indicated that they would return to Northwest Arkansas for a future vacation and 94% of them indicated that they would recommend it to their friends, family, and colleagues. Among participants, 65% said they would return for a future vacation and 70% would recommend Northwest Arkansas to friends, family, and colleagues. Media professionals surveyed indicated that 67% would return for a future vacation and 74% would recommend Northwest Arkansas to friends, family, and

³ Output here is the 2023 inflation adjusted expenditures of \$1,223,361 by organizers from the previous table.

colleagues. These figures indicate that hosting the 2022 UCI Cyclo-cross World Championships will continue to generate tourism economic over the years.

Other Bicycling Tourism in Northwest Arkansas

Over the course of a year, researchers from the Center for Business and Economic Research worked with data providers and local bicycling organizations to estimate the number of bicycling tourism visitors to Northwest Arkansas. The resulting estimates are not intended to be a hard count of the actual number of bicycling tourists in Northwest Arkansas but is simply one estimate produced from three primary sources: Safegraph Places Data, Strava Metro Data, and the Arkansas Department of Parks, Heritage and Tourism.

The Safegraph data was used to calculate the number of out-of-region visitors at various bicycling points of interest (POIs) in Northwest Arkansas. Estimating the total number of visitors to each bicycling POI involved adjusting the raw counts of visitors provided by Safegraph with the ratio of the coverage of Safegraph devices. The number of tracked devices is provided by Safegraph at the census block group level. The estimated visitor counts for bicycling POIs were aggregated together to generate the number of tourists coming to Northwest Arkansas. Data limitations include the inability to track location data from phones that might have turned off tracking and imprecise measurements of bicyclists' locations as they are moving through a bike trail. Once the total number of out-of-region visitors at Northwest Arkansas bicycling POIs was aggregated from Safegraph, the Strava Metro Data was utilized to estimate the number of out-of-region visitors who might have been bicycling at the POIs and those who may have been walking, hiking, or running at those POIs. Strava Metro's data comes from users of the Strava app which might bias estimates towards bikers who comprise the majority of its users but is somewhat mitigated by the fact that some of the Safegraph POIs are almost entirely used for mountain biking and it is unlikely that out-of-region visitors were walking, hiking, or running on those trails. Finally, data from the Arkansas Department of Parks, Heritage and Tourism annual report on the economic impact of tourism was used to generate estimates of visitor stays and expenditures.

Combining the data from Safegraph Places and Strava Metro, researchers estimate that close to 65,000 tourists visited Northwest Arkansas in 2021 for bicycling activities. As a result of significant changes in the methodology used to calculate the number of bicycling tourists, these visitor estimates are not comparable to previous reports' attempts to quantify bicycling tourists. State tourism expenditures from the Arkansas Department of Parks, Heritage and Tourism annual report indicate that the average tourist spends \$194 during a two-day stay in Arkansas. Expenditures by category such as lodging, food and beverages, and transportation were also obtained from the same report. In all, these 65,000 bicycle tourists in Northwest Arkansas spent more than \$25 million in 2021. This expenditure included more than \$7.5 million on transportation, \$7 million on food and beverages, and \$4 million on lodging in Northwest Arkansas.

Table 12: Bicycling Tourism Expenditures in Northwest Arkansas

Bicycling Tourism Expenditures in Northwest Arkansas	
Category	Expenditures
Transportation	\$7,514,556
Retail	\$3,256,308
Recreation/Entertainment	\$3,005,822
Lodging	\$4,007,763
Food and Beverage	\$7,264,071
Total	\$25,048,520

Source: Arkansas Department of Parks, Heritage and Tourism and Center for Business and Economic Research calculations

The expenditures by visitors created additional economic activity within the Northwest Arkansas region through indirect and induced impacts. The output multiplier for economic activities associated with these visitor expenditures was 1.5. This means for every dollar of visitor expenditures, the total economic impact generated within Northwest Arkansas was \$1.50. These expenditures generated an economic impact of \$37.4 million in Northwest Arkansas. These activities directly supported 294 jobs and a total of 382 jobs through indirect and induced effects. Total labor income generated by the visitor expenditures was \$12.9 million. All dollar values are presented in 2023 inflation-adjusted dollars.

Table 13: Non-Resident Bicycling Tourism Economic Impact

Non-Resident Bicycling Tourism Economic Impact				
Impact	Employment	Labor Income	Value Added	Output
Direct	294	\$7,750,872	\$12,056,989	\$21,592,564
Indirect	54	\$3,412,244	\$5,346,838	\$10,240,363
Induced	34	\$1,687,067	\$3,202,896	\$5,522,215
Total	382	\$12,850,183	\$20,606,723	\$37,355,141

These visitor expenditures and their associated economic impacts contributed significant tax collections that accrued to both the state of Arkansas and the various local governments. According to estimates from the IMPLAN software, the economic activity from visitors generated a total of more than \$5 million in taxes collections, of which more than \$816,000 went to local governments like cities and counties and nearly \$2.6 million went to the state government.

Table 14: Non-Resident Bicycling Tourism Tax Impact

Non-Resident Bicycling Tourism Tax Impact				
Impact	Local	State	Federal	Total
Direct	\$646,416	\$1,973,538	\$860,675	\$3,480,629
Indirect	\$85,009	\$317,423	\$551,397	\$953,829
Induced	\$85,336	\$279,907	\$245,568	\$610,811
Total	\$816,760	\$2,570,868	\$1,657,640	\$5,045,268

Northwest Arkansas Residents' Participation in Bicycling Events and Vacations

The 2022 Northwest Arkansas Resident Survey collected data on how often residents in the region participated in bicycling-oriented vacations in Northwest Arkansas or participated regional bicycling events such as Square to Square, Joe Martin Stage Race, Big Sugar Gravel, Arkansas Enduro Series, Battle for Townsends Ridge, and others.

Analysis of responses from the survey indicated that nearly 7% of Northwest Arkansas residents participated in organized bicycling events, including 9% of Benton County residents and 5% of Washington County residents. The city with the highest participation in the bicycling events was Bentonville, with 10.6% participation. The median expenditure per household participating in bicycling events over the course of a year was estimated at \$235 in Benton County and at \$210 in Washington County. A total of \$3.3 million was spent in the region during the participation in bicycling events and was based on detailed spending by category which is available in the Appendix.

1.8% of Northwest Arkansas residents also reported taking a bicycle-oriented vacation in the region in the past year. The city with the highest proportion of residents taking a bicycle-oriented vacation in the region was Rogers, with 3% of respondents reporting this activity. Detailed expenditure data, which is available in the Appendix, allowed researchers to estimate that the median annual expenditure per Benton County household participating in bicycle-oriented vacations was \$800 and the median annual expenditure per Washington County household participating in bicycle-oriented vacations was \$2,250. In total, Northwest Arkansas household participating in bicycling-oriented vacations spent \$5.3 million.

Table 15: Resident Spending on Bicycling Events and Vacations

Resident Spending on Bicycling Events and Vacations						
	Households Participating in Bicycling Events	Median Expenditures on Bicycling Events per Household	Total Bicycling Event Expenditures	Households Participating in Bicycling Vacations	Median Expenditures on Bicycling Vacations per Household	Total Bicycling Vacation Expenditures
Benton County	9,707	\$235	\$2,281,140	1,886	\$800	\$1,508,790
Washington County	4,711	\$210	\$989,310	1,668	\$2,250	\$3,752,312
Northwest Arkansas	14,418		\$3,270,450	3,554		\$5,261,102

Source: Center for Business and Economic Research survey

The expenditures by residents on bicycling events and bicycling-oriented vacations totaled \$8.5 million. Of this amount, \$1.6 million was spent with organizers of bicycling events who are based in Northwest Arkansas. The economic impact of the operations of bicycling event organizers was calculated in the previous section, so this amount is not included in the economic impact analysis of residents' bicycling events and vacations expenditures that follows.

The expenditure of \$6.9 million by residents on bicycling events and bicycling-oriented vacations created additional economic activity within the Northwest Arkansas region through indirect and induced impacts. The output multiplier for economic activities associated with these expenditures was 1.7. This means for every dollar of visitor expenditures, the total economic impact generated within Northwest Arkansas was \$1.70. These expenditures generated an economic impact of \$11.7 million in Northwest Arkansas. These activities directly supported 95 jobs and a total of 122 jobs through indirect and induced effects. Total labor income generated by these expenditures was \$3.8 million. All dollar values are presented in 2023 inflation-adjusted dollars.

Table 16: Residents’ Bicycling Event and Vacations Economic Impact

Residents’ Bicycling Event and Vacations Economic Impact				
Impact	Employment	Labor Income	Value Added	Output
Direct	95	\$2,256,587	\$3,780,363	\$6,945,993
Indirect	17	\$1,028,496	\$1,646,582	\$3,129,248
Induced	10	\$497,317	\$944,160	\$1,627,856
Total	122	\$3,782,401	\$6,371,105	\$11,703,097

These expenditures and their associated economic impacts contributed significant tax collections that accrued to both the state of Arkansas and the various local. According to estimates from the IMPLAN software, this economic activity generated a total of nearly \$1.3 million in taxes collections, of which more than \$160,000 went to local governments like cities and counties and more than \$537,000 went to the state government.

Table 17: Residents’ Bicycling Event and Vacations Tax Impact

Residents’ Bicycling Event and Vacations Tax Impact				
Impact	Local	State	Federal	Total
Direct	\$103,261	\$340,998	\$333,870	\$778,129
Indirect	\$32,119	\$113,832	\$161,643	\$307,595
Induced	\$25,156	\$82,512	\$72,389	\$180,057
Total	\$160,536	\$537,343	\$567,902	\$1,265,781

In total, bicycling tourism in Northwest Arkansas generated an economic impact of \$59 million. The tourism also supported 587 jobs with a labor income of nearly \$20 million. State and local tax collections from bicycling tourism were estimated at \$4.7 million.

Northwest Arkansas Residents' Bicycling Participation

The 2022 Northwest Arkansas Resident Survey collected data on how the regional infrastructure of hard-surface and natural surface trails impacts the behavior of residents in Northwest Arkansas. Building on a resident survey conducted in 2017, the new 2022 survey sought to understand the frequency and types of usage of the more than 300 miles of hard and soft-surface trails in Northwest Arkansas.

Overall Bicycle Ridership

In the 2022 survey, 33.5% of residents over the age of 18 in Northwest Arkansas reported riding a bicycle in the past year. The level of participation in Northwest Arkansas remained higher than the national bicycling rate of 32%ⁱⁱ. The national rate included the higher bicycling participation among children (3-17 years) whereas the Northwest Arkansas rate only includes adults.

31.6% of Northwest Arkansas residents rode a bike on 12 or more days in the last year, compared to 21% nationally who rode more than 6 days a yearⁱⁱⁱ.

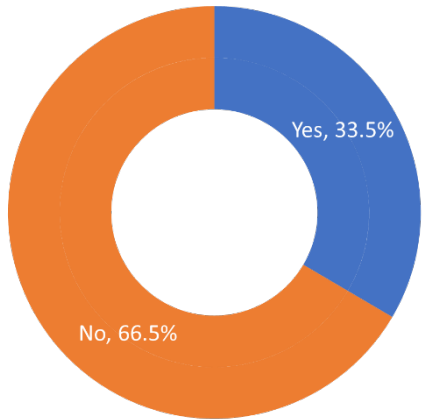
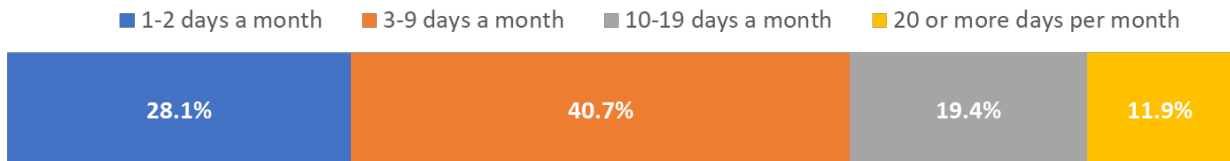


Figure 1: Percent of Northwest Arkansas residents who rode a bike for any reason in the past 12 months.

Bicycling Riding Frequency

Among the Northwest Arkansas residents who reported riding a bike in the last year, close to 41% rode their bikes 3-9 days per month. 28.1% rode their bikes 1-2 days a month while 19.4% and 11.9% rode their bikes 10-19 days a month and 20 or more days a month, respectively.

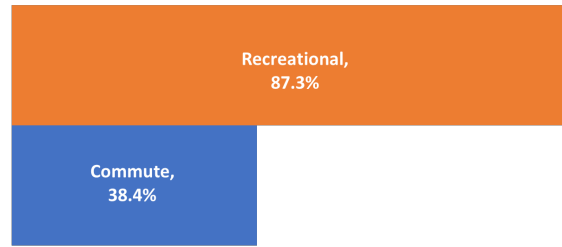
Figure 2: Frequency of bike rides in Northwest Arkansas in the past 12 months.



Bicycle Rides by Type

The vast majority of riders participated in recreational riding in the past year, at 87.3% while more than two-thirds of Northwest Arkansas riders rode their bikes for commuting trips.

Figure 3: Types of bike rides in Northwest Arkansas in the past 12 months



Recreational Ride by Type

In Northwest Arkansas, mountain biking was the most popular type of recreational ride among bike riders at 44%. Road biking participation was 38.4% and gravel biking participation was 17.2%. Other types of biking accounted for 33.6% of rides.

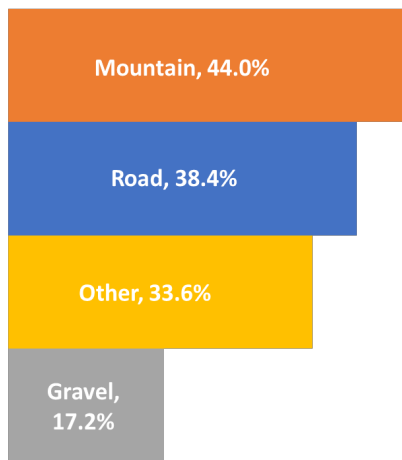
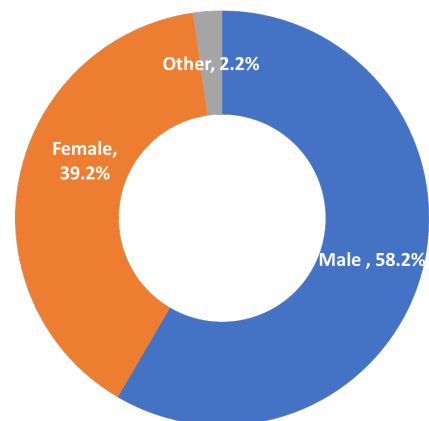


Figure 4: Types of recreational bike rides in Northwest Arkansas in the past 12 months

Bicycle Riding Demographics: Gender

Male riders accounted for nearly sixty percent of all bike riders in Northwest Arkansas (58.2%) while female riders accounted for 39.2%. The gender mix of riders in Northwest Arkansas was largely unchanged from the last survey in 2017. Nationally, 39% of riders were male in 2022 and 30% were female.

Figure 5: Gender of bike riders in Northwest Arkansas in the past 12 months



Bicycle Riding Demographics: Age

Nearly 81% of bike riders in Northwest Arkansas were between the ages of 25-54 (54% of the Northwest Arkansas residents over the age of 18 are between 25 and 54 years old). 11.2% of the riders were 18–24-year-olds and only 8.2% of riders were 55 years or older.

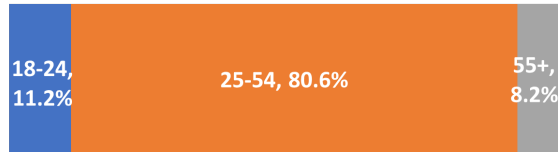


Figure 6: Age of bike riders in Northwest Arkansas in the past 12 months

Bicycle Riding Demographics: Employment Status

More than three-fourths of the bike riders in Northwest Arkansas were employed, nearly 10% were home-makers and nearly 5% each were unemployed or retired. Students made up only 2.2% of riders in the last 12 months. The percent of riders who reported that they were employed or unemployed closely mirrors the region’s labor force participation rate.

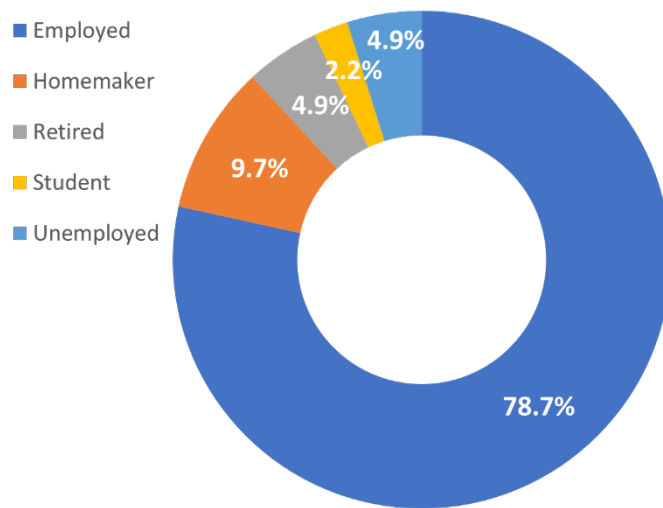


Figure 7: Employment status of bike riders in Northwest Arkansas in the past 12 months

Bicycle Riding Demographics: Income

53.7% of the riders in Northwest Arkansas had a household income close to or higher than the area’s median household income for a family of four (\$83,700). Among this group, the highest segment (21.6%) of riders had incomes greater than \$150,000, 19.8% had incomes between \$100,000 and \$150,000, and 12.3% had incomes in the range between \$75,000 and \$100,000. 14.9% of riders did not respond to the question, while 31.4% of riders had a household income of less than \$75,000.

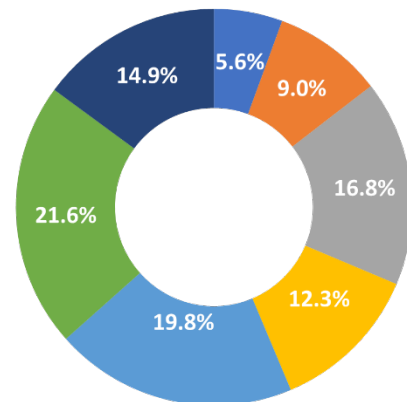
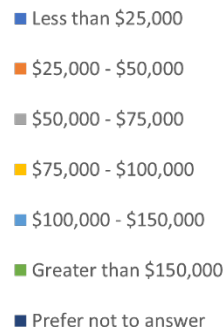


Figure 8: Income of bike riders in Northwest Arkansas in the past 12 months

Bicycle Riding Demographics: Race/Ethnicity

Riders who were non-Hispanic white accounted for 70.5 percent of riders in the past 12 months. Riders who identified as Hispanic accounted for 9.0 percent and were under-represented compared to the demographics of the population of Northwest Arkansas. Asian, Black, or Native/Indigenous riders were represented slightly higher among bike riders than their respective share of the general population.

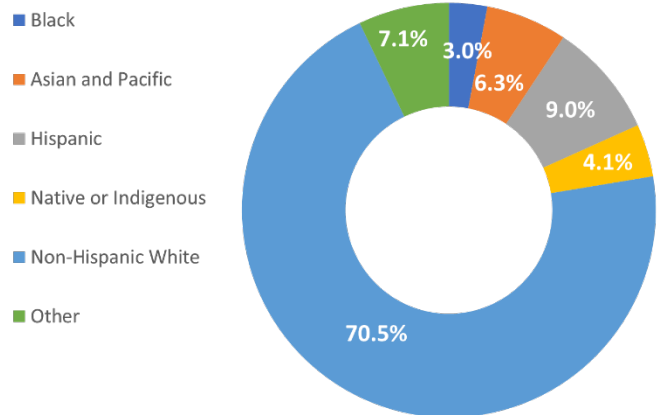


Figure 9: Race/Ethnicity of bike riders in Northwest Arkansas in the past 12 months

Overall Bicycle Ownership

In the 2022 survey, 63.2% of residents in Northwest Arkansas reported owning at least one bicycle in the past year. 97% of households that rode a bike in the past year reported owning a bike as well. 6.5% of bike owning households reported owning at least one e-bike.

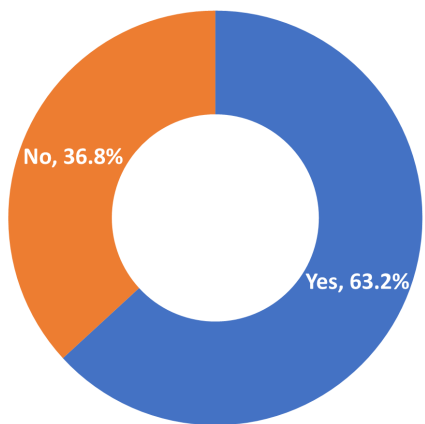
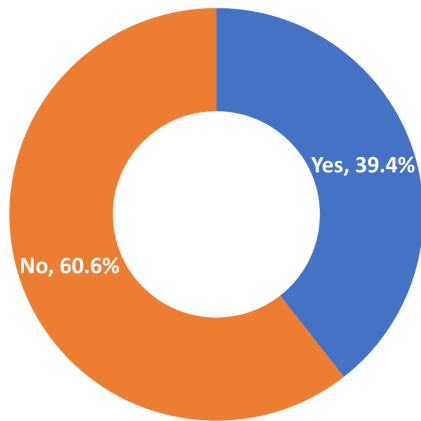


Figure 10: Percent of Northwest Arkansas residents who owned a bike in the past 12 months.

City Profile: Bentonville

Overall Bicycle Ridership: Bentonville



39.4% of Bentonville residents reported riding a bike in the last year which included 38% who rode a bike at least once a month. Both numbers were higher than the levels of ridership in Northwest Arkansas and Benton County. Male riders accounted for 66.1% all bike riders in Bentonville while female riders accounted for 32.1%. The gender mix of riders in Bentonville tilted more heavily towards male riders compared to Northwest Arkansas.

Figure 11: Percent of Bentonville residents who rode a bike for any reason in the past 12 months.

Bicycle Rides by Type: Bentonville

Nearly 90% of riders participated in recreational riding in the past year and close to 50% of Bentonville riders rode their bikes for commuting trips. Bentonville had significantly higher commuting bike rides than Northwest Arkansas as a whole. Mountain biking was the most popular type of recreational ride among bike riders at 53.6%. Road biking participation was 41.1% and gravel biking participation was 19.6%. Other types of biking accounted for 23.2% of rides.

- 70% of Bentonville residents reported riding on paved trails, 57% rode on the Razorback Greenway, 52% rode in city parks, and 38% reported riding on each of the following: mountain bike trails, state parks, and bike lanes.
- 68% of Bentonville residents reported having at least one operational bicycle. 8.3% report owning at least one e-bike.
- Households that bicycled in the past 12 months reported an average of 4 bikes per household.
- 18.3% of Bentonville households reported purchasing a bike in the past year and the median household expenditure was \$650.
- 39.4% of Bentonville households also purchased bike accessories, with a median expenditure of \$200 on accessories.
- 23.2% of Bentonville households reported hosting bike riders from outside Northwest Arkansas.

City Profile: Fayetteville

Overall Bicycle Ridership: Fayetteville

35.8% of Fayetteville residents reported riding a bike in the last year which included 33.3% who rode a bike at least once a month. Both numbers were higher than the levels of ridership in Northwest Arkansas and Washington County. Male riders accounted for 67.2% all bike riders in Fayetteville while female riders accounted for 31%. The gender mix of riders in Fayetteville tilted more heavily towards male riders compared to Northwest Arkansas.

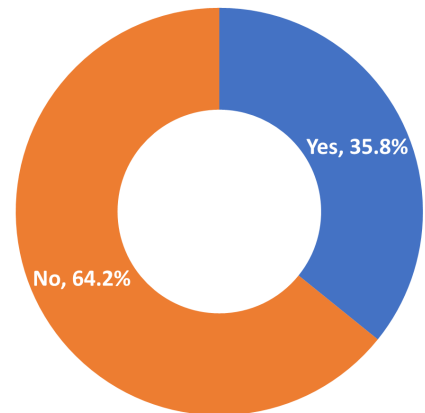


Figure 12: Percent of Fayetteville residents who rode a bike for any reason in the past 12 months.

Bicycle Rides by Type: Fayetteville

86.2% of riders participated in recreational riding in the past year and 46.6% of Fayetteville riders rode their bikes for commuting trips. Fayetteville had significantly higher commuting bike rides than Northwest Arkansas as a whole. Road biking was the most popular type of recreational ride among bike riders at 43.1%. Mountain biking participation was 32.8% and gravel biking participation was 19.0%. Other types of biking accounted for 43.1% of rides.

- 55% of Fayetteville residents reported riding in city parks, 53% rode on the Razorback Greenway, 47% rode on paved trails, and 45% reported riding in bike parks.
- 62% of Fayetteville residents reported having at least one operational bicycle. 8.9% report owning at least one e-bike.
- Households that bicycled in the past 12 months reported an average of 3 bikes per household.
- 13.6% of Fayetteville households reported purchasing a bike in the past year and the median household expenditure was \$750.
- 30.9% of Fayetteville households also purchased bike accessories, with a median expenditure of \$200 on accessories.
- 16% of Fayetteville households reported hosting bike riders from outside Northwest Arkansas.

City Profile: Rogers

Overall Bicycle Ridership: Rogers

43.3% of Rogers residents reported riding a bike in the last year which included 41.8% who rode a bike at least once a month. Both numbers were higher than the levels of ridership in Northwest Arkansas, Benton County, and any of the other cities in Northwest Arkansas. Male riders accounted for 60.3% all bike riders in Rogers while female riders accounted for 36.2%. The gender mix of riders in Rogers was similar to the gender mix of riders across Northwest Arkansas.

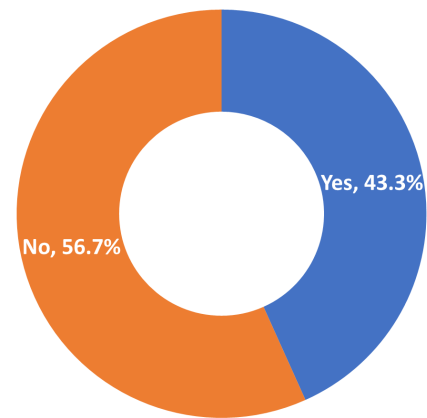


Figure 13: Percent of Rogers residents who rode a bike for any reason in the past 12 months.

Bicycle Rides by Type: Rogers

91.4% of riders participated in recreational riding in the past year and 37.9% of Rogers riders rode their bikes for commuting trips. Fewer riders in Rogers made commuting trips than in Northwest Arkansas as a whole. Mountain biking was the most popular type of recreational ride among bike riders at 44.8%. Road biking participation was 41.4% and gravel biking participation was 15.5%. Other types of biking accounted for 41.4% of rides.

- 71% of Rogers residents reported riding on the Razorback Greenway, 59% rode on paved trails, 50% rode in city parks, and 47% reported riding in bike parks.
- 71% of Rogers residents reported having at least one operational bicycle, which is the highest bike ownership rate in Northwest Arkansas. 6.3% report owning at least one e-bike.
- Households that bicycled in the past 12 months reported an average of 4 bikes per household.
- 22.4% of Rogers households reported purchasing a bike in the past year, which was also the highest in the region. The median household expenditure on bikes was \$300.
- 38.1% of Rogers households also purchased bike accessories, with a median expenditure of \$200 on accessories.
- 31.3% of Rogers households reported hosting bike riders from outside Northwest Arkansas. Rogers had the most residents who reported hosting visiting bike riders.

City Profile: Springdale

Overall Bicycle Ridership: Springdale

29.4% of Springdale residents reported riding a bike in the last year which included 28.1% who rode a bike at least once a month. Both numbers were the lowest of the major cities Northwest Arkansas but were similar to levels in Washington County. Female riders accounted for 60.5% all bike riders in Springdale while male riders accounted for 34.2%. The gender mix of riders in Springdale was the opposite of every other city and Northwest Arkansas and is the only city where female riders were the majority.

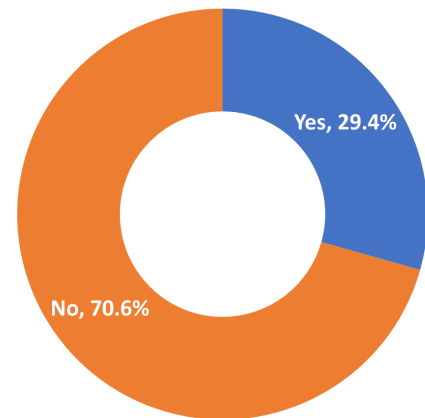


Figure 14: Percent of Springdale residents who rode a bike for any reason in the past 12 months.

Bicycle Rides by Type: Springdale

78.6% of riders participated in recreational riding in the past year and 28.6% of Springdale riders rode their bikes for commuting trips. The percentage of recreational rides and commute rides were lower than the Washington County and Northwest Arkansas averages. Mountain biking was the most popular type of recreational ride among bike riders at 35.7%. Road biking participation was 33.3% and gravel biking participation was 14.3%. Other types of biking accounted for 38.1% of rides.

- 74% of Springdale residents reported riding on the Razorback Greenway, 71% rode on paved trails, 63% rode in city parks, and 47% reported riding in bike parks and bike lanes.
- 60% of Springdale residents reported having at least one operational bicycle. 1.2% report owning at least one e-bike.
- Households that bicycled in the past 12 months reported an average of 4 bikes per household.
- 13.7% of Springdale households reported purchasing a bike in the past year. The median household expenditure on bikes was \$200.
- 29.5% of Springdale households also purchased bike accessories, with a median expenditure of \$100 on accessories.
- 14.7% of Springdale households reported hosting bike riders from outside Northwest Arkansas.

Northwest Arkansas Bicycling Health Impacts

Northwest Arkansas residents who bike for commutes or recreation are leading an active lifestyle which is associated with significant health benefits. In this section of the report, researchers from the Center for Business and Economic Research will use activity data from the 2022 Northwest Arkansas Resident Survey to calculate the avoided chronic disease costs for specific chronic conditions and estimate the reduced mortality that may occur from the bicycling-related physical activity by residents.

Avoided Chronic Disease Costs

According to the 2019 report titled “Physical Activity Guidelines for Americans” from the US Department of Health and Human Services, adults who perform least 150 minutes to 300 minutes a week of moderate-intensity aerobic physical activity, or 75 minutes to 150 minutes a week of vigorous-intensity aerobic physical activity, experience a lower risk of chronic diseases. Using similar guidelines, the 2018 study of bicycling in Northwest Arkansas chose a threshold of biking five or more days a week as the level of biking at which a bicyclist may expect to have the highest possibility of health protection and avoid developing chronic diseases. It is important to note here that bicycling for five or more days does not preclude an individual from developing a chronic disease and individuals may engage in other forms of exercise as well that would reduce their likelihood of developing chronic diseases.

In this study, researchers focused on understanding the incidence and costs of four major chronic diseases: heart disease, stroke, cancer, and diabetes. The incidence rate of these chronic diseases in Benton and Washington counties were obtained from the Arkansas Department of Health’s Behavioral Risk Factor Surveillance System (BRFSS) data^{iv}. The incidence rate data was from 2019. The annual direct and indirect costs associated with the four chronic conditions were obtained from the Milken Institute’s report, “The Costs of Chronic Diseases in the U.S”, which was published in 2018^v. The study calculates the direct costs of health care services to treat these four chronic diseases, i.e., costs paid by individuals, families, insurance companies, and employers and the indirect costs that relate to work absences, lost wages, and reduced economic productivity. The direct and indirect costs were calculated individually for each chronic condition in 2016, and researchers from the Center for Business and Economic Research adjusted these costs to account for inflation and regional differences in health care costs.

Based on survey data that asked Northwest Arkansas residents about the frequency and distance covered on bike rides, researchers estimate that 3.7% of the area’s residents over the age of 18 cycled at the threshold of 5 or more days per week and as such may enjoy a lower incidence of chronic diseases. Within Benton County, 5.6% of residents met that threshold and in Washington County, 2% of residents met that threshold. Utilizing the adjusted chronic diseases costs described earlier and the county specific incidence rates for the four chronic diseased studies, Center researchers estimate that residents in Benton County who bike on 5 or more days a week avoided more than \$45 million in chronic disease costs and in Washington County those residents avoided more than \$14 million in chronic disease costs. In total, 3.7% of Northwest Arkansas residents who biked on 5 or more days per week avoided more than \$59 million in chronic disease costs.

Table 18: Avoided Chronic Disease Costs Related to Bicycling in Northwest Arkansas

Avoided Chronic Disease Costs Related to Bicycling in Northwest Arkansas		
County	% of Population Bicycling 20+ Days per month	Total Potential Avoided Chronic Diseases Costs
Benton County	5.6%	\$45,261,503
Washington County	2.0%	\$14,221,290
Northwest Arkansas	3.7%	\$59,482,793

Avoided Pre-Mature Deaths

World Health Organization’s (WHO’s) Health Economic Assessment Tool (HEAT) develops estimates of the relative risk of death for bicycling or walking from any cause (i.e., all-cause mortality), compared to the risk of death for people who do not bicycle or walk regularly. After identifying the reduced risk of mortality that a population might incur from specific levels of bicycling or walking, HEAT compares this to an estimate of the number of adults who would normally be expected to die in any given year in the study population. This allows states and municipalities to estimate the number of lives in a particular area that might be saved from the increase in health benefits from bicycling participation^{vi}.

The inputs to the HEAT model were once again derived from responses to the 2022 Northwest Arkansas Resident Survey. In Benton County, the bicycling population was estimated at 79,000, the median participation in bicycling was estimated at 5 days a month, and the median distance bicycled was 1.03 miles per day in a year. The HEAT model estimates that as a result of this bicycling activity, 23 pre-mature deaths were avoided in Benton County. In Washington County, the bicycling population was estimated at 56,000, the median participation in bicycling was estimated at 4 days a month, and the median distance bicycled was 0.87 miles per day in a year. According to the HEAT model specification for Washington County, this would result in 18 pre-mature deaths avoided in the county.

Table 19: Pre-Mature Deaths Avoided Related to Bicycling in Northwest Arkansas

Pre-Mature Deaths Avoided Related to Bicycling in Northwest Arkansas				
County	Bicycling Population	Median Bicycling Days per Month	Median Bicycling Miles per Day	Pre-mature Deaths Avoided
Benton County	79,000	5 days	1.03 miles	23
Washington County	56,000	4 days	0.87 miles	18
Northwest Arkansas	135,000			41

Appendix

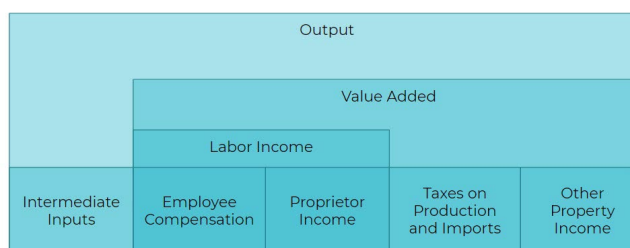
Use of IMPLAN in this study

IMPLAN is a regional impact model that enables the evaluation of the economic impact of specific activities such as construction or operation of business, as well as retail, wholesale, manufacturing, and service sales within an economy. IMPLAN was originally developed by the U.S. Department of Agriculture, the Forest Service in cooperation with the Federal Emergency Management Agency (FEMA), the U.S. Department of Interior Bureau of Land Management, and the University of Minnesota to assist the Forest Service in land and resource management planning^{vii}.

The basic data sources for the current edition of the IMPLAN database and the models used in this study are the Input-Output Accounts of the United States, developed by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA), and county income and employment data published by BEA and the Bureau of Labor Statistics (BLS). The model reflects 2021 industrial structure and technology, and 2021 prices. Trade flows and the results of this analysis were adjusted to reflect prices of the respective years. Economic output values and state and local tax revenues are presented in 2023 dollars.

IMPLAN uses a 546-sector input-output model to measure the effects of three types of impacts: direct, indirect, and induced. **Direct impacts** consist of employment and purchases of goods and services in the region resulting from the activity being evaluated, for example operating a bicycling-related business. **Indirect impacts** (inter-industry) consist of goods and services purchased by the firms which supply inputs consumed in the direct activity. **Induced impacts** consist of increased household purchases of goods and services in the region by employees of direct and indirect employers. **Multipliers**, which summarize the magnitude of the indirect and induced effects generated by a given direct change, is calculated as the ratio of total impact to direct impact.

The **value added** represents the difference between output/economic impact and the cost of intermediate inputs and is equivalent to the industry's contribution to GDP. The **labor income** is the sum of employee compensation (wages and benefits) and proprietor income. The **output or economic impact** is the total production value of an industry, and it includes all components of production value or output for a given industry.



In the IMPLAN model, inter-industry relationships (use and make coefficients) are quantified based on data on the production functions of the different industries in the region. The IMPLAN model was used to estimate multipliers based on those coefficients in the Northwest Arkansas region. Direct spending, total economic activity, total labor income, total employment, and total property income were generated by this model.

2022 Northwest Arkansas Resident Survey Results

1. What is your age? (n=801)

Age Categories	Number	%
18 - 24	82	10.24%
25 - 54	486	60.67%
55+	233	29.09%
Total	801	100.00%

2. What is your city and county of residence? (n=801)

County	Number	%
Benton	395	49.31%
Washington	406	50.69%
Grand Total	801	100.00%

City	Number	%*
Bentonville	142	17.73%
Fayetteville	162	20.22%
Rogers	134	16.73%
Springdale	148	18.48%
Other	224	27.97%
Total	801	~100.00%

*The percentages are rounded up

3. In the past 12 months, did you ride a bicycle outside the home for any reason? (n=801)

Answer	Number	%
Yes	268	33.46%
No	533	66.54%

Total	801	100.00%
	Yes Responses	%
Benton	149	37.72%
Bentonville	56	39.44%
Rogers	58	43.28%
Washington	119	29.31%
Fayetteville	58	35.80%
Springdale	42	29.37%
Other Towns	58	25.89%
NWA	268	33.46%

3b. In the last year, how many days per month did you participate in bicycling outside the home? Please provide an average estimate. (n=268)

	Mean	Median
Benton	8.07	5
Bentonville	9.64	6.5
Rogers	6.41	5
Washington	6.25	4.00
Fayetteville	7.62	6.00
Springdale	5.76	3.00
Other Towns	6.45	3.50
NWA	7.26	5

4. How many of those days per month did you participate in each of the following types of bicycling? (n=268)

	Total Responses**		Total Days		Mean		Median	
	Commute	Recreational	Commute	Recreational	Commute	Recreational	Commute	Recreational
Benton	60	132	381	925	2.66	6.47	0.00	4.00
Bentonville	27	50	209	392	3.87	7.26	0.50	5.00
Rogers	22	53	98	314	1.75	5.61	0	4.00
Washington	42	102	255	534	2.32	4.85	0	3.00
Fayetteville	26	50	181	289	3.35	5.35	0	3.5
Springdale	12	33	57	173	1.63	4.94	0	3.00
Other Towns	15	48	91	291	1.69	5.39	0	3.00
NWA	102	234	381	925	2.51	5.77	0.00	4.00

**Number of the people who bicycled at least one day a month for commute or recreation during the last 12 months.

5. How many days per month did you participate in each of the following types of recreational bicycling? (n=268)

**	Mean				Median			
	R	M	G	O	R	M	G	O
Benton	2	3	1	2	0	1	0	0
Bentonville	3	4	2	1	0	1	0	0
Rogers	2	3	1	2	0	0	0	0
Washington	2	2	1	2	0	0	0	0
Fayetteville	2	1	1	2	0	0	0	1
Springdale	1	2	1	2	0	0	0	0
Other Towns	3	3	1	1	0	1	0	0
NWA	2	3	1	2	0	1	0	0

**R = Road Biking, M = Mountain Biking, G = Gravel Biking, O = Other Type of Recreational Biking

6. On a typical day that you ride a bicycle, what is the average distance in miles you travel for each of the following types of bicycling? (n=268)

**	Mean					Median					Mean		Median	
	C	R	M	G	O	C	R	M	G	O	All	All Rec***	All	All Rec***
Benton	6.12	11.27	8.80	12.90	5.91	4	10	6	7.5	5	16.11	14.63	10.00	10.00
Bentonville	6.39	10.67	11.75	18.59	5.62	4	8	8.5	20	3	19.41	17.51	9.50	10.00
Rogers	6.77	10.75	7.12	6.22	5.67	3.5	10	6	4	5	14.79	12.70	10.00	10.00
Washington	6.06	8.80	6.21	7.19	7.72	5	7	5	3	5	13.40	12.14	10.00	8.00
Fayetteville	5.85	9.23	6.26	10.09	8.24	5	7	5	5	5	15.57	14.29	12.00	11.00
Springdale	6.29	6	5.97	3.68	5.71	6	4	5	2.5	5	9.97	8.24	7.00	5.00
Other Towns	4.83	12.71	6.29	8.22	8.21	5	15	5	2	6.5	12.73	12.93	7.50	9.50
NWA	6.09	10.18	7.81	10.17	6.78	4.5	8	6	4	5	14.94	13.56	10.00	9.00

**C = Commute, R = Road Biking, M = Mountain Biking, G = Gravel Biking, O = Other Type Biking

*** All Rec = Mean and Median of all the different types of recreational bicycling

7. Have you ridden on the following bicycle infrastructure in the past 12 months? (n = 268)

	Razor Green		St Bike Ln		Paved Trails		State Park		City Park		Bike Park		Mt Bike Trails	
	Total	%**	Total	%**	Total	%**	Total	%**	Total	%**	Total	%**	Total	%**
Benton	98	66%	57	38%	95	64%	53	36%	77	52%	62	42%	55	37%
Bentonville	32	57%	21	38%	39	70%	21	38%	29	52%	23	41%	21	38%
Rogers	41	71%	19	33%	34	59%	24	41%	29	50%	27	47%	24	41%
Washington	76	64%	47	39%	67	56%	40	34%	68	57%	55	46%	51	43%
Fayetteville	31	53%	22	38%	27	47%	19	33%	32	55%	26	45%	24	41%
Springdale	28	74%	18	47%	27	71%	14	37%	24	63%	18	47%	16	42%
Other Towns	42	72%	24	41%	35	60%	15	26%	31	53%	23	40%	21	36%
NWA	174	65%	104	39%	162	60%	93	35%	145	54%	117	44%	106	40%

**All the percentages are calculated based on the number of riders in each County or City.

8. How many operational bicycles does your household own? (n=801 and n=268*)

	Overall				Rode in last 12M			
	Count**	%***	Mean	Median	Count**	%***	Mean	Median
Benton	264	67%	2	2	145	97%	4	3
Bentonville	97	68%	2	2	54	96%	4	3
Rogers	95	71%	2	2	58	100%	4	3
Washington	242	60%	2	1	115	97%	3	3
Fayetteville	101	62%	2	1	57	98%	3	3
Springdale	84	60%	2	1	37	97%	4	4
Other Towns	129	58%	2	1	54	93%	4	4
NWA	506	63%	2	1	260	97%	4	3

*Total responses to this question are 801, the sub analysis "Rode in the last 12M" is from the 268 individuals who reported riding a bike in the last 12 months.

** Number of Households that have at least one operational bicycle

*** % of the Households have at least one operational bicycle

9. Are any of these e-bikes? (n=506 and n=260*)

	Overall		Rode in last 12M	
	Total**	%***	Total**	%***
Benton	20	7.58%	17	11.72%
Bentonville	8	8.25%	7	12.96%
Rogers	6	6.32%	5	8.62%
Washington	13	5.37%	10	8.70%
Fayetteville	9	8.91%	8	14.04%
Springdale	1	1.19%	0	0.00%
Other Towns	9	6.98%	7	12.96%
NWA	33	6.52%	27	10.38%

*Number of households have at least an operational bicycle.

** Total number of households have at least an e-bike.

***% of the households have at least an e-bike.

10. Do you primarily ride an e-bike or conventional bike? (n=33 and n=27*)

Overall				
	e-bike		Conventional bike	
	Count	%	Count	%
Benton	8	40.00%	12	60.00%
Bentonville	1	12.50%	7	87.50%
Rogers	5	83.33%	1	16.67%
Washington	10	76.92%	3	23.08%
Fayetteville	7	77.78%	2	22.22%
Springdale	1	100.00%	0	0.00%
Other Towns	4	44.44%	5	55.56%
NWA	18	54.55%	15	45.45%

Rode in last 12M				
	e-bike		Conventional bike	
	Count	%	Count	%
Benton	7	41%	10	59%
Bentonville	1	14%	6	86%
Rogers	4	80%	1	20%
Washington	8	80%	2	20%
Fayetteville	7	88%	1	13%
Springdale	0	0%	0	0%
Other Towns	3	43%	4	57%
NWA	15	56%	12	44%

* Number of households who reported having e-bikes.

11. Have you purchased a bicycle of any type in the last 12 months? (n=801 and n= 268)

	Overall		Rode in last 12M	
	Count	%**	Count	%**
Benton	75	18.99%	53	35.57%
Bentonville	26	18.31%	19	33.93%
Rogers	30	22.39%	21	36.21%
Washington	57	14.04%	44	36.97%
Fayetteville	22	13.58%	21	36.21%
Springdale	19	13.67%	13	34.21%
Other Towns	35	15.63%	23	39.66%
NWA	132	16.48%	97	36.19%

**Proportion of the people who purchased at least one bicycle in the last 12 months.

12. How many new bicycles have you purchased in the last 12 months? (n=132 and n=97*)

	Overall		Rode in last 12M	
	Mean	Median	Mean	Median
Benton	1.56	1	1.53	1
Bentonville	1.31	1	1.37	1
Rogers	1.60	1.5	1.62	1
Washington	1.37	1	1.45	1
Fayetteville	1.45	1	1.48	1
Springdale	1.37	1	1.54	1
Other Towns	3.09	2	2.92	2
NWA	1.48	1	1.49	1

13. How much did you spend on the bike(s), not including any accessories? *For example, be sure to add up the purchase price of all the bikes bought. (n=132 and n=97*)*

Overall				
	Mean per HH**	Median per HH**	Mean per Bike***	Median per Bike***
Benton	\$1,478.20	\$500.00	\$947.56	\$250.00
Bentonville	\$1,425.58	\$650.00	\$1,090.15	\$500.00
Rogers	\$1,342.10	\$300.00	\$838.81	\$250.00
Washington	\$1,346.54	\$350.00	\$984.01	\$200.00
Fayetteville	\$1,536.36	\$750.00	\$1,056.25	\$500.00
Springdale	\$586.79	\$200.00	\$428.81	\$175.00
Other Towns	\$1,866.89	\$550.00	\$1,188.02	\$200.00
NWA	\$1,421.35	\$400.00	\$962.14	\$200.00
Rode in last 12M				
	Mean per HH**	Median per HH**	Mean per Bike***	Median per Bike***
Benton	\$1,982.43	\$800.00	\$1,297.15	\$500.00
Bentonville	\$1,893.16	\$1,000.00	\$378.63	\$650.00
Rogers	\$1,768.76	\$400.00	\$386.92	\$500.00
Washington	\$1,654.41	\$600.00	\$1,137.41	\$300.00
Fayetteville	\$1,495.24	\$725.00	\$1,012.90	\$500.00
Springdale	\$790.00	\$350.00	\$513.50	\$175.00
Other Towns	\$2,742.57	\$1,150.00	\$1,855.26	\$600.00
NWA	\$1,833.64	\$700.00	\$1,226.64	\$500.00

* All respondents- 132, respondents who rode a bike in the last 12 months- 97.

** Mean and Median calculated by the number of the households spend more than \$0 on at least one bike (Accessories are not included)

***Mean and Median per Bike are the estimated mean and median of for each bike.

14. Where did you purchase your bicycle(s)? Please select all that apply. (n=132)

	Local Shops	Sport Retailers	Retailers	Toy Store	Online	Other
	%	%	%	%	%	%
Benton	25.33%	5.33%	28.00%	0.00%	28.00%	24.00%
Bentonville	30.77%	11.54%	23.08%	0.00%	30.77%	23.08%
Rogers	16.67%	3.33%	30.00%	0.00%	33.33%	23.33%
Washington	35.09%	10.53%	21.05%	0.00%	21.05%	26.32%
Fayetteville	36.36%	18.18%	36.36%	0.00%	18.18%	27.27%
Springdale	36.84%	5.26%	36.84%	0.00%	15.79%	26.32%
Other Towns	31.43%	8.57%	20.00%	0.00%	22.86%	25.71%
NWA	29.55%	7.58%	25.00%	0.00%	25.00%	25.00%

15. How much money has your household spent in the last 12 months in Northwest Arkansas on bicycle-related expenditures including clothing; equipment and parts; and service and maintenance? *Include only goods and services purchases made with vendors located in Northwest Arkansas.*

	Number of HH Spend >0	% Of HH Spend >0	Mean Per HH Spend >0	Median Per HH Spend >0
Benton	150	37.97%	\$3,042.01	\$200.00
Bentonville	56	39.44%	\$6,638.77	\$200.00
Rogers	51	38.06%	\$1,112.16	\$200.00
Washington	115	28.33%	\$1,082.31	\$150.00
Fayetteville	50	30.86%	\$1,094.00	\$200.00
Springdale	41	29.50%	\$354.78	\$100.00
Other Towns	67	29.91%	\$1,239.25	\$200.00
NWA	265	33.08%	\$2,191.57	\$200.00

16. Have you participated in an organized bicycle event in Northwest Arkansas in the past 12 months? For example, *Square to Square, Joe Martin Stage Race, Big Sugar Gravel, Arkansas Enduro Series, Battle for Townsends Ridge, etc.* (n=801)

	Count (Yes)	%
Benton	36	9.11%
Bentonville	15	10.56%
Rogers	11	8.21%
Washington	20	4.93%
Fayetteville	8	4.94%
Springdale	7	5.04%
Other Towns	15	6.70%
NWA	56	6.99%

17. How many days did you spend participating in bicycling events in Northwest Arkansas over the past 12 months? (n=56*)

	Mean	Median
Benton	6.6	3.00
Bentonville	7.0	4.00
Rogers	8.5	3.00
Washington	4.4	2.00
Fayetteville	6.8	1.50
Springdale	1.4	1.00
Other Towns	4.1	2.00
NWA	5.8	2.00

18. How much money did you spend per day on each of the following items related to bicycling events in Northwest Arkansas? (n=56)

Lodging	Total per day	Mean per day per HH	Median per day per HH
Benton	\$290.00	\$8.06	\$0.00

Bentonville	\$40.00	\$2.67	\$0.00
Rogers	\$100.00	\$9.09	\$0.00
Washington	\$270.00	\$13.50	\$0.00
Fayetteville	\$120.00	\$15.00	\$0.00
Springdale	\$0.00	\$0.00	\$0.00
Other Towns	\$300.00	\$20.00	\$0.00
NWA	\$560.00	\$10.00	\$0.00
Food	Total per day	Mean per day per HH	Median per day per HH
Benton	\$2,155.00	\$59.86	\$20.00
Bentonville	\$1,290.00	\$86.00	\$0.00
Rogers	\$470.00	\$42.73	\$50.00
Washington	\$1,260.00	\$63.00	\$37.50
Fayetteville	\$335.00	\$41.88	\$17.50
Springdale	\$710.00	\$101.43	\$50.00
Other Towns	\$610.00	\$40.67	\$35.00
NWA	\$3,415.00	\$60.98	\$25.00
Transportation	Total per day	Mean per day per HH	Median per day per HH
Benton	\$762.00	\$21.17	\$3.50
Bentonville	\$192.00	\$12.80	\$0.00
Rogers	\$450.00	\$40.91	\$10.00
Washington	\$640.00	\$32.00	\$10.00
Fayetteville	\$160.00	\$20.00	\$10.00
Springdale	\$405.00	\$57.86	\$20.00
Other Towns	\$195.00	\$13.00	\$10.00
NWA	\$1,402.00	\$25.04	\$7.50
Souvenirs	Total per day	Mean per day per HH	Median per day per HH
Benton	\$660.00	\$18.33	\$0.00
Bentonville	\$265.00	\$7.36	\$0.00
Rogers	\$255.00	\$7.08	\$0.00

Washington	\$490.00	\$13.61	\$0.00
Fayetteville	\$45.00	\$1.25	\$0.00
Springdale	\$300.00	\$8.33	\$0.00
Other Towns	\$285.00	\$7.92	\$20.00
NWA	\$1,150.00	\$31.94	\$0.00
Entry or registration fees	Total per day	Mean per day per HH	Median per day per HH
Benton	\$2,865.00	\$79.58	\$5.00
Bentonville	\$1,000.00	\$27.78	\$10.00
Rogers	\$1,020.00	\$28.33	\$0.00
Washington	\$1,045.00	\$29.03	\$37.50
Fayetteville	\$415.00	\$11.53	\$50.00
Springdale	\$370.00	\$10.28	\$35.00
Other Towns	\$1,105.00	\$30.69	\$10.00
NWA	\$3,910.00	\$108.61	\$15.00

19. Have you taken a vacation in Northwest Arkansas during which bicycling was the primary activity (i.e., bicycling-oriented vacation) in the past 12 months? (N=801)

	Count*	%
Benton	7	1.77%
Bentonville	1	0.70%
Rogers	4	2.99%
Washington	7	1.72%
Fayetteville	4	2.47%
Springdale	1	0.72%
Other Towns	4	1.79%
NWA	14	1.75%

*Number of the households who went on at least one bicycle-oriented vacation.

20. How many days did you spend participating in bicycling-oriented vacations in Northwest Arkansas over the past 12 months? (n=14)

	Mean	Median
Benton	7.1	3
Bentonville	2.0	2
Rogers	5.3	2.5
Washington	8.4	7
Fayetteville	9.3	10
Springdale	3.0	3
Other Towns	11.5	9.5
NWA	7.8	6

21. How much money did you spend per day on each of the following items related to bicycling-oriented vacations in Northwest Arkansas? (n=14)

Lodging	Total per day	Mean per day per HH	Median per day per HH
Benton	\$270.00	\$38.57	\$0.00
Bentonville	\$200.00	\$200.00	\$200.00
Rogers	\$30.00	\$7.50	\$0.00
Washington	\$6,170.00	\$881.43	\$150.00
Fayetteville	\$720.00	\$180.00	\$60.00
Springdale	\$300.00	\$300.00	\$300.00
Other Towns	\$5,190.00	\$1,297.50	\$95.00
NWA	\$6,440.00	\$460.00	\$35.00
Food	Total per day	Mean per day per HH	Median per day per HH
Benton	\$565.00	\$80.71	\$40.00
Bentonville	\$40.00	\$40.00	\$40.00
Rogers	\$480.00	\$120.00	\$120.00
Washington	\$545.00	\$77.86	\$50.00
Fayetteville	\$195.00	\$48.75	\$37.50
Springdale	\$100.00	\$100.00	\$100.00

Other Towns	\$295.00	\$73.75	\$40.00
NWA	\$1,110.00	\$79.29	\$45.00
Non-bicycling entertainment and recreation	Total per day	Mean per day per HH	Median per day per HH
Benton	\$340.00	\$48.57	\$20.00
Bentonville	\$60.00	\$60.00	\$60.00
Rogers	\$250.00	\$62.50	\$50.00
Washington	\$1,010.00	\$144.29	\$50.00
Fayetteville	\$210.00	\$52.50	\$5.00
Springdale	\$250.00	\$250.00	\$250.00
Other Towns	\$580.00	\$145.00	\$35.00
NWA	\$1,350.00	\$96.43	\$35.00
Transportation	Total per day	Mean per day per HH	Median per day per HH
Benton	\$332.00	\$47.43	\$52.00
Bentonville	\$100.00	\$100.00	\$100.00
Rogers	\$192.00	\$48.00	\$56.00
Washington	\$670.00	\$95.71	\$50.00
Fayetteville	\$120.00	\$30.00	\$35.00
Springdale	\$100.00	\$100.00	\$100.00
Other Towns	\$490.00	\$122.50	\$37.50
NWA	\$1,002.00	\$71.57	\$50.00

22. How many people from outside Northwest Arkansas have visited you specifically to use natural surface trails (i.e., mountain bike trails) in the region? (n=801)

	Number of Hosts	Number of Guests	Mean of Total**	Median of Total	Mean of Response***	Median of Response
Benton	95	682	1.73	0.00	7.18	2.00
Bentonville	33	275	1.94	0.00	8.33	2.00
Rogers	42	232	1.73	0.00	5.52	2.50
Washington	63	291	0.72	0.00	4.62	2.00
Fayetteville	26	69	0.43	0.00	2.65	2.00
Springdale	21	75	0.54	0.00	3.57	2.00

Other Towns	36	322	1.44	0.00	8.94	2.50
NWA	158	973	1.21	0.00	6.16	2.00

**Mean and median from total number of the participants in the survey (n=801)

***Mean and median from the respondents who had at least a guest (n=158)

23. Which best describes how you identify? (n=801)

Gender	Count	%
Female	245.00	30.59%
Male	280.00	34.96%
Other	12.00	1.50%
Prefer not to answer	7.00	0.87%
No Answer	257.00	32.08%
Total	801.00	100.00%

24. What city in Northwest Arkansas do you reside in? (n=801)

Cities	Count	%
Bella Vista	46	5.74%
Bentonville	142	17.73%
Centerton	8	1.00%
Farmington	18	2.25%
Fayetteville	162	20.22%
Lincoln	9	1.12%
Lowell	7	0.87%
Other	81	10.11%
Prairie Grove	24	3.00%
Rogers	134	16.73%
Siloam Springs	8	1.00%
Springdale	148	18.48%
West Fork	14	1.75%

Total	801	100.00%
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25. How many people in each of the following age ranges live in your household (including yourself)? (n=801)

Age Range	Count	% Of Total	% Of HH
ages 0 - 5	192	11%	24%
ages 5 - 19	433	24%	54%
ages 20 - 29	223	12%	28%
ages 30 - 39	266	15%	33%
ages 40 - 49	323	18%	40%
ages 50 - 64	234	13%	29%
ages 65 or older	139	8%	17%
Grand Total	1810	100%	226%

26. Which of the following best describes your race or ethnicity? You may select more than one option. (n=801)

	Black		Asian-Pacific		Subcontinent Asian		Hispanic		Native or Indigenous		Non-Hispanic White		Other	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
Benton	8	2.03%	8	2.03%	2	0.51%	26	6.58%	15	3.80%	206	52.15%	22	5.57%
Bentonville	5	3.52%	4	2.82%	2	1.41%	8	5.63%	5	3.52%	73	51.41%	8	5.63%
Rogers	0	0.00%	3	2.24%	0	0.00%	12	8.96%	6	4.48%	80	59.70%	6	4.48%
Washington	11	2.71%	10	2.46%	1	0.25%	22	5.42%	13	3.20%	182	44.83%	18	4.43%
Fayetteville	5	3.09%	4	2.47%	0	0.00%	7	4.32%	6	3.70%	76	46.91%	9	5.56%
Springdale	5	3.60%	3	2.16%	1	0.72%	15	10.79%	3	2.16%	56	40.29%	5	3.60%
Other Towns	4	1.79%	4	1.79%	0	0.00%	6	2.68%	8	3.57%	103	45.98%	12	5.36%
NWA	19	2.37%	18	2.25%	3	0.37%	48	5.99%	28	3.50%	388	48.44%	40	4.99%

27. Which of the following best describes you? (Check all that apply) (n=801)

	Employed		Homemaker		Retired		Student		Unemployed	
	Total	%	Total	%	Total	%	Total	%	Total	%
Benton	223	56.46%	18	4.56%	31	7.85%	5	1.27%	31	7.85%
Bentonville	85	59.86%	8	5.63%	8	5.63%	0	0.00%	8	5.63%
Rogers	87	64.93%	3	2.24%	10	7.46%	4	2.99%	10	7.46%
Washington	172	42.36%	172	42.36%	42	10.34%	8	1.97%	42	10.34%
Fayetteville	64	39.51%	11	6.79%	24	14.81%	3	1.85%	24	14.81%
Springdale	64	46.04%	6	4.32%	9	6.47%	4	2.88%	9	6.47%
Other Towns	95	42.41%	13	5.80%	22	9.82%	2	0.89%	22	9.82%
NWA	395	49.31%	41	5.12%	73	9.11%	13	1.62%	73	9.11%

28. What is your annual household income? (n=801)

	Less than \$25,000		\$25,000 - \$50,000		\$50,000 - \$75,000		\$75,000 - \$100,000		\$100,000 - \$150,000		Greater than \$150,000		Prefer not to answer	
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
Benton	16	4.05%	29	7.34%	41	10.38%	39	9.87%	44	11.14%	60	15.19%	58	14.68%
Bentonville	6	4.23%	9	6.34%	15	10.56%	14	9.86%	11	7.75%	28	19.72%	22	15.49%
Rogers	5	3.73%	13	9.70%	11	8.21%	15	11.19%	20	14.93%	20	14.93%	23	17.16%
Washington	28	6.90%	41	10.10%	40	9.85%	26	6.40%	41	10.10%	33	8.13%	48	11.82%
Fayetteville	5	3.09%	14	8.64%	15	9.26%	14	8.64%	20	12.35%	15	9.26%	18	11.11%
Springdale	8	5.76%	20	14.39%	17	12.23%	5	3.60%	12	8.63%	9	6.47%	17	12.23%
Other Towns	14	6.25%	14	6.25%	23	10.27%	17	7.59%	22	9.82%	21	9.38%	26	11.61%
NWA	44	5.49%	70	8.74%	81	10.11%	65	8.11%	85	10.61%	93	11.61%	106	13.23%

References

- ⁱ “Fayetteville Welcomes the World: 2022 Walmart UCI Cyclo-cross World Championships” https://www.experiencefayetteville.com/images/CX_Report_Web.pdf
- ⁱⁱ 2022 US Bicycling Participation Study, People for Bikes <https://www.peopleforbikes.org/reports/us-bicycling-participation-report>
- ⁱⁱⁱ Ibid.
- ^{iv} Behavioral Risk Factor Surveillance System (BRFSS), Arkansas Department of Health <https://www.healthy.arkansas.gov/programs-services/topics/brfss>
- ^v The Costs of Chronic Disease in the U.S., The Milken Institute <https://milkeninstitute.org/report/costs-chronic-disease-us>
- ^{vi} HEAT Model. World Health Organization. [https://www.who.int/publications/i/item/health-economic-assessment-tool-\(heat\)-for-walking-and-for-cycling](https://www.who.int/publications/i/item/health-economic-assessment-tool-(heat)-for-walking-and-for-cycling)
- ^{vii} “IMPLAN: Software for Economic Analysis.” <http://www.implan.com/>