

Existing Conditions

Technical Memorandum

MONTANA



PEDESTRIAN & BICYCLE PLAN

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Prepared for:



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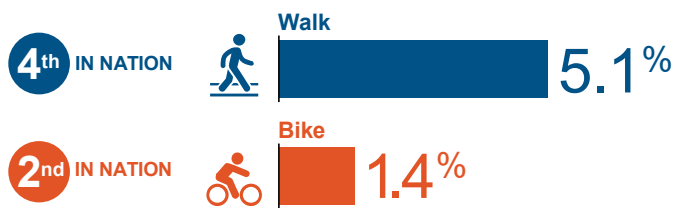
Existing Conditions

1.0. INTRODUCTION

Walking and bicycling as modes of both transportation and recreation have been steadily increasing across the country and throughout many of Montana’s communities. There has been strong interest and support expressed across the state for the benefits that are derived from walking and bicycling. This is supported by the fact that Montana ranks highest among the states in the nation for commuting by walking and bicycling.

Understanding the types of users and their transportation needs is necessary to help establish more effective programs and practices to help local and state agencies use their resources efficiently. Limited financial resources, large and diverse geographic areas, the built environment, and other challenges complicate the effort to provide for pedestrians and bicyclists. Additionally, data for non-vehicular travel is sparse, which further complicates efforts to determine where investments should be made.

Percentage of Montana Commuters Who Walk/Bike to Work



Source: ACS 5-year data (2012-2016)

As transportation modes, pedestrian and bicycle travel is dependent on more than just the provision of sidewalks and bike lanes. As a result, there is more attention on land use, policy, education, encouragement, and evaluation of pedestrian and bicycle travel, as well as increased emphasis on the provision of facilities through the project development process. As Montana’s transportation system is developed, consideration must be given to the needs of those who, by choice or circumstance, walk or bike for transportation. This memorandum highlights the existing state of walking and bicycling in Montana while also identifying barriers and challenges to accommodating these users. The conditions discussed in this memorandum will be used to identify constraints and opportunities to improving the safety, accessibility, and mobility of current and future users of the transportation system.

2.0. STATE OF WALKING AND BICYCLING IN MONTANA

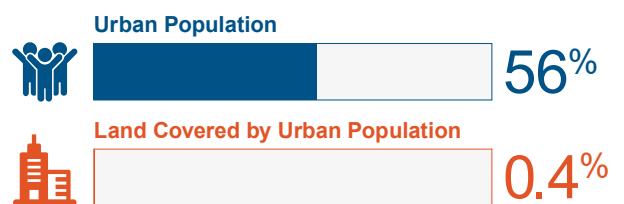
Many Montana communities have been experiencing an increased interest and investment in pedestrian and bicycle facilities and accessibility. More so than comfort and convenience, investments in the pedestrian and bicycle accommodations are aimed at achieving the key goal of making it safer to walk and bike. When safety perceptions of walking and bicycling increase, research suggests that more people will walk and bike.¹ As more people walk and bike, the environmental, health, and economic benefits that come from increased rates of walking and bicycling increase as well. The following sections provide information from a variety of sources meant to summarize the existing state of walking and bicycling in Montana.

¹ Aslak Fyhri, et al, The Influence of Perceived Safety and Security on Walking, 2010, <https://repository.tudelft.nl/view/tno/uuid:a1a0efe9-88a0-4d4d-bbfe-bdc817e9a4c5>

2.1. Setting and Population

Montana is a vast state with a low overall population density. The state has several urban areas separated by large rural stretches. In more developed areas, pedestrian and bicycle infrastructure primarily consists of sidewalks, ramps, crosswalks, median islands, signals, bike lanes, and shared use paths. These facilities provide essential connections between major activity centers and accommodate a mixture of users. In more rural areas, state highways typically serve as the main routes. While speeds are typically higher on rural highways, roadway shoulders often serve to accommodate walking and biking and can vary in width. In smaller cities and towns, state highways constructed decades ago may be the ‘main street’ passing through a community and may see a mixture of uses. Historically, primary focus has been to provide pedestrian and bicycle facilities within urban areas, while maintaining and improving shoulders along rural highways.

While Montana is sparsely populated, 56 percent of the population lives in urban areas, populations of 5,000 or more (23 USC 101(a)(33) and MCA 60-3-211). This leaves approximately 44 percent living in rural areas, which can be more difficult to provide for walking and bicycling modes due to long travel distances and lack of data to understand perceived demand. The range of contexts generates demand for walking and bicycling for both shorter utilitarian trips, and for longer recreational purposes. Even with the many rural areas, Montana still has one of the highest mode shares by walking and biking in the nation and is statistically a safe place to travel by these modes.



Source: 2017 MDT Highway Performance Monitoring System (HPMS) reporting to FHWA

2.2. Facility Types

Pedestrians and bicyclists have a wide variety of skill levels and tolerances for traffic stress. For example, a bicycle lane may be perfectly comfortable for some bicyclists, while others might only use a bike lane if it’s on a lower volume roadway. Similarly, in rural contexts, a paved or gravel shoulder may be sufficient for pedestrian travel when volumes are low, but as the numbers of passing vehicles increase, few may be willing to walk without a separated facility. Research has found that while there are many influencing factors, people who walk and bike are generally sensitive to the amount of adjacent traffic, its speed, and the amount of separation they have from vehicles.²

The type of user trip may also influence preferred facility types. Trips may be for transportation purposes if they connect an origin to a destination. For these types of trips, users may prefer the most direct route possible. For recreational trips, a broad range of factors may influence route choice. For example, users may choose a route which is longer but provides more comfort or scenic value, or they may base their route choice on exercise preferences.

Both pedestrian and bicycle facilities have a spectrum of possible facility types that improve comfort and safety. Roadway type and context is a key factor in determining the appropriate facility type. **Figure 1** demonstrates this spectrum of facility types and the relative level of comfort they provide.

Similar to lineal facilities, intersections and crossings also influence perceptions of comfort. The lack of crossing facilities over a wider, higher speed roadway acts as a barrier to pedestrian travel.

² Mineta Transportation Institute, Low Stress Bicycling and Network Connectivity, May 2012, <https://transweb.sjsu.edu/research/low-stress-bicycling-and-network-connectivity>

Intersections that have longer crossing distances and conflicting vehicle movements also negatively contribute to perceptions of safety and comfort. For bicyclists, intersections that drop bicycle facilities or require that the bicyclist merge across multiple lanes of traffic feel intimidating and stressful. Otherwise comfortable routes can be interrupted by uncomfortable intersections, thus potentially compromising the usability of the entire corridor.

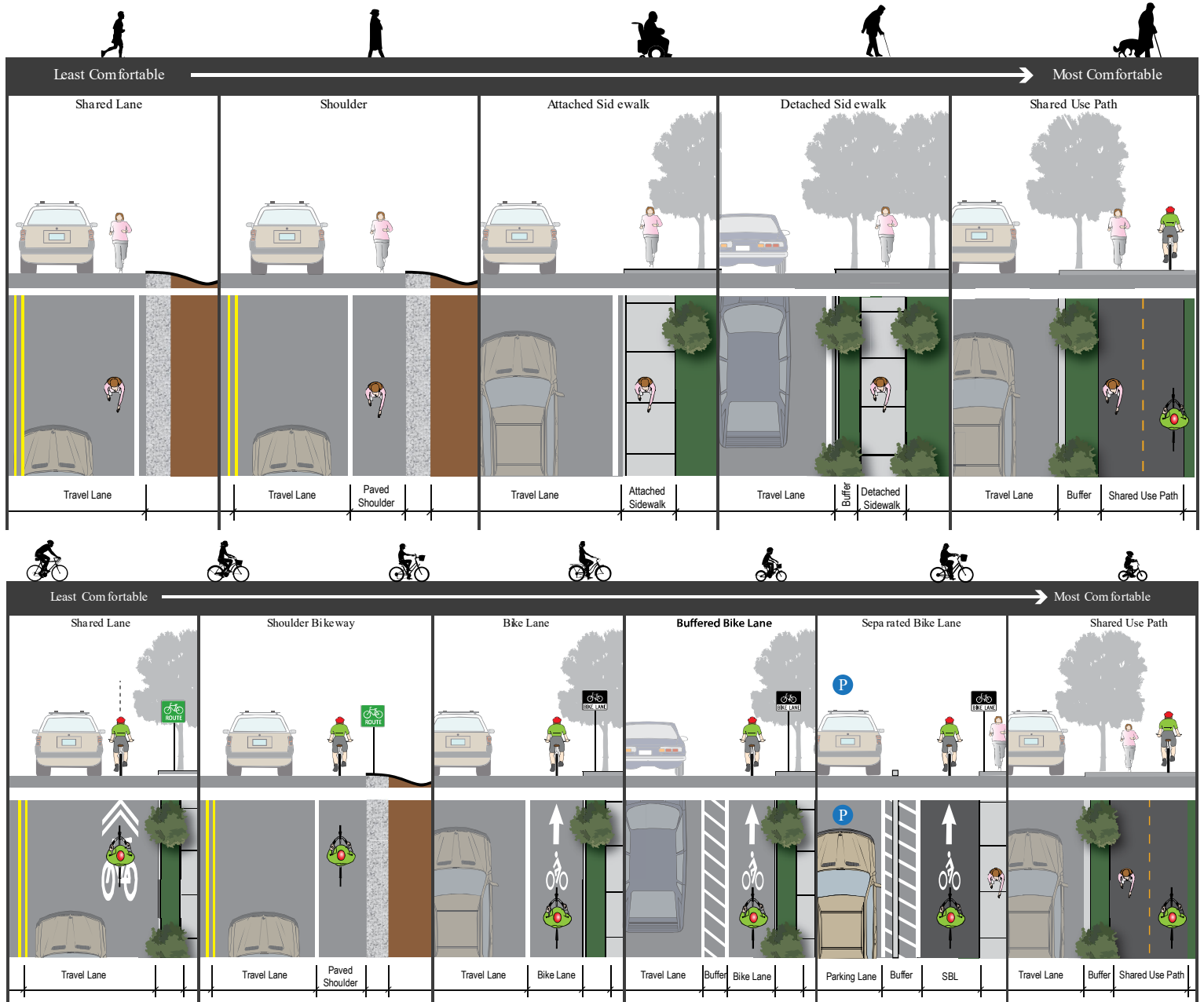


Figure 1: Walking and Bicycling Facility Types and Comfort Level

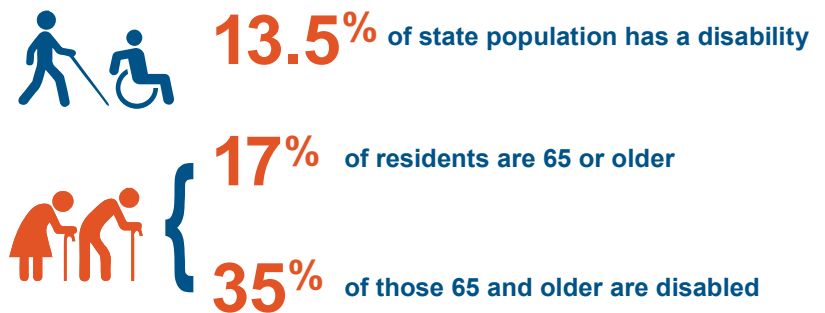
2.3. Transportation and Socioeconomic Conditions

Over 3.5 million households in the United States are contacted to complete the American Community Survey (ACS) each year. Since 2010, ACS has supplemented the U.S. Census, which only occurs once per decade. Among other characteristics, ACS data provides a snapshot of Montana's transportation and socioeconomic conditions. These conditions are summarized in this section at the statewide level. Unless otherwise noted, this summary was created using the most recently available ACS 5-year data (2012-2016).

Average Household Characteristics

The median age of Montana residents is almost 40 years old, which is slightly older than the national median age of almost 38 years old. As the general population ages, increased attention on supporting the aging demographic is needed. Moreover, understanding a state's share of older (65 and over) and younger (under 18) residents helps plan for a transportation system that supports people who may require additional accommodation to safely and comfortably walk and bike. In Montana, 22 percent of residents are under 18 years of age while nearly 17 percent are 65 or older.

Residents' ability status can also have implications on walking and bicycling accommodation and needs. In Montana, approximately 13.5 percent of residents identify as persons with a disability. Among Montanans with a disability, approximately 42 percent are 65 or older. Of all Montanans age 65 and older, roughly 35 percent have a disability. **Section 2.7** provides additional details on the Americans with Disabilities Act (ADA) and Accessibility.



Source: ACS 5-year data (2012-2016)

Race and Ethnicity, Poverty, and Income Level

ACS asks respondents questions about their race and ethnicity. In Montana, the White population makes up over 89 percent of residents, followed by American Indian and Alaska Native at 6.6 percent. People who indicate "Two or more races" compose 2.6 percent of the population, followed by Asian (0.7 percent), "Some other race" (0.5 percent), Black or African American (0.4 percent), and Native Hawaiian and Other Pacific Islander (0.1 percent).

Poverty and race/ethnicity are often correlated. Montanans' median household income is \$48,380 and \$27,309 per capita. In Montana, approximately 13 percent of those residents who reported White as their race live in poverty. In contrast, over 35 percent of those who identified as American Indian or Alaska Native live in poverty. Overall, an estimated 14.9 percent of Montanans live below the poverty level.

Nationally, households in lower income brackets tend to use non-motorized transportation for commuting purposes more often than wealthier people³. Pedestrian and bicycle transportation commute rates typically fall as income levels reach \$100,000 to \$149,999. However, commute rates begin to rise for households with incomes greater than \$150,000.

³ US Census Bureau, Release Number CB14-86, <https://www.census.gov/newsroom/press-releases/2014/cb14-86.html>

Educational Attainment and Employment

Most Montanans age 18 and over graduate with a high school degree or higher level of education (92.9 percent). This figure is approximately 5 percent higher than the national average. In Montana, 30 percent of residents have at least a bachelor’s degree. Level of educational attainment can influence walking and bicycling commute levels, as people with graduate degrees and people without a high school diploma tend to walk and bike to work more often than people with other education levels.

During the 2012-2016 ACS, the unemployment rate in Montana was 5.6 percent, compared to the national rate of 7.4 percent. Unemployment rates have dropped in recent years, with current rates of 3.6 percent and 3.9 percent for Montana and the Nation, respectively⁴.

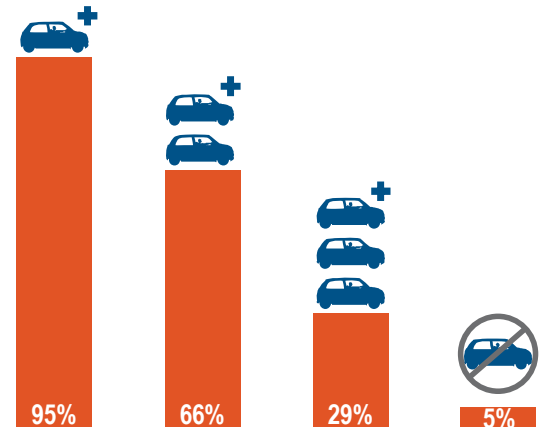
Vehicle Availability and Commuting to Work Characteristics

In Montana, 95 percent of households have access to at least one motor vehicle, with 66 percent having access to two or more, and 29 percent having access to three or more vehicles. This leaves approximately 5 percent of households having no access to a motor vehicle. Commuters who do not have access to a motor vehicle are more likely to use public transportation, walk, or bike.

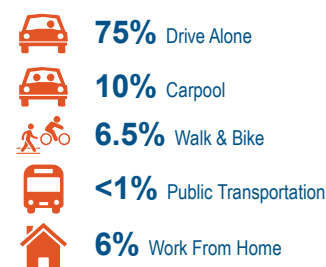
Approximately 75 percent of Montanans commute to work by driving alone with 10 percent carpooling and less than 1 percent using public transportation. According to the ACS, approximately 6.5 percent of people commuted to work by walking or biking. Across the state, approximately 6 percent of people work from home. The mean travel time to work in Montana, taking all modes into account, is roughly 17.9 minutes.

A National Household Travel Survey (NHTS) was conducted in 2017 by the Federal Highway Administration (FHWA). While the survey does not provide data specifically for Montana, nation-wide data can help identify trends that may be applicable at the state level. According to the 2017 NHTS, for every commute trip in the United States, there were approximately 8.8 other transportation-oriented trips by walking and 5.3 trips by bike. Additionally, there were 2.2 other recreational based trips by walking and 1.7 by bike. As commute trips are the only metric measured by the US Census Bureau, it stands to reason that this metric under represents overall walking and bicycling. In order to estimate the total number of walking and bicycling trips in Montana, the NHTS statistics were applied to the number of total trips made in Montana (see **Table 1**).

Percent of Montanans with Access to Vehicles



Commute to Work Mode Share



Source: ACS 5-year data (2012-2016)

⁴ US Bureau of Labor Statistics, August 2018, <https://www.bls.gov/web/laus/laumstrk.htm>

Table 1: Estimated Annual Trips by Type in Montana

Type of Trip	Walking	Bicycling	Driving**
Work Commute	12.7 million trips	3.6 million trips	107.7 million trips
Utilitarian*	112.1 million trips	19.2 million trips	650.5 million trips
Recreation	27.7 million trips	6.1 million trips	82.8 million trips
Estimated Total	152.5 million trips	28.9 million trips	840.9 million trips

*Includes all transportation trips minus school/work commute

** Driving includes SOV and carpool trips using these modes (car, SUV, van, pickup truck, and motorcycle/moped)

Note: Trip estimates based on ratios from the 2017 NHTS data for trip type and number. These ratios were then compared to state level data for number of workers (ACS 5-year estimates, 2012-2016) and average number of work trips per year. The estimated number of state-level work trips were then extrapolated using the 2017 NHTS rates derived from national level data.

2.4. Safety

The Moving Ahead for Progress in the 21st Century (MAP-21) Act and the Fixing America’s Surface Transportation (FAST) Act established four safety performance measures to reduce fatalities and serious injuries on all public roads. The four performance measures speak to the number and rate of fatalities and serious injuries. Under the *Highway Safety Improvement Program (HSIP) and Safety Performance Management Measures Final Rules*, which became effective on April 16, 2014, FHWA established a fifth performance measure focused on reduction of non-motorized fatalities and serious injuries. In addition, the rule establishes the process for State Departments of Transportation (DOT) and Metropolitan Planning Organizations (MPO) to establish and report their safety targets and progress made in meeting their safety targets. This process will be used by FHWA to assess whether State DOTs have met or made significant progress toward meeting safety targets. The five performance measures to assess performance and carry out the HSIP established in the rule include:

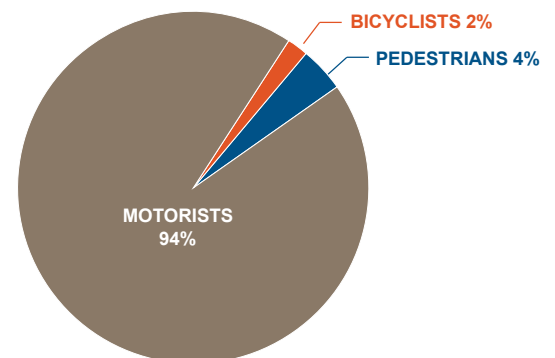
- Number of fatalities;
- Rate of fatalities per vehicle miles traveled (VMT)*;
- Number of serious injuries;
- Rate of serious injuries per VMT*;
- and
- Number of combined non-motorized fatalities and non-motorized serious injuries.

*Rates are based on 100 million VMT

In 2017, 23,834 crashes were reported on Montana roads and highways resulting in 186 fatalities and 731 serious injuries. Despite an increasing population, there has been an overall 41.6 percent decrease in fatalities and serious injuries over past 10 years.⁵ The Montana Department of Transportation (MDT) is focusing on safety to achieve Vision Zero and has invested to reduce roadway departure, intersection, impaired driving, and non-restraint use related crashes which result in traffic fatalities and serious injuries.

Between 2008 and 2017, on average there were 13 pedestrian fatalities and 35 seriously injured per year. These averages constitute 6.3 percent of all fatalities and 3.5 percent of all

All Fatalities and Serious Injuries in Montana (2008-2017)



Source: MDT Crash Data 2008 - 2017

⁵ Montana Department of Transportation, 2008-2017 Crash Data, https://www.mdt.mt.gov/other/webdata/external/Planning/crash_data/statewide/current/ALL-CRASH.XLSX

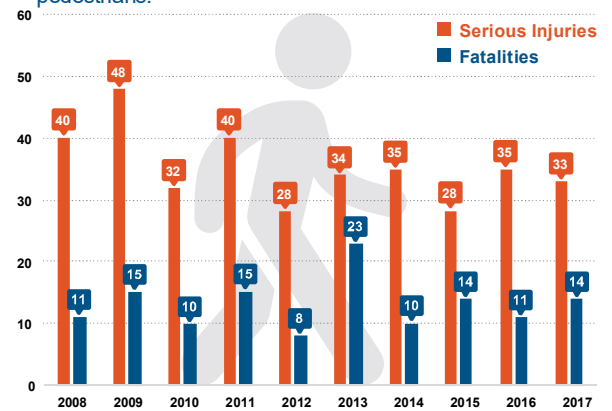
serious injuries during that period. For this same timeframe, on average there was 1 bicyclist fatality and 24 seriously injured each year, which accounts for 0.7 percent of fatalities and 2.3 percent of all serious injuries. The total number of combined non-motorist fatalities and serious injuries decreased from 98 in 2008 to 65 in 2017, an average decrease of approximately 4.5 percent per year over the ten-year period, an overall decrease of 34 percent.

Between 2012 and 2016, 33 percent of pedestrian-involved fatal and serious injury crashes, and 14 percent of bicycle-involved fatal and serious injury crashes, were alcohol or drug related. In approximately 25 percent of the fatal or serious injury pedestrian-related crashes, the pedestrian was under the influence of alcohol or drugs. Conversely, approximately two percent of bicyclists were under the influence in fatal or severe injury bicycle related crashes.

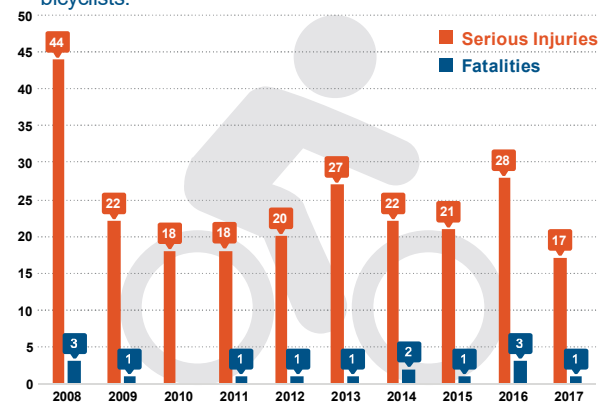
Crash analysis conducted in Montana urban areas shows that a high percentage of pedestrian- and bicycle-involved crashes occur at, or were related to, intersections. Conflict points exist at intersections due to the crossing of vehicle and non-motorist paths. Across the state, approximately 30 percent of pedestrian fatalities or serious injuries occurred at, or were related to, intersections between 2012 and 2016. This number increases to 58 percent for bicyclist fatalities or serious injuries. Approximately 82 percent of pedestrian-involved intersection crashes and 92 percent of bicycle-involved intersection crashes occurred in an urban setting.

Overall numbers for pedestrian and bicycle crashes are typically underreported as many minor collisions that do not involve injury or significant property damage are unlikely to involve a police report⁶. Since minor crashes can go unreported, it can be difficult to properly identify appropriate safety countermeasures. Additionally, the total number of non-motorized crashes, fatalities, and serious injuries does not provide a complete picture of pedestrian and bicycle safety. Further investigation into road system, location, time of day, lighting conditions, month of year, age, user behavior, and other causal factors is needed to help develop crash reduction strategies. Repeat occurrences of a particular type of crash or contributing factor may help identify countermeasures proven to address identified trends. A more detailed review of pedestrian and bicycle crash data for the state can be found in the *Montana Comprehensive Highway Safety Plan*. Some local

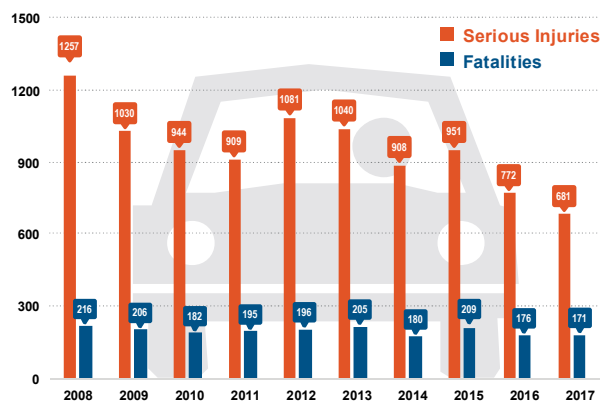
Over the past 10 years (2008-2017), **6.3%** of all traffic related fatalities and **3.5%** of serious injuries in Montana were pedestrians.



Over the past 10 years (2008-2017), **0.7%** of all traffic related fatalities and **2.3%** of serious injuries in Montana were bicyclists.



Over the past 10 years (2008-2017), **2.1%** of all motorists involved in a crash in Montana were fatally injured and **0.4%** were seriously injured.



Source: MDT Crash Data 2008 - 2017

⁶ D. Shinar et al, Accident Analysis & Prevention, Volume 110, Under-reporting bicycle accidents to police in the COST TU1101 international survey, October 2017, <https://www.sciencedirect.com/science/article/pii/S0001457517303391>

communities also have *Community Transportation Safety Plans* which evaluate crash data and contributing factors in more detail at the local level.

2.5. Benefits of Walking and Bicycling

There are many benefits from walking and bicycling at the individual, household, and community levels. These benefits increase as walking and bicycling levels increase and can often be hard to quantify. The benefits from walking and bicycling have positive impacts on residents' health, the economy, and the environment. These positive impacts often cut across multiple categories. For example, healthcare and transportation cost savings benefit individual residents, while saving money at the state level due to reduced health care costs. Reduced motor vehicle emissions save money and contribute to improved air quality for all. Benefits of walking and bicycling positively contribute to a higher quality of life even for residents who choose to use other forms of transportation.

Montana already benefits from the state's current levels of walking and bicycling. If current levels of walking and bicycling continue throughout the plan's lifespan (20 years), the state could anticipate the following results⁷:

- An estimated 29,000 Montanans could meet the Center for Disease Control's (CDC) recommended levels of physical activity through walking and bicycling, contributing to \$878.3 million in healthcare cost savings over the next 20 years.⁸
- The diversion of motor vehicle trips to walking and bicycling trips could help Montanans save an estimated \$1.48 billion in household transportation costs over the next 20 years.⁹ A reduction in vehicle miles travelled may impact state fuel tax revenue, similar to how increased fuel efficiency has reduced revenue.
- The diversion of motor vehicle trips to walking and bicycling trips could help Montanans reduce 1.6 million metric tons in greenhouse gases and criteria pollutants over the next 20 years, helping save the state \$116.6 million in prevention and clean-up costs.¹⁰

Over the Next 20 Years

29,000 

Montanans could meet the CDC's recommended level of physical activity through walking and bicycling (~30 minutes/day)

Saving **\$878.3 M**
in healthcare costs

Diversion of vehicle trips could save Montanans \$1.48 billion in household transportation costs and reduce 1.6 million tons of pollutants from the air



⁷ Current levels were derived from ACS data (minus the stated Margin of Error: 1.32% bike mode share, 4.84% walk mode share) plus NHTS data.

⁸ This estimate comes from extrapolating current levels of walking and bicycling across population, employment, and school attendance forecasts for the next 20 years. Adjusted for inflation, the Centers for Disease Control and Prevention estimates "the mean annual expenditure difference per capita for inactive adults compared to active adults was \$1,427". Source: <http://www.cdc.gov/nccdphp/dnpao/docs/carlson-physical-activity-and-healthcare-expenditures-final-508tagged.pdf>, page 317.

⁹ Household savings were calculated based on the average annual cost per mile for passenger vehicles and the average annual car, SUV, and van person trip length from NHTS 2017. Average operating costs originated from the American Automobile Association and American Transportation Research Institute. Sources: <https://nhts.orl.gov/tables09/ae/work/Job63995.html>, <http://exchange.aaa.com/automobiles-travel/automobiles/driving-costs/#.Wt9eRojwa72>, <http://atri-online.org/wp-content/uploads/2017/10/ATRI-Operational-Costs-of-Trucking-2017-10-2017.pdf>

¹⁰ Calculated based on the number of motor vehicle trips reduced due to biking and walking, estimated to find a total reduction in annual vehicle miles traveled. Federal-level data provide estimates of average annual emissions for passenger cars and light trucks. Using these values and the average person trip length by mode, the pounds of GHG and air pollutants reduced by diverting car trips to active modes of transportation were estimated. Sources: <https://www3.epa.gov/otag/consumer/420f08024.pdf>, <https://nhts.orl.gov/tables09/ae/work/Job63982.html>, https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf

2.6. Health and Equity

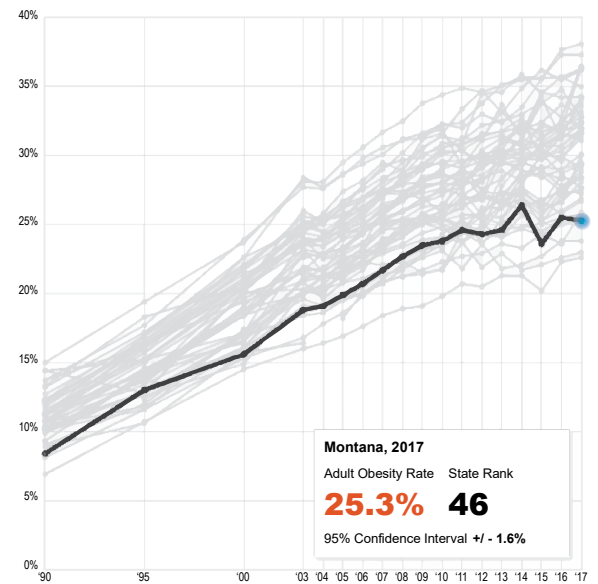
Montana’s residents are statistically some of the most active individuals in the country. The state has consistently been in the lower groupings of obesity. In 2017, the state ranked 46th out of 50 in levels of obesity, meaning only 4 states have less obese populations overall.¹¹ While this is positive, the trendline since 1990 to 2017 (8.4 percent obese to over 25 percent obese) has shown a substantial increase in obesity both throughout the country and in Montana.

According to the CDC, over 60 percent of the state population is overweight with a Body Mass Index (BMI) of 25 or greater. When evaluated based on age, approximately 25 percent of the state’s adult population and 23 percent of 10- to 17-year olds are obese (BMI 30+). In 2017, three in every four adults and seven in ten children in Montana did not meet physical activity recommendations.¹² Walking and bicycling for transportation are part of a healthy lifestyle, which can help people stay at a healthy weight or lose weight. Maintaining a healthy weight can lower the risk of diabetes, stroke, heart disease, high blood pressure, osteoporosis, and certain cancers, as well as reduce stress and boost mood.

Although obesity threatens the health and well-being of all Americans, obesity disproportionately affects low income families and minorities. In Montana, low-income¹³ and Native American communities suffer higher rates of diabetes, indicating a heightened risk for obesity.¹⁴ **Figure 2** shows adult obesity and physical activity rates for Montana.

For many Montanans, walking and bicycling represent an important opportunity for mobility. These modes serve a key function in expanding the social and educational opportunities available to many segments of the state’s population who are frequently transportation disadvantaged, including senior citizens, children, the disabled community, minority populations, and low-income individuals and families. Providing pedestrian and bicycle facilities in communities where these populations are prevalent helps ensure mobility and promotes transportation equity for all Montanans.

Adult Obesity Rates, 1990 to 2017



Physical Activity Among Adults, 2006 to 2017

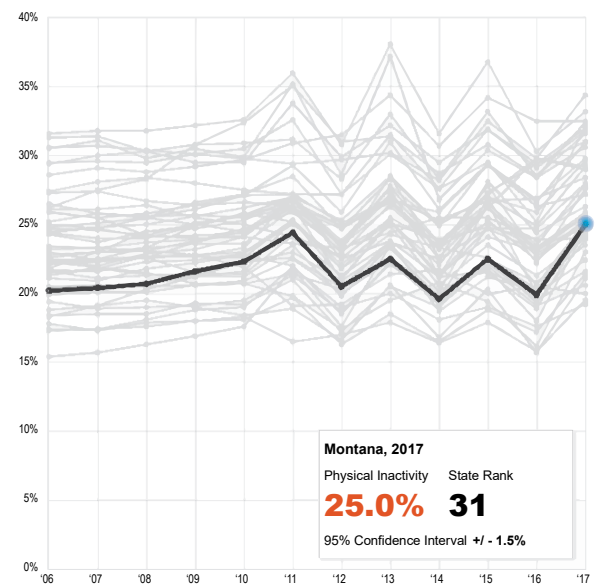


Figure 2: Montana Obesity Rate and Physical Inactivity Statistics

¹¹ The State of Obesity. Adult Obesity in the United States, Physical Inactivity in the United States, <https://stateofobesity.org/adult-obesity/>

¹² Montana Department of Public Health and Human Services, 2017 Montana State Health Assessment, <https://dphhs.mt.gov/Portals/85/ahealthiermontana/2017SHAInitialFindingsPresentation082917.pdf>

¹³ Montana State University Extension Economics. Montana Poverty Study Report Card, County and Reservation Data, <http://www.montana.edu/extensionecon/countydata/index.html>

¹⁴ Centers for Disease Control. Trends in Diabetes and Risk Factors, County Data, <https://www.cdc.gov/diabetes/atlas/obesityrisk/30/atlas.html>

Recognizing the benefit of improving safe pedestrian and bicycle access for kids, Montana is involved in the nationwide Safe Route to Schools (SRTS) initiative. SRTS is aimed at developing both infrastructure and promotional (educational, encouragement, and enforcement) components to improve safety for those walking or biking to school. Successful SRTS programs help to increase children’s physical activity level and improve safety and air quality in and around schools. While current federal funding no longer provides specifically for this program, many Montana schools participate through other means.

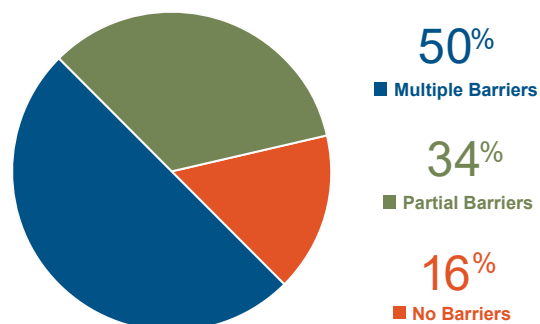
2.7. ADA and Accessibility

Under Title II of the Americans with Disabilities Act, state and local governments must assure all of their physical assets are ADA compliant including both existing and newly-constructed facilities. Features within roadway right-of-way include elements such as curb ramps, sidewalks, crosswalks, median crossings, and pedestrian activated signal systems. Examples of non-compliant accessibility barriers include steep curb ramp slopes or vertical sidewalk discontinuities (i.e. uneven sidewalks) that may cause trip hazards. ADA standards are applicable to persons with seeing, hearing, mobility, mental, and learning disabilities. Persons using adaptive bicycles and other mobility assistance devices should be considered and accounted for in facility design and maintenance.

MDT has been actively working on improvements to pedestrian accessibility. In 2010, MDT adopted the draft Public Right-of-Way Accessibility Guidelines (PROWAG)¹⁵. The PROWAG¹⁶ is currently considered a “draft” at the federal level and intended as an updated resource to the ADA Accessibility Guidelines (ADAAG), both of which were developed by the United States Access Board. The ADAAG focuses mainly on facilities on sites but not conditions and constraints unique to public rights-of-way. PROGWAG addresses issues including access for blind pedestrians at street crossings, wheelchair access to on-street parking, and various constraints posed by space limitations, roadway design practices, slope, and terrain.

At the state level, MDT developed and adopted the updated *ADA Transition Plan*¹⁷ in 2016 which identified a variety of methods to ensure improvements are incorporating the latest design guidance. MDT maintains an inventory of ADA features within MDT right-of-way such as curb ramps, pedestrian signals, and sidewalk connectivity. ADA compliance data is used to measure and track progress toward eliminating accessibility barriers and ultimately informs funding decisions and the project development process. MDT reports annually to FHWA on progress. As of 2018, approximately 16 percent of pedestrian signals and curb ramps in MDT right-of-way were ADA compliant and had no identified barriers to accessibility. Approximately 34 percent of curb ramps and pedestrian signals had partial barriers noted, while 50 percent had multiple barriers. MDT is

Curb Ramps and Pedestrian Signals



Source: MDT ADA Transition Plan, online database, p.8
(Only signals and curb ramps within MDT right-of-way)

¹⁵ Montana Department of Transportation, Public Rights-of-Way Accessibility Guidelines, November 19, 2010, https://www.mdt.mt.gov/other/webdata/external/cadd/design_memos/2010-11-19_PROWAG.PDF

¹⁶ United States Access Board, Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way, July 26, 2011, <https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines>

¹⁷ Montana Department of Transportation, *ADA Transition Plan*, December 2016, <https://www.mdt.mt.gov/other/webdata/external/civilrights/ADA-TRANSITION-PLAN.pdf>

working toward full compliance with ADA requirements, however, some existing facilities may already be upgraded to the greatest extent feasible given existing physical constraints or network connectivity needs.

Many local jurisdictions have also developed ADA transition plans for their facilities in public rights-of-way. These plans include a list of physical barriers, recommendations for improvements, priority scheduling for barrier removal, and a plan for achieving ADA compliance. Typically, a site assessment is conducted in which curb ramps, intersection features, sidewalk gaps and discontinuities, crosswalks, and other pedestrian improvements identified in local planning documents are assessed for ADA compliance. ADA transition plans are an important step towards providing equal access to programs, services, and activities.

2.8. Economic Development and Tourism

Montana is a state filled with natural beauty. Numerous mountain ranges, national parks, rivers and other attractions have fueled a booming tourism industry for decades. Travelling on foot or by bicycle offers a different experience to driving that appeals to many. The Montana Department of Commerce (MDOC) plays an important role in fostering community lead economic development and tourism. Part of the MDOC's mission is to develop and improve public infrastructure for the state's citizens by providing grants and technical assistance to Montana's communities and counties. The MDOC provides grant opportunities focused on planning activities for downtowns. Many times, downtown revitalization plans focus on making communities' downtown more walk and bike friendly, which can generate more business and attract tourism. The Montana Office of Tourism and Business Development (MOTBD) is a division of the MDOC which aims to sustain and enhance the quality of life for all Montanans and their communities. The MOTBD provides information on all types of tourism, including hiking, mountain biking, and long-distance bicycle touring across Montana.¹⁸ The MOTBD also provides information for popular attractions, lists of places to go and things to do, and provides resources for bicycling routes and hiking areas.

To a prospective bicycle tourist, there are many resources that provide trip planning information, including detailed route maps, trail maps, internet resources, and a state bicycling map.¹⁹ Resources can be found on MDT's website on the bicycling touring page²⁰. MDT's *Bicycling the Big Sky* map provides information to those interested in long distance riding on state highways. The map provides information on shoulder widths, roadway grades (particularly those sections exceeding 2.5 percent grade), daily traffic volumes (both trucks and total vehicles), services, and campground accommodations along the state highway system. There are also many state and local non-profits and organizations that provide additional information and resources to tourists travelling on foot and by bike.

There are multiple research studies that recognize the benefit of tourism, including hiking and bicycling. For example, the University of Montana Institute for Tourism and Recreation Research (ITRR) conducts research on travel, recreation and tourism in Montana. A 2013 study²¹ found that day hiking was the second most popular activity (behind scenic driving), by nonresidents who visited

¹⁸ Montana Office of Tourism, Bicycling, <https://www.visitmt.com/search.html?search=bicycling>

¹⁹ Montana Department of Transportation, *Bicycling the Big Sky Map*, https://mdt.mt.gov/travinfo/docs/bike_map.pdf

²⁰ Montana Department of Transportation, *Bicycle Touring – Bicycling Montana's Highways*, <https://www.mdt.mt.gov/travinfo/bikeped/bikes/touring.shtml>

²¹ Institute for Tourism and Recreation Research, *Travel and Recreation in Montana: 2013 in Review and 2014 Outlook*, https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=1271&context=itr_pubs

Montana throughout the year. The study also found that 77 percent of Montana residents used walking/jogging/biking paths while 72 percent used hiking trails during 2013.

Recognizing the value of non-motorized recreation, many communities have increased investment in their own local walking and bicycling systems and have developed plans to provide and maintain facilities such as trails and shared use paths. These local systems may be used for a variety of transportation and recreation purposes including hiking and mountain biking. For many communities, these systems help increase tourism and economic development opportunities.

The popularity of some areas of the state for various tourism activities has influenced infrastructure improvements and maintenance efforts, including when and where to prioritize early season shoulder sweeping and prioritizing shared use path maintenance efforts. Strava, a user-based application for runners, hikers, and bicyclists, tracks user activity data. The data is developed into heat maps by Strava and is updated monthly to represent user activity. While the application is aimed at recreational activities, and thus should not be considered comprehensive, the data provides some level of understanding of the routes that users take when walking, hiking, running, or bicycling across the state. Based on the user data, the most commonly used areas surround Montana communities. The heat map also shows areas across the rural parts of the state, mostly on the state highway system, that are popular activity areas. **Figure 3** shows a heat map of pedestrian and bicycle activity on Strava Metro.

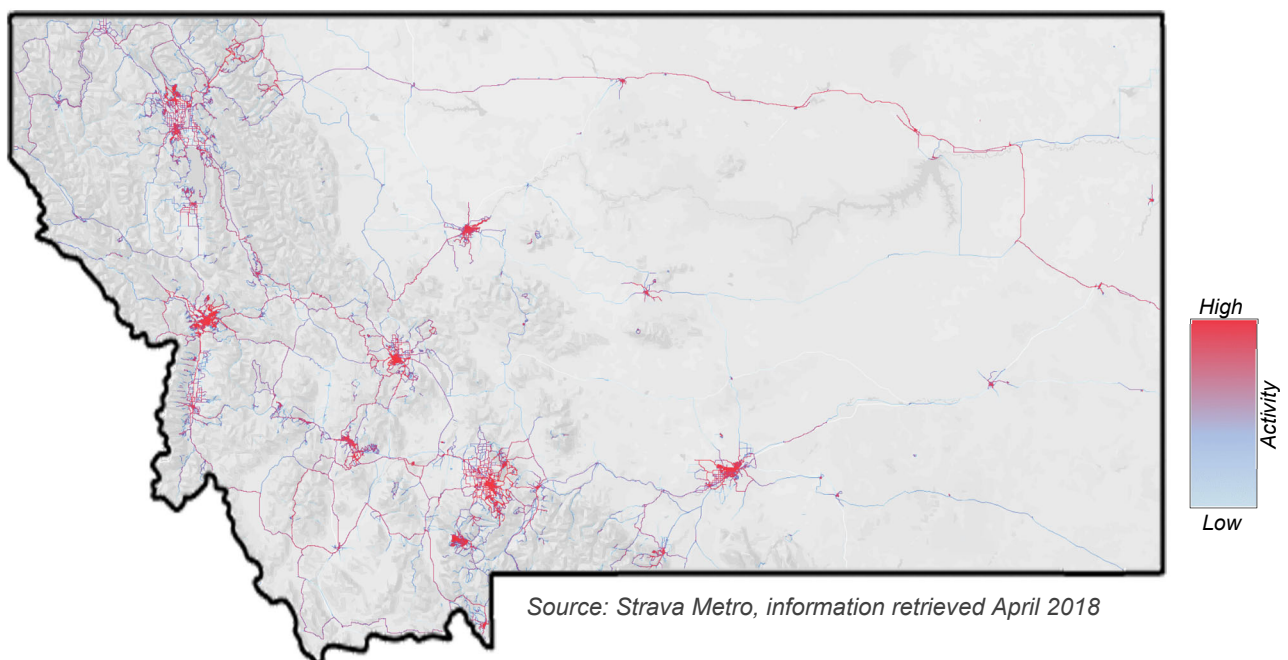
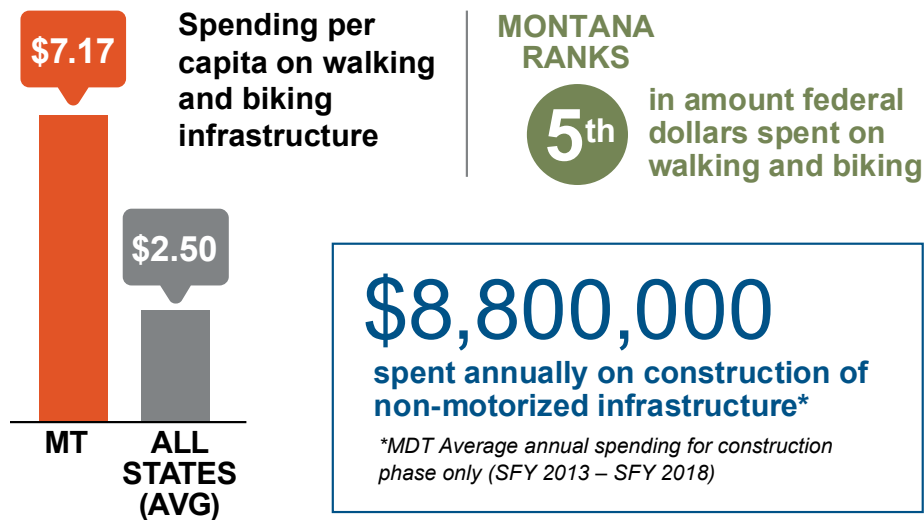


Figure 3: Activity Use Tracking on Strava Metro

2.9. Investments

Funding for pedestrian and bicycle education, enforcement, encouragement, and infrastructure exists at the federal, state, and local levels. Some infrastructure projects are uniquely non-motorized, while others feature pedestrian and/or bicycle infrastructure as a component of a larger roadway project. Due to the various funding sources involved and difficulty calculating the proportional costs for larger roadway projects, an exact expenditure for pedestrian and bicycle facilities is difficult to accurately determine. One specific source to quantify investments in pedestrian and bicycle facilities is the federal Transportation Alternatives (TA) program which is administered by MDT. While this program doesn't capture all investments in pedestrian and bicycle facilities, it helps provide a representative evaluation of spending through the dedicated funding source. Through the TA program, Montana is ranked 5th in the nation for per capita spending on walking and biking, spending almost \$9 million annually, or just over \$7 per person each year. Additionally, there are other programs and local-level investments that are made to support walking and biking in addition to those from the TA program.



Source: Federal Highway Administration Fiscal Management Information System

The Recreational Trails Program (RTP) receives approximately \$1.6 million annually under the current federal transportation bill. Decision makers are tasked with allocating 30 percent of RTP funding to motorized trail projects, 30 percent to non-motorized specific projects, and 40 percent to diversified (motorized and non-motorized use) projects.

The Montana Department of Health and Human Services (DPHHS) Building Active Communities Initiative (BACI) provides in-depth training, mentoring, and technical assistance to support community-led approaches to develop active and healthy communities. The initiative provides community leaders, city planners, and officials with technical training and assistance aimed at creating healthier built environments. Many Montana communities have received education and technical assistance from BACI about design strategies to help increase access to safe, routine opportunities for physical activity.

Aside from federal and state funded walking and bicycling investments, many local agencies have shown a commitment to investing in non-motorized education and infrastructure within their communities. These local programs teach safe behavior, encourage walking and bicycling trips, and bridge the gap between motorized and non-motorized users. Some local communities have utilized programs such as bike ambassadors, SRTS coordinators, and bicycle and pedestrian coordinators to carry out investments.

3.0. BARRIERS AND CHALLENGES

Despite the inherent advantages in Montana that make walking and bicycling attractive options for transportation, there are also substantial challenges. Montana is the 4th largest state with a land area of over 147,000 square miles. With just over one million residents, Montana is one of the least densely populated states, ranking denser than only Wyoming and Alaska. Given the vast land area, the state faces tremendous challenges providing an effective transportation system which meets the needs of all users. This section summarizes some of the challenges faced in Montana covering a variety of topics, including infrastructure, education, user behavior, and funding.

3.1. System Size and Maintenance

Montana's transportation system is extensive and is owned and maintained by multiple entities. Montana is one of five states where all public roads are open to cyclists, making for a large system of potential bicycling opportunities. Communities also have other discrete trail systems and bicycle and pedestrian networks that include shared use paths and sidewalks within roadway right-of-way, on street dedicated bicycle facilities, parks, and off system corridors.

With regards to roadways, there are over 75,000 centerline miles of roadway in Montana, of which, MDT is responsible for maintaining approximately 13,000. In fiscal-year (FY) 2016, MDT spent over \$112 million (nearly half of all state funded expenditures) on system preservation and maintenance on these facilities.

The other 62,000 centerline miles in the state are owned and maintained by various other jurisdictions, most commonly cities and counties. A small portion are also maintained by private entities and various other state and federal agencies. As with the road system, pedestrian and bicycle facilities have varied ownership. While this may help distribute the funding responsibilities across multiple entities, difficulties in planning, constructing, and maintaining facilities can arise which may result in system gaps or inconsistencies.

While representing only 17 percent of total centerline mileage in the state, MDT routes accommodate approximately 76 percent of the annual vehicle miles travelled within the state²². Nearly seven percent of MDT routes are within an urban area boundary. In urban contexts, networks of high quality pedestrian and bicycle facilities can typically be implemented more effectively than in rural areas. Urban areas tend to have greater numbers of non-motorized users and are more densely developed making it easier to construct pedestrian and bicycle facilities that span shorter distances and accommodate a greater population.

MDT has 125 maintenance crews located throughout the state. MDT Crews plow over 4 million miles of road, that's 160 times around the earth each winter!

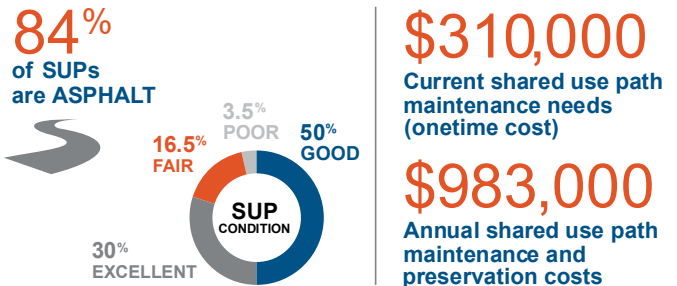


Source: MDT 2016 Factbook

²² Montana Department of Transportation, 2016 Factbook, <https://www.mdt.mt.gov/publications/docs/brochures/factbook.pdf>

In 2015, MDT prepared the *Shared Use Paths Inventory and Detailed Maintenance Plan*²³. The purpose of the plan was to inventory the mileage of shared use paths within the state’s right-of-way as well as to describe and quantify maintenance activity and requirements. While the focus of the plan was limited to shared use paths within MDT right-of-way, which only represent a portion of what exists in the state, the results help define a level of maintenance and needs for shared use paths. The inventory reported that Montana had 182.2 miles of shared use paths within MDT right-of-way, with another 6.9 miles constructed since 2015. Current maintenance needs to restore these paths to excellent condition totals approximately \$310,000, a onetime cost. Approximately 40 percent of those costs are the responsibility of MDT, the other 60 percent are the responsibility of cities and counties through maintenance agreements.

Shared Use Paths in State Right-of-Way



Source: MDT Shared Use Paths Inventory and Detailed Maintenance Plan
Note: Data is only for shared use paths within MDT right-of-way

There are also other maintenance activities that are essential for maintenance. These include activities such as snow removal, sweeping, and mowing, along with ongoing pavement preservation activities like pavement seals and pavement overlays. The annual costs for general maintenance activities of shared use paths was just under \$983,000 in 2015, which is mostly snow removal costs. These costs are what is estimated to be needed to complete all necessary maintenance activities, it does not reflect the actual amount of money being spent on maintenance activities. Of the general maintenance costs, MDT is responsible for approximately 30 percent while cities and counties are responsible for 70 percent. While local agencies have accepted maintenance responsibility through agreements with MDT to maintain some of these shared use paths, many jurisdictions have trouble meeting their maintenance obligations due to lack of funding, limited personnel, and insufficient equipment.

In addition to shared use paths within MDT right-of-way, many Montana communities have substantial networks of sidewalks, shared use paths, on-street bikeways, and bike routes. For example, the Bozeman area has over 30 miles of paved shared use paths within their jurisdiction, while Billings and Missoula have over 50 miles. Over time, deferred maintenance on these facilities competes with capital projects for scarce local dollars. As with users of other modes, users of walking and biking facilities desire a seamless system with high-quality facilities, regardless of ownership.

3.2. Funding

Funding has historically been, and is likely to continue to be, a challenge for developing and maintaining walking and bicycling facilities. No agency alone has sufficient funding or resources to implement and maintain transportation networks to the levels desired. Funding for pedestrian and bicycle projects, as well as maintenance activities, can come from a number of sources, including private, local, state, and federal. Successful communities have found that leveraging a variety of funding sources is the most effective in providing for non-motorized transportation.

²³ Montana Department of Transportation, *Shared Use Paths Inventory and Detailed Maintenance Plan*, <https://www.mdt.mt.gov/publications/docs/brochures/SUP-Maintenance-Plan.pdf>

Various entities such as the American Association of Retired Persons (AARP), Blue Cross, and other organizations which promote non-motorized travel provide grants to communities which are often utilized for planning, safety and education programs, and small infrastructure projects. The MDOC offers grant funding for planning, small and large infrastructure projects, tourism activities, economic development, downtown revitalization, and many other purposes that strengthen Montana’s economy through the development and enhancement of the state’s tourism and recreation industry.

Many Montana communities are also putting their own funding towards non-motorized transportation by establishing local funding sources to supplement state and federal funding. Examples of programs at the local level that fund pedestrian and bicycle facilities include:

- General Obligation Bond (Billings)
- Open Space and Parks Bond (Bozeman)
- Pedestrian Safety District (Lockwood)
- Arterial and Collector District (which provides non-motorized facilities as part of projects) (Bozeman)
- Sidewalk Subsidy Program (Missoula)

At the federal level, FHWA maintains a list of potential funding sources administered by various entities which can be used for pedestrian and bicycle activities or improvements²⁴. While multiple potential funding sources exist, there are still significant gaps. Many sources are limited in funding, restricted to specific eligibilities and requirements, and are allocated on a competitive basis. Specific to bicycle facilities, federal law requires that they “be principally for transportation, rather than recreation purposes.” This law applies to all federal funding sources except Montana’s Recreational Trails Program, which is administered by Fish Wildlife and Parks (FWP).²⁵ While the definition of transportation versus recreation is not always clearly defined, improvements in urban areas, or ones that connect to essential services, tend to be easier to fund. Improvements oriented at recreational corridors or towards bicycle touring may require more restrictive funding.

One state-administered funding source specific to non-motorized improvements is the TA program. The TA program funds a variety of local transportation improvements such as pedestrian and bicycle facilities, recreational trails, safe routes to school, ADA improvements, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity. TA funding is required to be split between urban and rural areas. Areas with a population of 5,000 or less, and areas with a population of greater than 5,000, each receive 25 percent of the total funding. The remaining 50 percent of funding is distributed regardless of population size.

\$10.8M Transportation Alternatives (TA) average funding dollars applied for yearly

\$4.5M average annual TA funding dollars available

30% of submitted TA applications are funded

Source: MDT TA Funding Historic Average (SFY 2013 – SFY 2018)

²⁴ Federal Highway Administration, Pedestrian and Bicycle Funding Opportunities, US Department of Transportation Transit, Highway, and Safety Funds, https://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.pdf

²⁵ Montana State Parks, Recreational Trails Program, <http://stateparks.mt.gov/recreation/rtpGrants.html>

Since FY 2013, MDT has received an average of \$10.8 million in funding requests each year. Of those requests, approximately 30 percent have been funded. The difference between funding requests and available money shows that the interest in investment outpaces available funding. It should be noted that this only includes submitted TA applications. Some localities may choose to submit only their top priority projects in order to increase chances of securing funding. Additionally, underdeveloped applications are often unable to be funded.

In 2017, Montana Code Annotated (MCA) 60-3-304²⁶ (Distribution and Apportionment of Highway Funds: Shared Use Paths) was modified to include provisions that MDT recommends construction and maintenance standards for SUPs and provides a uniform system for signing shared use paths. MCA 60-3-304 also provides for revenue from a five-dollar optional fee on motor vehicle registrations that is allocated by MDT across five districts for maintaining, repairing, and establishing shared use paths, as well as safety education. Since fee collection began in July 2017, just under \$20,000 has been collected. Until \$50,000 in administrative costs are recovered, no funding is available for maintenance or safety activities. Fees collected are currently averaging around \$1,500 a month. At that rate, it will be almost 2 more years before funds will begin to accumulate for maintenance and safety activities.

Not all pedestrian and bicycle facilities are developed as stand-alone projects; many are provided as part of associated roadway construction projects. For projects on the state transportation system, funding is provided through a combination of federal and state funding sources. Federal funding comprises the bulk of highway construction funding (generally 87 percent) with state funds used for the required match. The fuel tax increase passed during the 2017 Legislature (HB 473) provides MDT sufficient cash flow to sustain the match for the federal-aid construction program, which was in jeopardy prior to 2017. This increase does not provide sufficient funding long-term for MDT to expand infrastructure or implement a more robust state funded construction program. State funding has not increased substantially since 2004. While the state population and vehicle miles travelled continue to grow, fuel efficiency gains have resulted in mostly stagnant revenues. MDT estimates that in the period 2016-2026, available revenues will only be able to meet approximately one third of the anticipated needs (approximately \$5 billion of the \$15 billion of projected needs).

The past five federal transportation bills have had programs that provided some level of funding for pedestrian, bicycle, and trail related projects. The programs and funding levels have changed with each funding. While the federal fuel tax has remained the same since 1993, the cost of building and maintaining infrastructure has increased resulting gaps between available funding and needs. The most recent bills and annual apportionment levels are summarized in **Table 2**. Note that the table shows approximate annual apportionment levels; actual obligation (spending) levels differ due to federal obligation limitations, typically set around ninety percent. As the table shows, overall potential funding available for non-motorized transportation programs has declined from a yearly average of \$9.3M to approximately \$6.3M annually, a decrease of nearly 27 percent in non-motorized funding dollars per year. The eligible funding categories have also evolved and have become more specific to pedestrian and bicycle projects.

²⁶ Montana Code Annotated, Title 60, Chapter 3, Part 3, Section 4,
https://leg.mt.gov/bills/mca/title_0600/chapter_0030/part_0030/section_0040/0600-0030-0030-0040.html

Table 2: Federal Transportation Bill Funding for Pedestrian and Bicycle Improvements

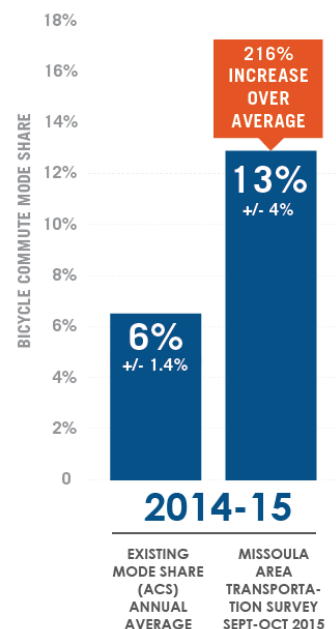
Program	Funding Years	Non-motorized Transportation Program	Annual Montana Apportionment
SAFETEA-LU Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users	2005-2012	Three programs: Community Transportation Enhancements Program (CTEP), SRTS, and RTP. CTEP program eligibility went beyond non-motorized improvements.	\$9.3M
MAP-21 Moving Ahead for Progress in the 21 st Century Act	2012-2014	Combines CTEP, SRTS and RTP Funding into one: TA Program. Funding eligibility narrowed to non-motorized improvements. RTP was optional, MDT chose to continue RTP.	\$5.8M
FAST Act Fixing America's Surface Transportation Act	2015-2020	Continued same eligibility of entities and activities as MAP-21.	\$6.3M

3.3. Context and Environment

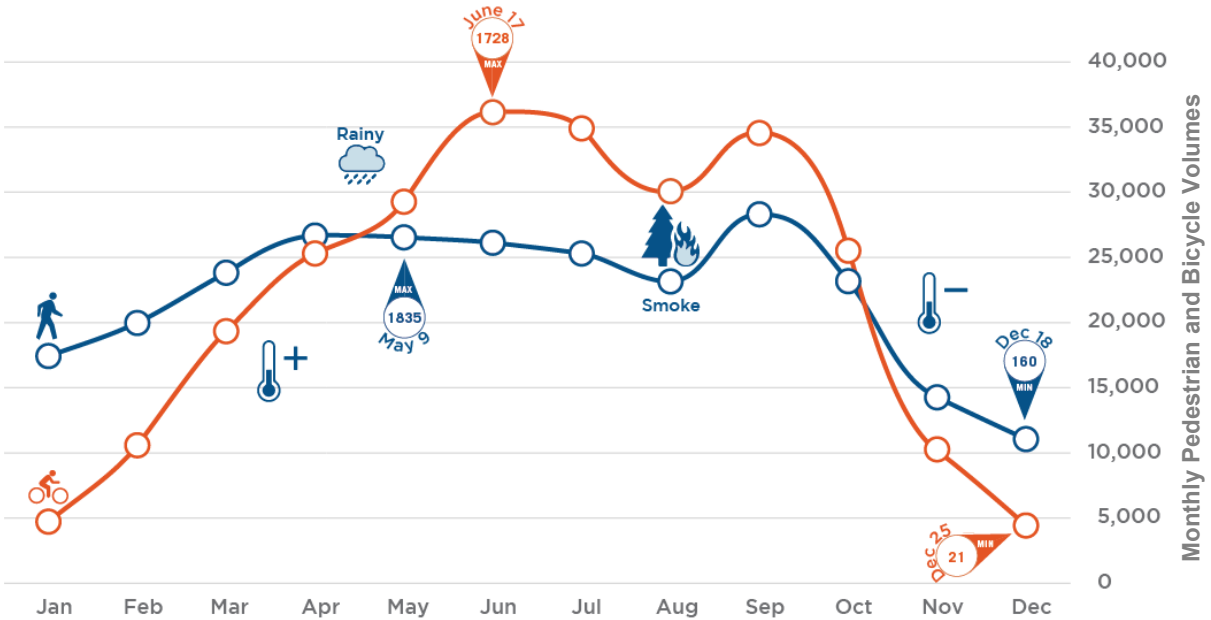
In many cases, transportation needs are not a primary factor in land-use decisions. When pedestrian and bicycle facilities are not proactively addressed in land-use decisions, gaps in the non-motorized transportation system often result. One example of this is the decision to locate a school on the outside of the community where land is more affordable and expansive. This decision may create unforeseen transportation needs that may affect the ability to walk and bike to school. Another example is the development of residential subdivisions outside of city limits. County development standards may not require that sidewalks or bicycle facilities be provided. Over time, these areas may become absorbed by expansion of the surrounding community and may create significant gaps in the pedestrian and bicycle networks. Many cities do not want to annex such areas due to the high cost of improving transportation and other city services. In scenarios like these, when non-motorized infrastructure is an afterthought, user safety is often a concern. Implementing local and governmental policies that address and incorporate pedestrian and bicycle infrastructure as part of regular development can assist in providing complete and safe infrastructure for all users.

There are other influences on the decision to walk or bike. Environmental conditions, such as weather, can have a significant affect on walking and bicycling rates. In Montana, fluctuations in temperature and precipitation are common and may result in periodic harsh conditions for walking and bicycling. Winters can also be long which may reduce non-motorized transportation activities.

To help understand the rate of walking and biking in Missoula, the MPO conducted a travel survey during September and October of 2015. In the survey, it found substantially higher amounts of walking and bicycling than is recorded through the US Census. The higher rate of walking and bicycling is due to a variety of factors, including the fact that respondents were recording their travel behaviors during a time of the year when the climate favors non-motorized transportation. An additional positive influence is that the survey was conducted in a strong pro-walking and biking community which is located in an urban setting. If the survey had been taken during the winter or in a different community, these numbers would likely have been different.



The effects of weather conditions on walking and bicycling rates are illustrated based on count data collected continuously along the Riverfront Trail in Missoula using an automated counter. While not comprehensive or fully representative of the entire state, the count data does provide a snapshot of how seasonal and weather variations may affect pedestrian and bicycle levels. Evaluation of the data, as shown in **Figure 4**, shows that biking rates are more influenced by weather conditions than walking. From a practical standpoint, bicycling is more challenging in the winter due to the influences of snow and ice.



Source: Missoula Riverfront Trail Automated Counter, 2015²⁷

Figure 4: Monthly Pedestrian and Bicycle Activity

3.4. Competing Needs and Design Challenges

Every project undertaken at the state or local level presents a myriad of challenges to transportation planners and engineers. From a design perspective, large trucks, passenger vehicles, motorcycles, pedestrians, and bicycles all require different facilities and accommodations which may not all fit within the available right-of-way. Presence of existing utilities and storm drainage also present challenges to the project. In some cases, retrofitting pedestrian and bicycle facilities within existing rights-of-way can create conflicts with preferred design dimensions due to constraints within the built environment. The desire to include landscaping, on-street parking, and separated facilities, while still accommodating motor vehicles and large trucks, typically requires tradeoffs. At urban intersections, consideration of how to provide for multiple user types is also needed. In order to accommodate turns by large trucks, for example, larger corner radii are needed which results in increased pedestrian crossing distances and faster vehicle turning speeds for regular traffic.

²⁷ Located on the Milwaukee Trail, the South Riverfront automated counter provides real-time data. Continuous collection provides a look at how localized seasonal conditions and events impact bicyclist and pedestrian volumes. The first year of collected data illustrates the correlation between trail use, weather, and localized events.

Determining the most suitable facility type for pedestrians and bicycles can be difficult. The majority of users typically prefer separated pedestrian and bicycle facilities along high-speed and high-volume roadways to improve user comfort and safety. Some bicyclists will still prefer to ride on the roadway even if a separated facility is provided, however. Separated facilities may also be more expensive to construct and maintain and may not fit within existing constraints. Inclusion of separated bike facilities within an urban area, for example, may require the removal of some on street parking in order to fit within existing constraints.

Along rural state highways, widened shoulders provide the dual benefit of added safety for motorists as well as providing room for bicyclists and sometimes pedestrians. However, it is more expensive to construct and maintain roadways with widened shoulders. Within the shoulder, installation of rumble strips are a proven safety counter measure for areas with a history of roadway departure crashes.²⁸ While making the roadway safer for motorists, rumble strips within narrow shoulders decrease the comfort and safety for bicyclists. Recognizing the tradeoffs of rumble strips, efforts have been made in some areas to maximize shoulder space through restriping and to utilize narrower rumble “stripes”. For the state highway system, MDT has developed guidance for considering rumble strips on rural state highways.²⁹

Each project is unique and likely requires trade-offs and compromises due to competing needs and constraints. Limited funding and constraints on some funding sources also inhibits the ability to provide for all features that may be desired. In addition to funding limitations, there are certain restrictions and requirements that must be satisfied during construction projects including environmental, cultural, and historical limitations, among others. These constraints are typically addressed during the project development process.

Given constrained resources, it can be challenging to find a solution which accommodates the needs of all transportation users and the public at large. The competing needs of multiple user types and the built environment makes finding feasible and implementable solutions difficult. Consultation and coordination with other agencies, local jurisdictions, stakeholders, and the public is conducted to help identify needs and determine the best solutions within the confines of the project.

3.5. Roles and Responsibilities

There can be multiple agencies and jurisdictions involved in all phases of pedestrian and bicycle improvements including project development, funding, implementation, maintenance, and education. These groups may include federal, state, county, city, and tribal government agencies, as well as stakeholders and special interest groups. Within each group there can also be multiple divisions which are responsible for different parts of pedestrian and bicycle improvements including planning, engineering, and maintenance. Facilities and projects can also cross multiple jurisdictional boundaries. These situations can be a challenge for the public as it is often unclear who should be contacted with issues pertaining to the facility. When a continuous project exists within multiple jurisdictional boundaries, it is necessary to have well-defined agreements in place outlining the roles and responsibilities of each entity. An example may be a shared use path along a state-owned roadway that is located within both city and county boundaries.

City, counties, and tribal governments are most often responsible for the construction of sidewalks in the urban context. It is common to require that these facilities be provided on-site as a condition for

²⁸ Montana Department of Transportation, Rumble Strips – Saving Lives, <https://www.mdt.mt.gov/visionzero/rumblestrips/>

²⁹ Montana Department of Transportation, Rumble Strip Guidance, July 8, 2015, https://www.mdt.mt.gov/other/webdata/external/cadd/design_memos/2015-07-08_RUMBLE_STRIP-4.pdf

development, with additional off-site facilities supported by general funds, tax-increment financing, impact fees, grants, or parking fees. Local governments can also use these mechanisms for bicycle facilities. On the state system, sidewalks can be improved or added with urban reconstruction projects if there is room.

In some cities, each individual property owner is responsible for the maintenance of the sidewalk abutting their property line. MCA 7-15-4125 states, "The city or town council has power to require the owner of a sidewalk, house, or other structure which is dangerous to passers-by to repair or remove the same after notice." Ultimately, city, county, and tribal governments are responsible for pedestrian facilities.

Bicycle facilities and shared use paths may also be the responsibility of the local jurisdiction. If desired, local governments can require facilities be installed by developers as part of the development approval/permit process (on local system). In some instances, cities have required developers to provide easements for future construction of shared use paths. Depending on the facility type, MDT may also play a significant role in installing facilities on state-owned roadways.

4.0. EXISTING GUIDELINES, POLICIES, PROGRAMS, AND LAWS

This section provides an overview of the regulatory framework and guidelines that surround pedestrian and bicycle facility design, education, and laws. This information is not intended to be comprehensive, rather it is intended to give an overview of the primary guidelines, policies, programs, and laws that are in place today.

4.1. Standards and Best Practices

Roadway infrastructure development within Montana follows construction standards and design guidance based on a customized series of procedures and publications. At the state level, MDT has guidelines for the design and development of improvements on state facilities within their *Roadway Design Manual*³⁰. The manual provides geometric design guidance as well as guidance on signing and markings. While the manual states that it should not be considered a "standard" and acknowledges that it cannot address every situation a design team will encounter, it does provide guidance for most situations. The manual allows for sound engineering judgement on projects and roadway design innovation.

Chapter 7 of the *Roadway Design Manual* includes "Multimodal Design Considerations." This chapter states that, "roadway facilities should be designed and operated to enable safe access for various users, including pedestrians, bicycles, motorists and transit riders of all ages and abilities." The Pedestrian section discusses intersection conflicts, accessibility, and sidewalk/path provisions. A section on Bicycles references use of the American Association of State Highway and Transportation Officials' (AASHTO) *Guide for the Development of Bicycle Facilities (4th Edition)*³¹ with several notable additions. Chapter 7 of the RDM also includes guidance on two-stage turns for bicyclists, bike boxes, buffered and separated bicycle lanes. Guidance on crossing treatments for pedestrians and bicyclists are also provided. In many cases "typical widths" are provided that exceed "minimum" widths.

³⁰ Montana Department of Transportation, Roadway Design Manual, September 2016, <https://www.mdt.mt.gov/other/webdata/external/cadd/RDM/50-RDM-COMPLETE.pdf>

³¹ American Association of State Highway and Transportation Officials, *Guide for the Development of Bicycle Facilities*, 4th Edition, 2012, <https://store.transportation.org/Item/CollectionDetail?ID=116>

Additional information on crossing treatments and signing for pedestrian and bicycle features is provided in the *Manual on Uniform Traffic Control Devices*.³² With the changes in FAST Act allowing for the use of additional design guidance, MDT is also using National Association of City Transportation Officials (NACTO) as a resource for walking and biking design.

Some local municipalities have developed their own guidance on the development of pedestrian and bicycle facilities, while others rely on other resources. While not applicable to all projects, there are many published resources with guidelines for pedestrian and bicycle facilities. Some of the most commonly used resources are published by FHWA, NACTO, the Transportation Research Board, the United States Access Board, and the Institute of Transportation Engineering.

Where maintenance of non-motorized facilities is concerned, agencies typically refer to a variety of sources. On-street bikeways are typically maintained along with the remainder of the roadway. Sidewalks are maintained by a combination of local ordinances governing snow removal, vegetation management, and eventual sidewalk replacement. Much of this work is to be performed at the expense of the local property owner. Curb ramps are upgraded to meet ADA guidelines when structural resurfacing of roadways or local projects are undertaken. Asphalt shared use paths have historically not been well maintained in Montana, nor are there widely accepted standards of maintenance.

4.2. Statewide and Local Policies/Guidelines

Both the state and local governments have adopted policies and guidelines that are related to or are meant to guide development of pedestrian and bicycle facilities. Statewide, MDT has the Shared Use Paths in MDT Right-of-Way Policy, the Highway State Special Revenue Account (HSSRA) Management Policy, and guidance related to shoulder and centerline rumble strips. The shared use path policy provides guidance regarding longitudinal occupancy of shared use paths within MDT right-of-way; the HSSRA policy establishes criteria and processes for MDT providing non-federal match, maintenance responsibility, and making project development decisions that impact the HSSRA; and the rumble strip guidelines include criteria for installation of shoulder and centerline rumble strips on state highways.

Locally, many governing agencies have adopted policies and guidelines which are aimed at maintenance of sidewalks and development of a complete, livable, connected, and safe street networks that are accessible for all users. For example, many Montana communities have adopted Complete Streets Policies which require streets to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. Complete Streets can vary substantially between communities as they are typically reliant on context.

4.3. Education and Encouragement Programs

Education and encouragement programs encompass a wide-ranging toolbox of initiatives aimed at increasing safety and participation of people walking and bicycling. These programs are not sourced from a singular entity but rather are multi-faceted and organized by a variety of organizations and agencies. In Montana, such programs are typically led by non-profits, MPOs, towns, cities, counties, colleges and universities, and other state agencies. Local bicycle and pedestrian coordinators, bicycle and pedestrian advisory boards, and other advocacy organization can be great resources as they are often able to provide direct outreach at the local level and are often more aware of non-motorized issues faced by their communities. In addition to local efforts, MDT has several resources specific to

³² Federal Highway Administration, *Manual on Uniform Traffic Control Devices*, <https://mutcd.fhwa.dot.gov/>

pedestrian and bicycle education and encouragement. The following lists various resources that are available:

- **MDT Bicycle and Pedestrian Website³³:** For pedestrians, MDT provides a list of laws, public transportation information, and safety resources. For bicyclists, MDT provides applicable laws, information on helmet safety, educational resources, maps, and route planning resources for individuals interested in planning a bicycle tour. This includes directories of services and a bicycle map of the state that provides additional information about major rural state highways (i.e. shoulder width, presences of rumble strip, etc.).
- **State Bicycle and Pedestrian Coordinator:** MDT has a staff member who is responsible for promoting safe walking and bicycling in the state. The coordinator ensures non-motorized needs are considered in project development, distributes safety education materials, provides technical support to local governments and the public, and shares pedestrian and bicycle resources.
- **Share the Road Program³⁴:** MDT provides educational materials, safety items and technical assistance for informational campaigns.
- **Driver's Education:** Within the Office of Public Instruction's Driver Education program, pedestrian and bicycle safety are covered as integral elements.
- **Fish, Wildlife, and Parks:** Montana FWP maintains a comprehensive list and map of Montana's State Parks which offer extensive hiking and biking trails and other accommodations.
- **MDOC Technical Assistance and Grant Programs:** MDOC offers multiple technical assistance and grant programs that strengthen Montana's economy through the development and enhancement of walkable community places, infrastructure, planning, tourism, and recreation. Pedestrian and bicycle planning, upgrades, and construction may qualify for programs such as the Tourism Grant Program, Montana Main Street Program, Community Technical Assistance Program, and Community Development Block Grant (CDBG) Programs. Additions through its vistmt.com website, MDOC also offers extensive planning information for hiking and biking focused travel within Montana.
- **Injury Prevention Program:** The Montana DPHHS strives to reduce the number of injuries occurring in Montana through the Injury Prevention Program. This program includes efforts to improve safety for pedestrians and bicyclists.
- **Montana Nutrition and Physical Activity Program:** Through this program DPHHS aims to make active and healthy living easier everywhere Montanans live, work, and play. This program focuses on decreasing obesity and chronic disease rates while increasing physical activity. Part of this including improving accessibility of communities for foot and bike traffic.
- **Organizations and Associations:** There are various organizations, associations, and advocacy groups that work with Montana communities to encourage and empower residents to safely walk and bicycle (i.e. Bike Walk Montana, Adventure Cycling Association, AARP, local SRTS programs, etc.).



³³ Montana Department of Transportation, Bicycles & Pedestrians in Montana, <https://www.mdt.mt.gov/travinfo/bikeped/>

³⁴ Montana Department of Transportation, Share the Road, <https://www.mdt.mt.gov/travinfo/bikeped/sharetheroad.shtml>

4.4. Laws and Enforcement

Laws surrounding safe and predictable behavior by motorists, pedestrians, and bicyclists are critical to roadway safety. Lack of understanding of these laws and safe operation can be a contributing factor in many crashes involving pedestrians and bicyclists. State law with regard to pedestrian and bicycle travel are covered in MCA Title 61, Chapter 8. Most cities have local code or ordinances which expand and are sometimes more stringent than MCA. MCA 61-12-101³⁵ gives local authorities the power to “enact as ordinances any provisions of chapter 8 or 9 [of MCA] and any other law regulating traffic, pedestrians, vehicles, and operators of vehicles that are not in conflict with state law or federal regulations and enforcing the ordinances” on sidewalks, streets, and highways under their jurisdiction. Although local deviations from MCA are lawful, inconsistencies between state and local codes can create uncertainty for motorists and non-motorists alike.

State laws surrounding pedestrian traffic are covered in MCA 61-8-500³⁶. Montana is a “yield” state meaning motorists must yield to pedestrians in marked and unmarked crosswalks at an intersection. However, this does not allow pedestrians to suddenly leave a curb or other place of safety and walk or run into the path of a vehicle that is so close that it is impossible for the operator to yield. State law also asserts that every pedestrian crossing a roadway at any other point other than at an intersection shall yield to all vehicles on the roadway. In general, local pedestrian laws are somewhat limited but do not conflict with the state laws.

Laws surrounding bicycle traffic are discussed in MCA 61-8-600³⁷. Montana is one of only five states in which it is lawful for bicyclists to travel on all public roads. Bicyclists riding on sidewalks and in crosswalks are granted with the “rights and duties applicable to a pedestrian under the same circumstances” unless prohibited by official traffic control devices. Many cities, such as Bozeman, prohibit riding on sidewalks within city limits unless the bicyclist is a child. Montana law does not specifically require use of a helmet, although many local jurisdictions such as Billings and Miles City have adopted helmet laws. Laws regarding parking, licensing, and registration of bicycles have been adopted locally but not statewide. Use of handheld devices while biking is not explicitly discussed, although some local jurisdictions, including Great Falls, Missoula, Hamilton, and Billings, have brought specific attention to this issue in their codes.

The MCA was modified in 2015 to generally revise and clarify laws related to bicycle traffic. Revisions include: modifying the definition of “bicycle”; providing a definition of “electrically assisted bicycle”; allowing bicyclists to overtake and pass on the right shoulder of a roadway; providing circumstances when a faster vehicle may pass a bicycle within a no-passing zone; revising where bicycles may be ridden on roadways; and revising the requirements for nighttime visibility and braking for bicycles.

Law enforcement plays a key role in raising awareness about safety issues, influencing behaviors and social norms, and reinforcing and supporting education programs and strategies. However, funding constraints often limit the number of on duty patrols making enforcement of pedestrian and bicycle laws a low priority. Lack of enforcement can reduce compliance and consequently raise safety concerns. Enforcement is not exclusively for police officers, however. The community can also play an important role in enhancing traffic safety. Representatives of communities can improve driver, pedestrian, and bicyclist behaviors in many ways. Examples of community level campaigns include

³⁵ Montana Code Annotated Title 61, Chapter 12, Part 10, Section 1, https://leg.mt.gov/bills/mca/title_0610/chapter_0120/part_0010/section_0010/0610-0120-0010-0010.html

³⁶ Montana Code Annotated Title 61, Chapter 8, Part 6, https://leg.mt.gov/bills/mca_toc/61_8_5.htm

³⁷ Montana Code Annotated Title 61, Chapter 8, Part 6, https://leg.mt.gov/bills/mca_toc/61_8_6.htm

neighborhood speed watches, slow down yard sign campaigns, neighborhood fight back programs, pace-car campaigns, radar speed trailers, and crossing guards.³⁸

Additional state and federal laws exist that are applicable to project funding, eligibility, design, and implementation. Funding laws and eligibility are discussed in more detail in **Section 3.2**; design considerations are outlined in **Section 3.4**; and regulations and requirements to ensure accommodations for all users are detailed in **Section 2.7**.

4.5. Long-Range Planning

Montana's long-range transportation plan, *TranPlanMT*, was updated in 2017.³⁹ The plan identifies transportation needs, evaluates public and stakeholder issues and priorities, assess future concerns, and establishes policy goals and strategies to achieve Montana's overall transportation vision. The plan guides MDT's efforts to plan, manage, and preserve a safe and efficient transportation system.

TranPlanMT sets policy direction for MDT based on public and stakeholder input. A broad outreach effort involving MDT personnel, transportation stakeholders, public users, state, tribal, county, and municipal leaders helped identify transportation goals and strategies contained in the *TranPlanMT* document. The plan includes non-motorized transportation wherein it discusses the state's current pedestrian and bicycle facilities, safety, usage and demand. The *Statewide Pedestrian and Bicycle Plan* further defines the non-motorized component of *TranPlanMT* by focusing the overriding goals and strategies on pedestrians and bicyclists.

Many Montana cities have developed multi-modal transportation plans specific to their planning areas. Some of these cities and towns have also developed other community-wide or downtown plans that address and prioritize goals related to walking and bicycling. As transportation is seen as an all-encompassing term which includes both motorized and non-motorized modes of travel, many long-range transportation plans (LRTP) include pedestrian and bicycle components that integrate with the broader transportation system. These local plans typically include visionary networks for future pedestrian and bicycle transportation systems to help identify areas for future investment. The following multi-modal LRTPs have been developed for Montana communities:

- Great Falls Area Long Range Transportation Plan (2018)
- Belgrade Long Range Transportation Plan (2018)
- Bozeman Transportation Master Plan (2017)
- Missoula Long Range Transportation Plan (2017)
- Miles City Long Range Transportation Plan (2017)
- Butte-Silver Bow Transportation Plan (2016)
- Billings Urban Area Long Range Transportation Plan (2014)
- Greater Helena Area Long Range Transportation Plan (2014)
- City of Laurel Long Range Transportation Plan (2014)
- Shelby Master Transportation Plan (2014)
- Polson Area Transportation Plan (2011)
- Hamilton Area Transportation Plan (2009)
- Whitefish Transportation Plan (2009)
- Kalispell Area Transportation Plan (2006)

³⁸ Pedestrian and Bicycle Information Center, What Communities Can Do to Enforce Laws, http://www.pedbikeinfo.org/programs/enforcement_communityenforce.cfm

³⁹ *TranPlanMT Plan Summary*, Montana Department of Transportation, November 2017, <http://www.mdt.mt.gov/tranplan/>

Many of Montana's urban areas, including the three MPOs, have also developed area specific transportation plans that encompass all aspects of the transportation system. In addition, some communities have developed parks and recreation plans, trails plans, pedestrian safety plans, or growth plans, which focus more on, although not exclusively, the recreational aspects of non-motorized travel. The following local plans specifically address walking and bicycling in communities:

- Missoula Pedestrian Facilities Master Plan (draft)
- Missoula Bicycle Facilities Master Plan (2017)
- Billings Area Bikeway and Trails Master Plan (2017)
- Red Lodge Active Transportation Plan (2016)
- Park County Active Transportation Plan (2016)
- Whitefish Bicycle and Pedestrian Master Plan (2016)
- Lockwood Pedestrian Safety District Non-Motorized Transportation Plan (2015)
- Hamilton Non-Motorized Transportation Plan (2012)
- Missoula Active Transportation Plan (2011)
- Columbus Area Trails Plan (2008)

5.0. PUBLIC AND STAKEHOLDER INPUT

Public and stakeholder input is vital to understanding user needs and how walking and biking in Montana is viewed. This information is used to help identify constraints and opportunities within the existing non-motorized transportation system, and to guide development of recommendations for improving walking and biking in Montana. To aid in this effort, a public and stakeholder involvement campaign was undertaken as part of the *Montana Pedestrian and Bicycle Plan*. Some of the information obtained during the outreach effort has previously been summarized as part of the *Vision and Goals* memorandum⁴⁰ and is reiterated and expanded upon as appropriate in the following sections. Additional information from the public outreach effort for *TranPlanMT* is also included.

5.1. TranPlanMT Public and Stakeholder Involvement Surveys

As part of Montana's statewide transportation planning process, *TranPlanMT*, a biennial survey is conducted to gain an understanding of the public and various stakeholders' attitudes and perceptions about the state's transportation system. The survey was most recently conducted in 2017 and was distributed in two parts: one was administered to the general public⁴¹, with 1,456 surveys completed; a second was administered to transportation stakeholders including city, county, state, federal, and tribal partners as well as stakeholders from special interest groups such as freight, bicycle-pedestrian, environmental, and economic development, with a total of 457 stakeholder questionnaires completed.

Public Involvement Survey

In 2017, public survey respondents were moderately satisfied with the condition of pedestrian walkways and bicycle pathways with a mean satisfaction score of 5.87 and 5.63, respectively, out of 10. This satisfaction score has seen decreases over the years. Respondents in the Billings district were the most satisfied district, while those in the Glendive and Great Falls districts were the least satisfied. In terms of priority, providing adequate pedestrian facilities and bicycle facilities received a mean rank of 2.98 and 2.60, respectively, on a scale of 1-5. The priority of pedestrian and bicycle

⁴⁰ Montana Department of Transportation, Montana Pedestrian and Bicycle Plan, *Vision and Goals Memorandum*, August 09, 2018, <https://www.mdt.mt.gov/pubinvolve/pedbike/documents.shtml>

⁴¹ Montana Department of Transportation, Biennial Public and Stakeholder Surveys, <https://www.mdt.mt.gov/publications/surveys.shtml>

facilities has also seen a decline in recent years. Butte and Great Falls districts assigned a higher priority to pedestrian and bicycle facilities, while the Glendive district assigned the lowest priority to such facilities. Almost 70 percent of Montanans feel they receive more than, or about, \$182-\$260 per year in value from the transportation system. In the event of decreased funding, the public rates pedestrian walkways and bicycle pathways as the most preferable areas to decrease funding. Respondents in the Glendive district were most likely to choose to reduce funding for bicycle and pedestrian facilities, while respondents from Great Falls and Butte districts were least.

Stakeholder Survey

In 2017, MDT's stakeholders were less satisfied with the physical condition of pedestrian walkways and bicycle paths than the general public. The physical condition was noted as a concern by bicycle-pedestrian and environmental groups, while other stakeholder groups were not as concerned. County commissioners and intermodal freight groups prioritized pedestrian facilities lower than other stakeholder groups, while bicycle-pedestrian and environmental groups highly prioritized pedestrian facilities. Overall, stakeholders prioritized bicycle facilities slightly higher than the public. Bicycle-pedestrian and environmental groups highly valued ensuring adequate bicycle facilities, while county commissioners and intermodal freight advocates did not prioritize bicycle facilities. When stakeholders were asked what should be funded at lower levels if MDT funding decreased, bicycle then pedestrian pathways were the top two choices made by stakeholders for decreased funding.

5.2. Open House Workshops

A series of six public open house workshops were held to help understand issues, concerns, and needs faced across the state regarding walking and bicycling. The workshops were organized with stations staffed by a member of the project team. Participants were encouraged to visit each station to provide their input on each topic. The project team took comprehensive notes and encouraged meaningful feedback through one-on-one and small group conversations at each station. The following station topics were set up at the open house workshops:

- Safety and Education
- Accessibility and Connectivity
- System Preservation and Maintenance
- Mobility, Health, and Economic Vitality
- Barriers and Challenges

In total, there were 148 attendees at the six open house workshops in Havre, Glendive, Billings, Butte, Missoula, and Helena. A number of major themes and supporting topics were revealed during the conversations. A total of 123 pages of notes were collected during the meeting, resulting in 1,590 individual comments. A summary of the most prevalent comments is provided in the *Vision and Goals Memorandum* and is reiterated below:

- **Safety:** Safety for all users is critically important. Crosswalk enhancements that improve visibility and safety were emphasized. Separated non-motorized facilities are thought of as safer than those without a physical barrier between non-motorists and vehicles. Though parallel routes on low speed/low volume roadways are also seen as acceptable route alternatives to most non-motorized users.
- **Maintenance:** There is a desire for more frequent and consistent snow and ice removal as well as sweeping of non-motorized facilities. Understanding best practices for maintenance was desired by both the public and local jurisdictions. Sidewalk repair and preservation is important to ensure a safe, connected system. Upkeep of striping and pavement markings is also important.

- **Funding:** The public acknowledges the challenges of the various jurisdictions regarding limited funding for maintenance, education, expansion of infrastructure, and emphasizes the need to identify additional and alternative resources.
- **Facilities:** Non-motorized facilities that provide safe and appropriate accommodations for all users are desired. Connectivity and accessibility of facilities, prioritizing pedestrian and bicycle infrastructure, were also highlighted.
- **Education:** More education is needed that is aimed at teaching existing laws and regulations to ensure safe and proper interactions between all users. The public recommended an increase in pedestrian and bicycle education for all ages through schools, drivers education, and public service announcements. It was also noted that education to encourage non-motorized use and promote the benefits of walking and bicycling is desired.
- **Roles and Responsibilities:** There is a common lack of understanding on the roles and responsibilities that various agencies, local governments, and the public play in providing and maintaining pedestrian and bicycle accommodations. There is a perception that there is a lack of consistency, coordination, and collaboration between jurisdictions. It is unclear how each entity addresses and balances competing needs.

5.3. MDT District Meetings

Meetings were held with MDT staff at the five MDT district locations and the MDT Headquarters. These meetings gave the project team an opportunity to hear from staff responsible for planning, implementation, and maintenance of non-motorized facilities in MDT right-of-way across the state. Participants were asked a series of questions relating to MDT's role in providing for non-motorized users and what challenges/barriers are faced. The discussion was intended to understand the existing state of non-motorized transportation within the Department to help identify gaps and user needs. The following is a summary of the key themes heard at the meetings:

- **Maintenance:** Maintenance needs are outpacing funding levels. Snow removal practices prioritize the clearing of roadways before non-motorized facilities. Roadways known to have high bicycle use may receive priority for spring sweeping. Given the limited number of sweepers per district it takes time to get to all the routes. Existing equipment is typically not designed for maintaining non-motorized facilities. There are some agreements in place with local governments to maintain non-motorized facilities.
- **Facilities:** While there is a general desire for consistent consideration of non-motorists across the state, there is recognition that the state is vast and that the needs are not the same in all areas. It can be difficult to balance the many competing needs within the existing right-of-way. Evaluation is on a case-by-case basis to understand context.
- **Roles and Responsibility:** There is variation on the view of MDT's role and responsibility in providing non-motorized facilities. Demand for non-motorized facilities is greater in the urban/built environments but there is also a public push for more recreational facilities. Sometimes it is difficult to know if the facility is for transportation or recreation use and federal guidance provides minimal information on the differences.
- **Education:** There needs to be focused education for how motorists and non-motorists should safely interact with one another. Some districts are not clear on the legality of riding on sidewalks in their respective communities.
- **Safety:** Safety of all users is the priority. High-volume and high-speed corridors are the biggest challenge. There was shared concern regarding bicyclists on rural roadways with narrow shoulders. Districts commented on the need to tell MDT's story and share with the public the benefits of new designs (i.e. roundabouts, pedestrian hybrid beacons) and what to expect when navigating a system with these features.

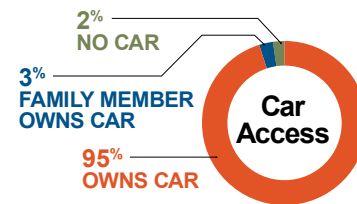
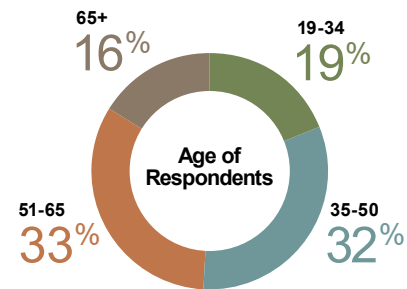
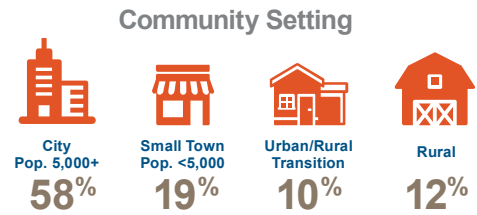
5.4. Online Survey

An online survey was developed to help assess the existing conditions for pedestrian and bicycle transportation in Montana. The method of distribution of the survey was intended to maximize participation rather than provide statistically significant results applicable to the state population as a whole. The survey consisted of 20 questions in which respondents were asked to provide basic demographic data including their geographic location, age group, and annual income. Respondents were also asked which mode of transportation they used most often and about specifics of their typical or desired walking and biking trips. The survey then asked respondents to list their reasons for walking and biking as well as perceived barriers which prevent them from walking and biking more often. The survey was intended to inform general needs of the public and to help identify areas of focus when developing potential strategies for making Montana more walk and bike friendly.

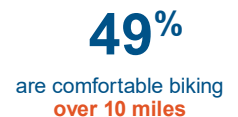
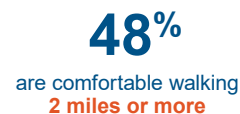
A total of 1,960 people responded to the survey. Most respondents were from the Missoula, Helena, and Bozeman areas, however, there was representation from 43 of Montana’s 56 counties. People living in urban areas (cities, towns, and their fringe areas) made up 87 percent of respondents. The majority of people, roughly 65 percent, were between 35 and 65 years old. In general, the respondents were older, more urban, had higher income, and were represented by much higher percentages of bicyclists than the population as a whole. While not statistically significant, the survey nevertheless provides key insights into the needs of a cross-section of Montanans.

Respondents were categorized whether they lived in urban areas (cities, towns, and their fringe areas) or in rural contexts. Motor vehicle ownership was nearly identical between the two groups at 97-98 percent, with only 34 respondents indicating they did not have access to a vehicle. When controlling for income, however, 91 percent of households making under \$25,000 had a vehicle as opposed to 99 percent of households with incomes greater than \$50,000 per year.

Bicycling was noted as a primary mode of transportation in higher concentration in urban populations (22 percent) than rural areas (2 percent). Driving was selected as a primary mode of transportation for the majority of respondents in urban (69 percent) and rural (97 percent) settings. Commute distances were self-reported as shorter for those in urban areas with only 25 percent of respondents in urban areas indicating commutes of 6 miles or more. Whereas for rural areas, 55 percent reported commutes of 6 miles or more.



Typical Trip Distances

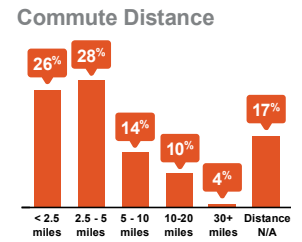
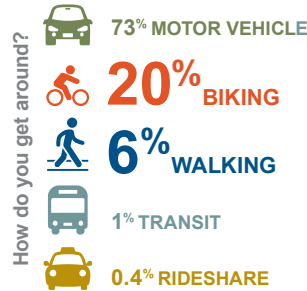


Urban respondents reported walking to recreational areas at higher rates than rural areas (77 vs 57 percent). Similarly, walking for commuting was noted as higher for urban (21 percent) vs rural areas (16 percent).

Both urban and rural groups walked for leisure/fitness similarly. When asked about bicycling, urban respondents were much more likely to bicycle for transportation (41 vs 17 percent) and also more likely to bicycle for leisure/fitness (72 vs 59 percent). While rural respondents noted a willingness to walk slightly farther than urban respondents, urban respondents were willing to bicycle slightly farther than rural respondents when reporting comfortable distances for both modes. Urban respondents noted being more comfortable riding a bicycle in traffic (48 vs 33 percent) with rural residents noting a slightly higher preference for dedicated bicycle facilities. Concerns for personal safety while walking and biking were noted to be higher in rural areas.

In all age groups, the most used mode of transportation is motor vehicle (73 percent), followed by a biking (20 percent), then walking (6 percent). The distribution of respondents within each age group who answered the “where do you walk” and “where do you bike” questions was very similar. This indicates that, regardless of age, respondents are primarily walking and biking on local streets, shared use paths, and hiking trails. Age was also not a major factor in the self-reported comfort level of bicyclists. Only those older than 56 years exhibited a slight increase in desirability for dedicated facilities and less confidence with riding with traffic.

On average, in the \$50,000 to more than \$100,000 annual income level groups, approximately 77 percent of respondents use a motor vehicle, 17 percent use a bicycle, and 5 percent walk as their primary mode of transportation. In the \$25,000 to \$49,999 income level group about 62 percent of respondents use a motor vehicle, 26 percent use a bicycle, and 9 percent walk. The income level of less than \$24,999 per year showed the highest use of non-motorized transportation as a primary mode of transportation with 43 percent of respondents selecting bicycling, and 10 percent selecting walking as their primary modes of transportation. Income level also does not show an influence on respondents’ distance from work or school, nor was it a major factor in respondents’ comfortable walking and biking distances.



Walking Trends

47% Daily
36% Weekly



9% Daily
28% Weekly



13% Daily
9% Weekly



24% Daily
40% Weekly



Biking Trends

25% Daily
42% Weekly

8% Daily
26% Weekly

19% Daily
15% Weekly

14% Daily
40% Weekly

