MAY 28, 2019

MONTANA
MDT
DEPARTMENT OF TRANSPORTATION

MONTANA

PEDESTRIAN & BICYCLE PLAN

VISION ZERO
zero deaths · zero serious injuries
MONTANA DEPARTMENT OF TRANSPORTATION

Prepared for:

MONTANA DEPARTMENT OF TRANSPORTATION

Prepared by:

ROBERT PECCIA & ASSOCIATES

ALTA PLANNING + DESIGN

Cover Photo Credit (Left to Right): Montana Department of Transportation, Robert Peccia and Associates, Montana Office of Tourism

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Acknowledgements

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Abbreviations and Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
BACI	Building Active Communities Initiative
BMI	Body Mass Index
CDC	Center for Disease Control
CTEP	Community Transportation Enhancement Program
DOT	Department of Transportation
DPHHS	Department of Public Health and Human Services
FAST Act	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
FWP	Fish, Wildlife & Parks
FLAP	Federal Lands Access Program
FY	Fiscal Year
HAWK	High Intensity Activated Crosswalk Beacon
HSIP	Highway Safety Improvement Program
HSSRA	Highways State Special Revenue Account
ITE	Institute of Transportation Engineers
LRTP	Long Range Transportation Plan
MAP-21	Moving Ahead for Progress in the 21st Century Act
MCA	Montana Code Annotated
MDOC	Montana Department of Commerce
MDT	Montana Department of Transportation
MOTBD	Montana Office of Tourism and Business Development
MPO	Metropolitan Planning Organization
MUTCD	Manual on Uniform Traffic Control Devices
NACTO	National Association of City Transportation Officials
NCHRP	National Cooperative Highway Research Program

NHTS	National Household Travel Survey
NHTSA	National Highway Traffic Safety Administration
PBIC	Pedestrian and Bicycle Information Center
PHB	Pedestrian Hybrid Beacon
PROWAG	Public Rights of Way Accessibility Guidelines
RDM	Road Design Manual
RRFB	Rectangular Rapid Flashing Beacon
RTP	Recreational Trails Program
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SRTS	Safe Routes to School
TA	Transportation Alternatives
TRB	Transportation Research Board
USAB	United States Access Board
USC	United States Code
USDOT	United States Department of Transportation
VMT	Vehicle Miles Traveled

Glossary

GENERAL TERMS:

Active Transportation	While no formal definition exists within the state, nationally, active transportation is recognized as any self-propelled, human-powered mode of transportation, such as walking (includes wheelchair users) or bicycling.
Bicycle	"Bicycle" means a vehicle propelled solely by human power on which any person may ride, irrespective of the number of wheels, except scooters, wheelchairs, and similar devices. The term includes an electrically assisted bicycle. *MCA 61-8-102*
Design Guidance	Design guidance is intended to help designers understand how to implement a principle, without restricting their creativity in design. The guidance provides recommendations towards good practice in design and is intended to provide clear instructions to designers on how to adopt specific principles, such as intuitiveness, comfort, and consistency.
Maintenance	The cyclical, seasonal, and long-term activities needed to preserve, as much as possible, to original condition.
Pedestrian	"Pedestrian" means any person on foot or any person in a manually or mechanically propelled wheelchair or other low-powered, mechanically propelled vehicle designed specifically for use by a physically disabled person. *MCA 61-8-102*
Urban Environment	According to 23 U.S.C. 101(a)(33), areas of population greater than 5,000 qualify as an urban area. All areas of a state not included in urban areas are considered rural areas.
Vulnerable Road User	While no definition has been formally adopted, MDT has used this term to refer to users who don't have the protection of a vehicle roll cage – motorcycles, bicycles, and pedestrians.

LINEAL FACILITY TYPES:

Bicycle Lane	A portion of roadway that has been designated for preferential or exclusive use by bicyclists by pavement markings and, if used, signs. It is intended for one-way travel, usually the same direction as the adjacent traffic lane, unless designated otherwise.
Roundabout	A type of circular intersection that provides yield control to all entering vehicles and feature channelized approaches and geometry to encourage reduced travel speeds through the circular roadway.
Rumble Strips/ Stripes	A textured or grooved pavement treatment designed to create noise and vibration to alert motorists of a need to change their path or speed. Longitudinal rumble strips are sometimes used on or along shoulders or centerlines of highways to alert motorists who stray from the appropriate traveled way. Rumble stripes are edgeline rumble strips that are located on top of the edgeline to maximize the clear width of the paved shoulder.
Separated Bike Lane	A separated bike lane is an exclusive facility for bicyclists that is located within or directly adjacent to the roadway and that is physically separated from motor vehicle traffic with a vertical element. Separated bike lanes are differentiated from standard and buffered bike lanes by the vertical element. They are differentiated from shared use paths (and sidepaths) by their more proximate relationship to the adjacent roadway and the fact that they are bike-only facilities. Separated bike lanes are also sometimes called “cycle tracks” or “protected bike lanes.” *FHWA Separated Bike Lane Planning and Design Guide*
Shared Use Path	A bikeway physically separated from motor vehicle traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Most shared use paths are designed for two-way travel.
Shoulder	The portion of the roadway contiguous with the traveled way that accommodates stopped vehicles, emergency use, and lateral support of subbase, base, and surface courses. Shoulders, where paved, are often used by bicyclists.
Sidepath	A shared use path located immediately adjacent and parallel to a roadway.
Sidewalk	That portion of a street or highway right-of-way, beyond the curb or edge of roadway pavement, which is intended for use by pedestrians.

INTERSECTION TERMS:

Crosswalk	Any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface. *Uniform Vehicle Code*
Curb Extensions	A traffic calming measure, also known as bulb-outs or neckdowns, used to extend the sidewalk or curb line out into the parking lane, which reduces the effective street width. Curb extensions allow approaching vehicle drivers and pedestrians waiting to cross to see each other when vehicles parked in a parking lane would otherwise block visibility.
Flashing Signs	A traffic control device designed to stop motorized traffic and help pedestrians safely cross busy or higher-speed roadways at midblock crossings and uncontrolled intersections. Flashing signs may also be combined with warning signage and crossing markings. Examples of flashing signs include rectangular rapid flashing beacons (RRFB), pedestrian hybrid beacons (PHB), or high intensity activated crosswalk beacons (HAWK).
Latent Demand	In the context of a street crossing, latent demand refers to the potential use a crossing might generate if made safer and more comfortable.
Leading Pedestrian Interval	Special signal timing that activates the pedestrian walk signal (typically 3-7 seconds in advance) before parallel vehicles are being given a green signal indication. This allows pedestrians to establish their presence in the crosswalk or even clear the conflict area in advance of vehicle turns.
Refuge Island	Refuge islands are protected spaces placed in the center of a street to facilitate pedestrian and bicycle crossings. They allow pedestrians and/or bicyclists to manage only one direction of traffic at a time, and enable them to stop part-way across the street and wait for an adequate gap in traffic before crossing the second half of the street.

Executive Summary

Walking and bicycling as modes of both transportation and recreation have been steadily increasing throughout many of Montana's communities. Montana's residents are statistically some of the most active individuals in the country with nearly seven percent of residents commuting to work by walking or bicycling. As interest and support for the benefits derived from walking and bicycling have increased, the Montana Department of Transportation (MDT), other state and local agencies, stakeholders, and residents alike have increased focus on gaining a better understanding of walking and bicycling. The *Montana Pedestrian and Bicycle Plan* (Plan) is the first statewide effort to understand and address the needs of the non-motorized users across the state.

The Plan is organized into seven key sections which discuss the current state of walking and bicycling in Montana while also identifying complexities and challenges to accommodating these users. The Plan identifies constraints and opportunities to improving the safety, accessibility, and mobility of current and future users of the transportation system in addition to recommending strategies to support the Plan's vision and goals in an effort to improve walking and bicycling in Montana. The following sections provide a summary of the Plan's key points.

1. ***Introduction and Purpose***
2. ***Public and Stakeholder Outreach***
3. ***State of Walking and Bicycling in Montana***
4. ***Complexities and Challenges***
5. ***Existing Guidelines, Policies, Programs, and Laws***
6. ***Recommended Strategies***
7. ***Implementation and Next Steps***

INTRODUCTION AND PURPOSE

MDT's mission is to provide a transportation system and services that emphasize quality, safety, cost effectiveness, economic vitality and sensitivity to the environment. The Plan will be used by MDT and other partnering agencies as they work to fulfill the needs of pedestrians, bicyclists, and all who use Montana's transportation system.

This Plan identifies a guiding vision and series of goals intended to inform the planning process and implementation of the recommended strategies. The vision and goals recognize the need for a balance between transportation choice, connectivity, accessibility, system preservation and maintenance, public health, safety, education, and environmental stewardship.

Nearly seven percent of Montanans commute to work by walking or bicycling.

Montanans desire a safe, accessible, and sustainable transportation system for pedestrians and bicyclists that facilitates access to destinations; supports economic vitality, active and healthy communities, and environmental stewardship; and serves all travel modes.

Goal 1: *Reduce pedestrian and bicyclist fatalities and serious injuries in support of Vision Zero.*

Goal 2: *Educate, encourage, and promote safe and responsible travel practices of motorists, pedestrians, and bicyclists.*

Goal 3: *Preserve and maintain the pedestrian and bicycle transportation system.*

Goal 4: *Improve mobility and accessibility for all.*

Goal 5: *Support walking and bicycling as important transportation modes for access to destinations, economic vitality, and health.*

PUBLIC AND STAKEHOLDER OUTREACH

A number of engagement strategies were utilized to reach a wide spectrum of the state's population and agency stakeholders and to elicit meaningful participation from residents across Montana.

Open house workshops were conducted at six locations across the state. The intent of the workshops was to reach a broad audience and hear from MDT staff, local governments, stakeholders, and the public about their concerns and needs regarding walking and bicycling. The regional nature of the meetings was intended to understand the existing state of non-motorized transportation across the state to help identify gaps and user needs.

The following themes were heard during the open house workshops:

- **Safety:** Safety for all users is a high priority.
- **Maintenance:** There is desire for more frequent and consistent maintenance of non-motorized facilities.
- **Funding:** Needs are outpacing current funding levels.
- **Facilities:** Connected, safe, and accessible facilities for non-motorized users are desired.
- **Roles and Responsibilities:** Consistency, coordination, and collaboration between jurisdictions is necessary.
- **Education:** There is a need for focused education for both motorists and non-motorists.

An online survey was developed to outreach across the state to special interest groups, stakeholders, decision-makers, non-motorized users, and general motorists. The intent of the survey was to collect opinions, interests, and feedback about the state of walking and bicycling in Montana and gain an understanding of non-motorized use across the state. A total of 1,960 people responded to the survey. Some key statistics from the survey include:

- People living in urban areas made up 87 percent of respondents.
- The majority of respondents (95 percent) own a car.
- The most used mode of transportation by respondents is a motor vehicle (73 percent), followed by bicycling (20 percent), then walking (6 percent).
- 48 percent of respondents are comfortable walking 2 miles or more while 49 percent are comfortable bicycling 10 miles or more.
- Urban respondents noted being more comfortable riding a bicycle in traffic (48 vs 33 percent) while rural residents noted a slightly higher preference for dedicated bicycle facilities.

STATE OF WALKING AND BICYCLING IN MONTANA

Montana is a vast state with 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. In more rural areas, state highways typically serve as the main routes for pedestrians and bicyclists.

A review of transportation and socioeconomic conditions reveals that a significant portion of the population may require additional accommodation to safely and comfortably walk. Approximately 22 percent of residents are under 18 years of age, 17 percent are 65 or older, and 14 percent of residents have a disability. Approximately 95 percent of Montanan households have access to at least one vehicle. Nationwide data shows that nearly 18 percent of trips are made by walking or bicycling.

Crash trends and statistics show that approximately 6 percent of all fatalities and serious injuries in Montana between 2008 and 2017 were pedestrians or bicyclists. Many of the non-motorized crashes occurred in urban areas and occurred at or were related to intersections. Alcohol and drug impairment was reported in a large number of severe injury crashes between 2012 and 2016 (33 percent of pedestrian-involved and 14 percent of bicycle-involved).

There are many benefits realized from walking and bicycling including health, economic, and environmental benefits. In addition, walking and bicycling serve the state's vulnerable populations who are transportation disadvantaged, including senior citizens, children, the disabled community, minority populations, and low-income individuals and families. The Americans with Disabilities Act and other guidance play a key role in assuring that facilities adequately accomodate all users.

Aside from serving transportation purposes, walking and bicycling are important to Montana's economy and tourism industry. Many communities have increased investment in their local walking and bicycling systems and programs to better serve the needs of the community as well as tourists and recreational users.

COMPLEXITIES AND CHALLENGES

Despite the inherent advantages that make walking and bicycling attractive options for transportation in Montana, challenges exist. Some of the challenges faced in Montana include infrastructure, maintenance, education, user behavior, and funding.

Montana's transportation system is extensive and is owned and maintained by multiple entities. In urban contexts, networks of high quality pedestrian and bicycle facilities can typically be implemented more effectively than in rural areas due to the greater numbers of non-motorized users and shorter distances between destinations.

Although pedestrian and bicycle facilities are desired by many residents, funding has historically been, and is likely to continue to be, a challenge for developing and maintaining those facilities. No agency currently has sufficient funding or resources to implement and maintain transportation networks to the levels desired.

Other challenges that may prevent users from walking and bicycling include gaps in the non-motorized transportation system, the climate in Montana, and design constraints due to the built environment. Given these constraints, it can be challenging to find a solution which accommodates the needs of all transportation users. Consultation and coordination between agencies, local jurisdictions, stakeholders, and the public is important to identify needs and determine the best solutions to the many challenges faced.

EXISTING GUIDELINES, POLICIES, PROGRAMS, AND LAWS

Many federal, state, and local governments have adopted policies and guidelines that are related to or are meant to guide development of pedestrian and bicycle facilities. For state facilities, MDT has guidelines for the design and development of improvements within the *Road Design Manual*. Some local municipalities have developed their own guidance on the development of pedestrian and bicycle facilities, while others rely on resources such as those published by the Federal Highway Administration, National Association of City Transportation Officials, the Transportation Research Board, the United States Access Board, and the Institute of Transportation Engineering.

In addition to design guidance, there are a variety of education and encouragement programs in place led by non-profits, Metropolitan Planning Organizations, towns, cities, counties, state agencies, colleges, and universities. These programs are aimed at increasing safety and participation of people walking and bicycling. There are also various state and local laws regarding safe and predictable behavior by motorists, pedestrians, and bicyclists.

RECOMMENDED STRATEGIES

Review of existing conditions helped highlight inhibiting factors and potential means to improve safety, accessibility, and mobility for current and future users of the transportation system. To address these factors, strategies which support the vision and goals established for the Plan were developed. The following elements are discussed for each of the recommended strategies: the purpose of the strategy as it relates to the goal, the roles and responsibilities of implementation partners, and potential resources to support implementation. The recommended strategies identified for each goal are shown on the following page.

IMPLEMENTATION AND NEXT STEPS

The recommended strategies are interconnected and will benefit from coordination between a variety of organizations and all levels of government. Investment in safety, new infrastructure, improved maintenance of non-motorized facilities, and development of programs that educate and encourage residents to walk or bike are necessary to advance the state of walking and bicycling in Montana. No single source of funding will be sufficient to fulfill the strategies in this Plan, nor can a single entity successfully carry out all recommended strategies. As agencies carry out implementation of the strategies, there are many considerations for funding and resources. The following ideas may serve as a starting point or a philosophy to aid in success:

- Identify issues
- Avoid missed opportunities
- Use the right assumptions
- Promote non-motorized transportation
- Education matters
- Prioritization

Recommended Strategies

Goal 1: *Reduce pedestrian and bicyclist fatalities and serious injuries in support of Vision Zero.*

Strategy 1A: Improve safety at intersections through applicable design standards and new technologies.

Strategy 1B: Periodically review and update design guidance for pedestrian and bicycle facilities.

Strategy 1C: Improve safety on rural roadways through widened shoulders.

Strategy 1D: Collaborate across jurisdictions to support changes to traffic laws aimed at improving the safety and predictability of walking and bicycling.

Strategy 1E: Develop and implement non-motorized crossing treatment guidelines.

Strategy 1F: Analyze pedestrian and bicycle crashes and contributing factors to identify potential safety improvements.

Goal 2: *Educate, encourage, and promote safe and responsible travel practices of motorists, pedestrians, and bicyclists.*

Strategy 2A: Explore cost-effective mechanisms to improve the quality of data on pedestrian and bicycle activity and travel behavior.

Strategy 2B: Improve and increase safety education and encouragement programs for pedestrians, bicyclists, and motorists.

Strategy 2C: Provide ongoing training programs for transportation engineers and planners focused on pedestrian and bicyclist needs and accommodations.

Goal 3: *Preserve and maintain pedestrian and bicycle transportation system.*

Strategy 3A: Develop a consistent approach for preservation and maintenance of pedestrian and bicycle facilities.

Strategy 3B: Explore innovative viable funding alternatives for maintenance of pedestrian and bicycle facilities.

Goal 4: *Improve mobility and accessibility for all.*

Strategy 4A: Improve accessibility and mobility using current design guidance and modern technology when building, upgrading, and retrofitting pedestrian and bicycle facilities.

Strategy 4B: Provide safe access to schools and areas with significant senior, minority and low-income populations.

Goal 5: *Support walking and bicycling as important transportation modes for access to destinations, economic vitality, and health.*

Strategy 5A: Improve community health and economic vitality by promoting walking and bicycling.

Strategy 5B: Explore innovative viable funding alternatives for pedestrian and bicycle transportation.

Strategy 5C: Support access to recreational, historic, cultural, downtown, and scenic destinations for improved tourism and economic vitality.

Strategy 5D: Evaluate criteria that ensures safety and meets relevant guidelines for bicycle route identification.

Strategy 5E: Improve administrative efficiency, consistency, and coordination for pedestrian and bicycle transportation.

Photo Credit: Montana Office of Tourism

01

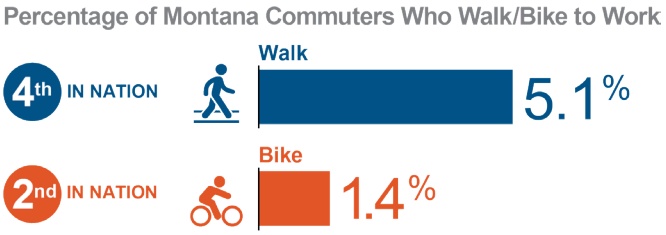
1.0. Introduction and Purpose

The *Montana Pedestrian and Bicycle Plan* (Plan) is the first statewide effort to address the needs of non-motorized users across the state. The Plan was developed by the Montana Department of Transportation (MDT) in coordination with other state and local agencies, stakeholders, and residents across the state. MDT's mission is to provide a transportation system and services that emphasize quality, safety, cost effectiveness, economic vitality, and sensitivity to the environment. Although the Plan primarily aims to provide consistency across MDT for considering pedestrian and bicycle modes on state owned and maintained facilities, it is understood that state facilities make up a small percentage of the overall public road miles in the state. As such, the Plan is intended to be utilized as a resource by both MDT and its partners as they work to fulfill the needs of pedestrians, bicyclists, and all who use the state's transportation system.

The Plan was developed as a collaborative process and identifies a collective vision to provide for pedestrians and bicyclists across the state.

1.1. Context

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.



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

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.

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.

1.2. Vision and Goals

Development of a vision and goals for the Plan is a critical first step in the transportation planning process. In addition to capturing related information from previous federal, state, and local planning efforts, the vision and goals describe the desired future conditions for walking and bicycling that Montana seeks, while providing the overall guiding direction for the implementation of the Plan. The vision provides a concise expression of what the Plan is expected to accomplish, while goals are broad statements that describe the desired end condition. For further information regarding development of the vision and goals, see **Appendix B**.

1.2.1. Development of Vision and Goals

Numerous federal, state, and local planning documents were reviewed to determine what, if any, non-motorized related visions and goals have already been developed within the state. The following planning documents were reviewed:

- Federal Transportation Authorization Acts
- United States Department of Transportation (USDOT) Policies
- *Americans with Disabilities Act* (ADA)
- *Public Right-of-Way Accessibility Guidelines* (PROWAG)
- *TranPlanMT*
- MDT *ADA Transition Plan*
- *Montana Comprehensive Highway Safety Plan*
- *Montana Tourism and Recreation Strategic Plan*
- *Big Sky. New Horizons. A Healthier Montana: A Plan to Improve the Health of Montanans*
- *Montana State Parks and Recreation Strategic Plan*
- Local Non-Motorized Plans
- Local Long Range Transportation Plans

Extensive public and stakeholder outreach was conducted to further develop a vision and goals for the Plan that captured the interests of Montana's residents and governing agencies (see **Section 2)**. Given the review of other planning documents and input received from the public and stakeholders, the following vision statement was developed:

Montanans desire a safe, accessible, and sustainable transportation system for pedestrians and bicyclists that facilitates access to destinations; supports economic vitality, active and healthy communities, and environmental stewardship; and serves all travel modes.

Five goals supporting the vision for the Plan were developed. The goals recognize the need for a balance between transportation choice, connectivity, accessibility, system preservation and maintenance, public health, safety, education, and environmental stewardship. These goals provide broad statements that are intended to direct the overall direction of the Plan towards Montana's vision. While these goals do not specify how these desired outcomes would be accomplished, the associated strategies discussed in **Section 6** are more specific and identify ideas to help attain each goal. Based on these considerations, the following goals for the Plan were derived:

Goal 1: *Reduce pedestrian and bicyclist fatalities and serious injuries in support of Vision Zero.*

Goal 2: *Educate, encourage, and promote safe and responsible travel practices of motorists, pedestrians, and bicyclists.*

Goal 3: *Preserve and maintain the pedestrian and bicycle transportation system.*

Goal 4: *Improve mobility and accessibility for all.*

Goal 5: *Support walking and bicycling as important transportation modes for access to destinations, economic vitality, and health.*

MONTANA
PEDESTRIAN & BICYCLE PLAN

Photo Credit: Robert Peccia and Associates

02

2.0. Public and Stakeholder Outreach

Public and stakeholder input is vital to understanding user needs and how walking and bicycling in Montana is viewed. This information was used early on in the planning process to identify a common vision and goals. As the Plan progressed, the input was used to help identify constraints and opportunities within the existing non-motorized transportation system, and to guide development of recommendations for improving non-motorized transportation in Montana. A number of engagement strategies were utilized to reach a wide spectrum of the state's population and agency stakeholders and to elicit meaningful participation from residents across Montana. Targeted outreach consisted of regional workshops, MDT district meetings, and an online survey. The results of the engagement efforts are discussed in this section.

Active participation and input on walking and bicycling in Montana was encouraged at key stages of the planning process.

2.1. Engagement Activities

Active participation and input on walking and bicycling in Montana was encouraged at key stages of the planning process. Key audiences involved in this process included local officials, state and local agencies, stakeholder organizations, advocacy groups, and the public. A proactive approach was taken to provide an opportunity for the stakeholders across the state to be engaged early and at key points throughout the planning process. For this Plan, a number of public engagement strategies were utilized to reach a variety of stakeholders and elicit meaningful participation from residents across Montana. The following public engagement methods were used throughout the Plan's development.

STEERING COMMITTEE

A Steering Committee was established to oversee the Plan development process. The Steering Committee consisted of representatives from state and local governmental agencies. Meetings were held as project milestones were met. The Committee identified issues and possible solutions, reviewed deliverables, and considered public input received.

STAKEHOLDER ENGAGEMENT

Stakeholder groups play a key role in implementing pedestrian and bicycle improvements in their jurisdictions by providing education and directing resources. Stakeholder groups may represent different interests and perspectives of walking and bicycling, making their feedback invaluable. Input from a broad range of stakeholders was important to the planning process and was solicited throughout the Plan development.

SOCIAL MEDIA

Periodic updates were posted to MDT's Facebook page. The updates announced workshops, shared facts, and gave notice when materials were updated on the website. Online content was shareable so MDT's partners could promote the Plan on their websites, blogs, and social media.

PROJECT WEBSITE

A project website (www.mdt.mt.gov/pubinvolve/pedbike/) was hosted by MDT. The website contained contact information, workshop announcements, frequently asked questions about the planning process, a description of the Plan, finalized documents, interim memorandums, and a commenting platform.

The project website was used to distribute information. (www.mdt.mt.gov/pubinvolve/pedbike/)

PUBLIC COMMENTS AND INPUT

Public comments and concerns received at meetings and through individual discussions were considered by the Steering Committee throughout the planning process. An official comment period was provided after the release of the draft Plan (April 5, 2019 through May 5, 2019). See **Appendix E** to review the public comments and responses to comments recieved.

EMAIL CONTACT LIST

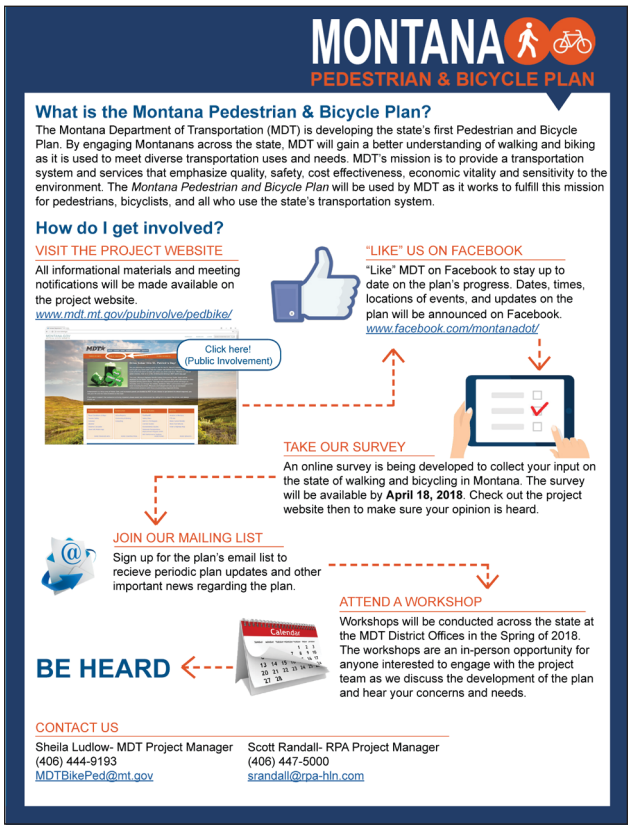
A contact list of stakeholders and interested parties was maintained throughout the planning process. The contact list consisted of names and email addresses for those wishing to receive periodic updates on the Plan. Contact information for identified stakeholders, individuals who made public comments, and those wishing to stay informed about the Plan were collected. Outreach to the contact list included periodic emails, updates as needed, distribution of newsletters/flyers, and other important news regarding the planning process.

2.2. Targeted Outreach and Engagement

The intent of targeted outreach was to obtain meaningful input and dialogue about walking and bicycling and to disseminate important information about the Plan. The following describes the outreach events and strategies employed to interact with state and local agencies, stakeholders, and the public.

2.2.1. Bike Walk Summit

The project team leveraged the state Bike Walk Summit, which was held on March 21-23, 2018 in Bozeman. The Summit, hosted by Bike Walk Montana, represented a captive audience of key stakeholders from across the state. MDT and the project team also hosted a session where the Plan was announced to attendees. Summit participants were encouraged to promote engagement in their local communities.



The Bike Walk Summit was a key initial step to gaining public interest and promoting the Montana Pedestrian and Bicycle Plan.

2.2.2. Regional Workshops

To better understand the issues, concerns, and needs faced across the state regarding walking and bicycling, the project team conducted open house workshops at six locations across the state. The workshops were intended to reach a broad audience to discuss the development of the Plan and to hear from local governments, stakeholders, and the public about their concerns and needs. Workshops offered an in-person opportunity for interested individuals to share their input and ideas and to provide the project team with guidance for development of the Plan. The six public open house workshops were held at the following locations on the following dates:

- **Havre** – May 15, 2018
- **Glendive** – May 23, 2018
- **Billings** – May 24, 2018
- **Butte** – May 29, 2018
- **Missoula** – May 30, 2018
- **Helena** – May 31, 2018

The workshops were organized into sessions, and local agencies, stakeholders, and the public were invited to attend. The workshop format was the same for each group in each location and provided an opportunity for different points of view. To adequately address the many aspects of pedestrian and bicycle transportation, and to help initiate conversations, the following stations were set up at each workshop:

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

Stations were staffed by members of the project team who facilitated discussions. Participants were encouraged to visit each station and share input as it pertains to their experience with walking and bicycling in Montana. The project team took comprehensive notes and encouraged meaningful feedback through one-on-one and small group conversations. In total, there were 148 attendees at the 6 workshops with 123 pages of notes collected. A summary of the most prevalent comments is provided 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. 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 various jurisdictions are faced with regarding limited funding for maintenance, education, and expansion of infrastructure. The need to identify additional and alternative resources was emphasized.
- **Facilities:** Non-motorized facilities that provide safe and appropriate accommodations for all users are desired. Connectivity and accessibility of facilities, along with prioritization of pedestrian and bicycle infrastructure, were also highlighted.
- **Education:** 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 education for all ages through schools, drivers education, and public service announcements. 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.


Photo Credit: Robert Peccia and Associates

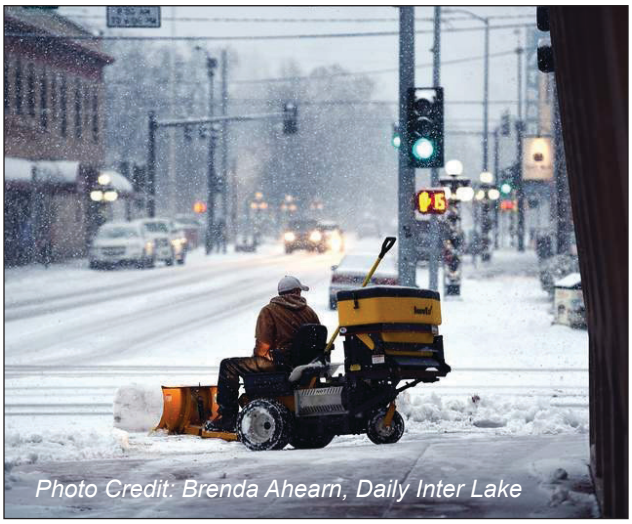
Photo Credit: Robert Peccia and Associates

Almost 150 people attended the workshops at 6 locations across the state. More than 120 pages of notes were collected during the events.

2.2.3. MDT District Meetings

Meetings were held with MDT staff at the five district locations and at 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 or barriers are faced. The discussion was intended to understand the existing state of non-motorized transportation within MDT 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 an inconsistent view of roles and responsibilities in providing for pedestrian and bicycle 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.



Local jurisdictions often lack the funding, manpower, and proper equipment to preserve and maintain existing infrastructure.

2.2.4. Online Survey

An online survey was developed that lead the user through a series of questions and activities to collect their opinions, interests, and feedback about the state of walking and bicycling in Montana. The survey was available via the project website and an online link was sent to stakeholders to distribute to their local communities. Special attention was made to achieve diverse outreach across the state to special interest groups, stakeholders, decision-makers, non-motorized users, and general motorists. 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 bicycling trips. The survey then asked respondents to list their reasons for walking and bicycling as well as perceived barriers which prevent them from walking and bicycling 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, lived in urban areas, had higher income, and were represented by much higher percentages of bicyclists than the population as a whole. While not statistically significant, the survey provides key insights into the needs of a cross-section of Montanans. More detail on the results of the survey is provided in **Appendix C.**

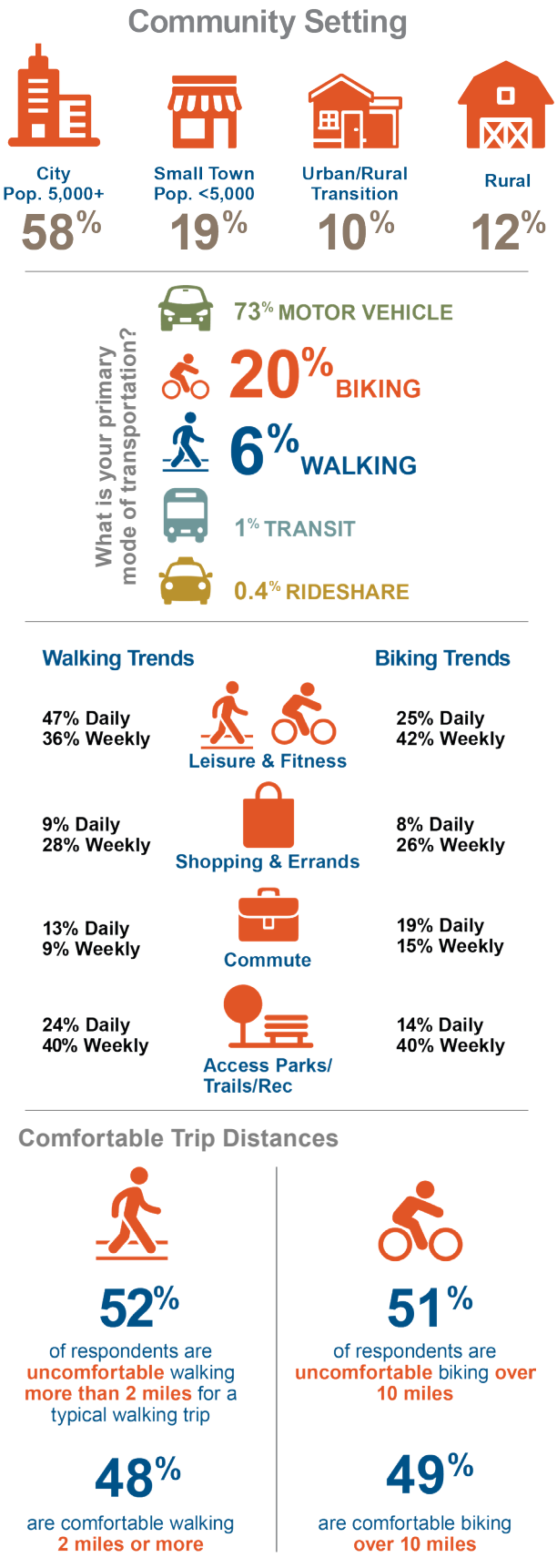


Photo Credit: Destination Missoula

03

3.0. State of Walking and Bicycling in Montana

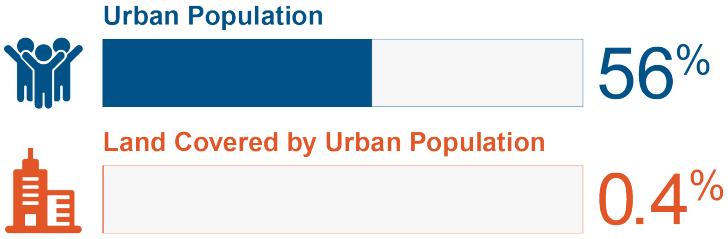
Many Montana communities have been experiencing an increased interest and investment in accessible pedestrian and bicycle facilities. More so than comfort and convenience, investments in pedestrian and bicycle accommodations are aimed at achieving the key goal of making it safer to walk and bike for everyday travel. When safety perceptions increase, research suggests that more people will walk and bike.[1] As more people walk and bike, the environmental, health, and economic benefits 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.

Despite being a vast state with a low overall population density, Montana has one of the highest mode shares by walking and bicycling in the nation and is statistically a safe place to travel by these modes.

3.1. 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 bicycling 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 an urban area, defined as populations of 5,000 or more (Montana Code Annotated (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 longer recreational purposes.



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

3.2. Facility Types

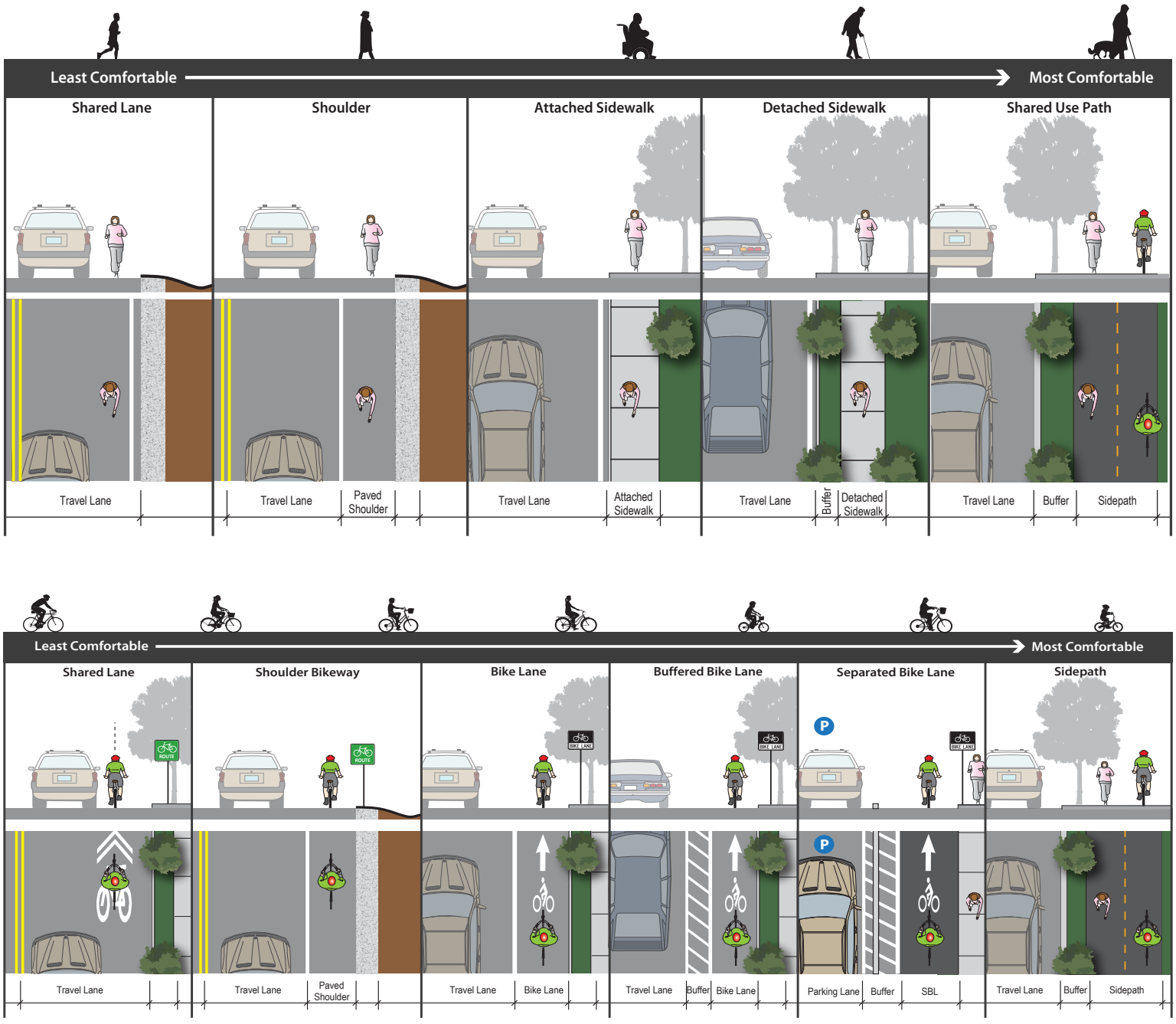
Pedestrians and bicyclists have a wide variety of skill levels and tolerances for traffic stress. For example, a bike lane may be perfectly comfortable for some bicyclists, while others might only use a bike lane if it's on a lower volume roadway. Similarly, in rural contexts, a paved or gravel shoulder 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.

Pedestrian and bicycle facilities have a broad spectrum of possible facility types with different levels of 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 linear facilities, intersections and crossings also influence perceptions of comfort. A lack of crossing facilities over a wider, higher speed roadway may act as a barrier to pedestrian travel. 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



Source: Alta Planning + Design

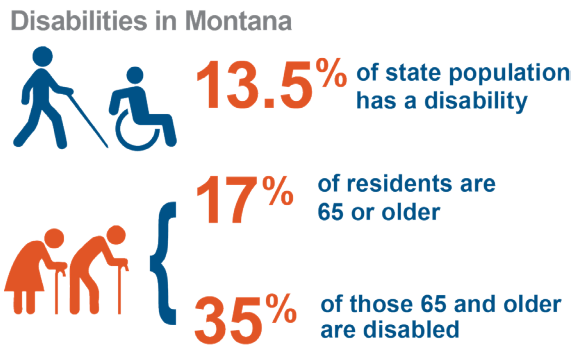
3.3. Transportation and Socioeconomic Conditions

Over 3.5 million households in the United States are contacted to complete the American Community Survey (ACS) each year. Since 2010, the ACS has supplemented the US Census, which only occurs once per decade. Among other characteristics, ACS data provides a snapshot of transportation and socioeconomic conditions. These conditions are summarized in this section for Montana. 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 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.



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

RACE AND ETHNICITY, POVERTY, AND INCOME LEVEL

Poverty and race/ethnicity are often correlated. 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.

Montanans' median household income is $48,380 and $27,309 per capita. Approximately 13 percent of Montanans 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 people.[3] 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.

EDUCATIONAL ATTAINMENT AND EMPLOYMENT

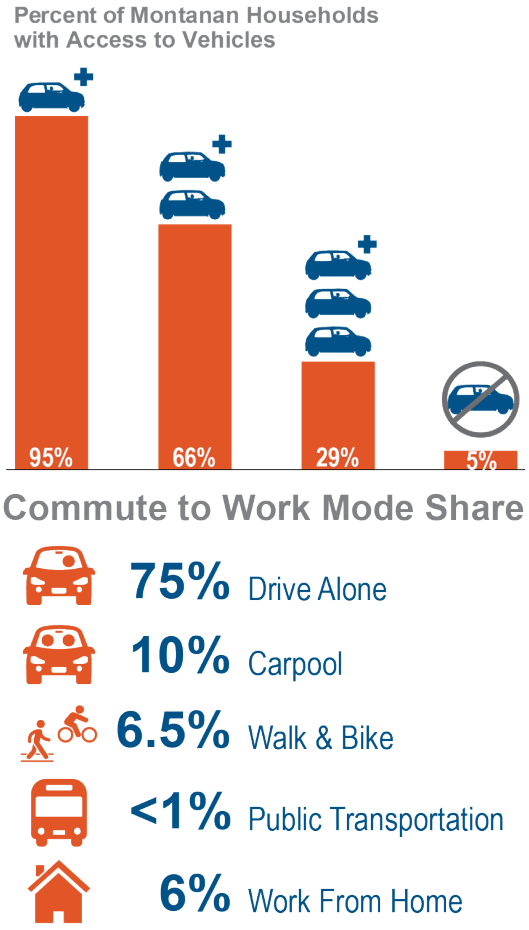
Most Montanans age 18 and over have a high school degree or higher level of education (92.9 percent). This figure is approximately five percent higher than the national average. In Montana, 30 percent of residents have at least a bachelor's degree. Level of educational attainment can influence walking 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, respectively.[4]

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 five 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 bicycling. The mean travel time to work in Montana, taking all modes into account, is roughly 17.9 minutes.

As commute trips are the only metric measured by the US Census Bureau, it stands to reason that this metric underrepresents overall walking and bicycling. 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 bicycling. Additionally, there were 2.2 other recreational-based trips by walking and 1.7 by 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**).



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

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 and recreation.*
*** Driving includes single occupancy vehicle 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.

3.4. Benefits of Walking and Bicycling

There are many benefits realized from walking and bicycling at the individual, household, and community levels. These benefits increase as walking and bicycling levels increase but can be hard to quantify. The benefits derived 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. 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.

If current levels of walking and bicycling continue for the next 20 years, the state could anticipate the following results:

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

*Refer to **Appendix C** for more detail on how these estimates were made.*

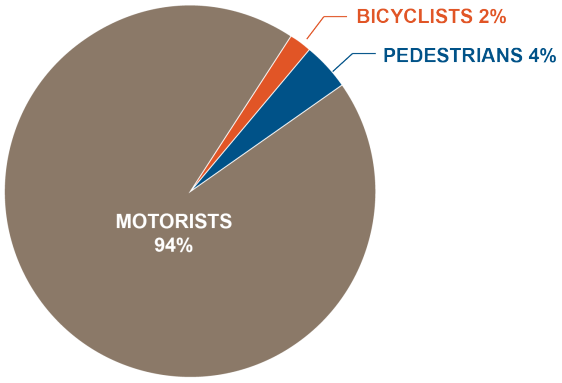
3.5. Safety

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*[5], FHWA established a fifth performance measure focused on reduction of non-motorized fatalities and serious injuries. The rule also establishes the process for State Departments of Transportation (DOT) and Metropolitan Planning Organizations (MPO) to establish and report their safety targets and progress made. This process is 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*

Figure 2: Fatalities and Serious Injuries in Montana



Source: MDT Crash Data 2008 - 2017

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 the past 10 years.[6]

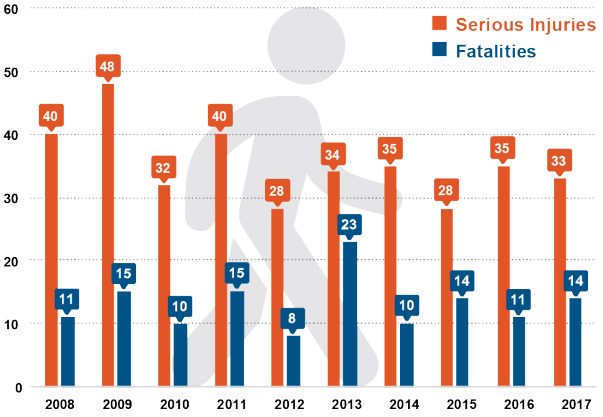
Figures 2 and **3** show that between 2008 and 2017, on average, there were 13 pedestrian fatalities and 35 serious injuries per year. For this same timeframe, on average, there was 1 bicyclist fatality and 24 serious injuries each year. The total number of combined non-motorist fatalities and serious injuries vary from year to year. Between 2008 and 2017, severe non-motorist injuries decreased by approximately 2.7 percent per year.

Between 2012 and 2016, 33 percent of pedestrian-involved severe injury crashes, and 14 percent of bicycle-involved severe injury crashes, were alcohol or drug related. In approximately 25 percent of the severe 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 severe injury bicycle related crashes.

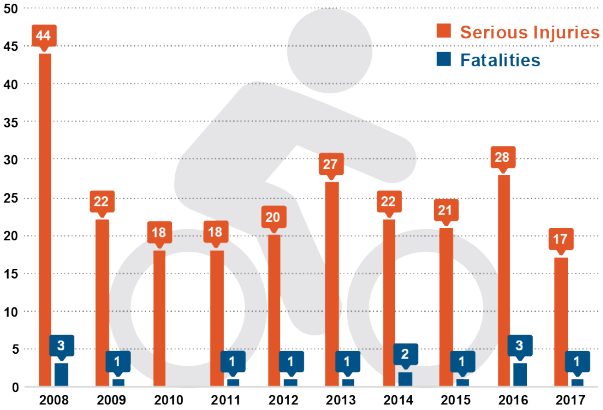
Across the state, approximately 30 percent of pedestrian fatalities or serious injuries occurred at, or were related to, intersections between 2012 and 2016. This number increases to 58 percent for bicyclist fatalities or serious injuries. Approximately 82 percent of pedestrian-involved intersection 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 report.[7] 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.

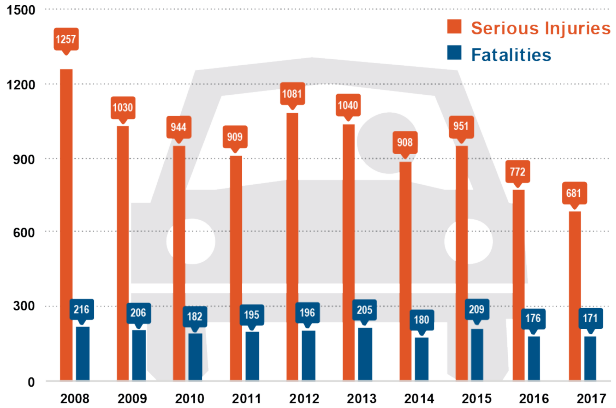
Figure 3: Severe Injuries by Mode



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

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

3.6. ADA and Accessibility

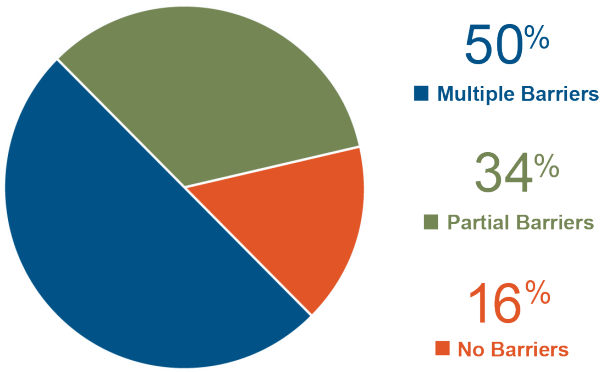
Under Title II of the Americans with Disabilities Act, state and local governments must ensure all of their physical assets are ADA compliant including both existing and newly-constructed facilities. Features within roadway right-of-way include elements such as curb ramps, sidewalks, crosswalks, median crossings, and pedestrian activated signal systems. Examples of accessibility barriers include steep curb ramp slopes, vertical sidewalk discontinuities (i.e. uneven sidewalks), and lack of pedestrian facilities in general.

MDT has been actively working on improvements to pedestrian accessibility. In 2011, the United States Access Board (USAB) published the PROWAG[9]. MDT has since adopted PROWAG as an applicable standard which addresses accessibility for the vision-impaired and pedestrians who use mobility devices at street crossings, access to transportation, and constraints posed by roadway design practices, slope, and terrain. The PROWAG is used as an additional resource to the ADA Accessibility Guidelines (ADAAG), which focuses mainly on facilities and sites but not conditions and constraints unique to public rights-of-way.

At the state level, MDT developed and adopted the updated *ADA Transition Plan*[10] in 2016, which identified a variety of methods to ensure roadway improvements are incorporating appropriate applicable standards. 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. **Figure 4** presents the condition of the curb ramps and pedestrian signals as of 2018. MDT is 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.

Figure 4: Curb Ramp and Pedestrian Signal Condition



Source: MDT ADA Transition Plan, online database, p.8 (2018) (Only signals and curb ramps within MDT right-of-way)

3.7. 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 the nation. In 2017, the state ranked 46th out of 50 in levels of obesity, meaning only 4 states had less obese populations overall.[11] While this is positive, the trendline between 1990 and 2017 (8.4 percent obese to over 25 percent obese) has shown a substantial increase in obesity throughout the country and in Montana.

According to the Center for Disease Control (CDC), over 60 percent of the state's 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+). Although obesity threatens the health and well-being of all Americans, obesity disproportionally affects low income families and minorities. In Montana, low-income[12] and Native American communities suffer higher rates of diabetes, indicating a heightened risk for obesity.[13]

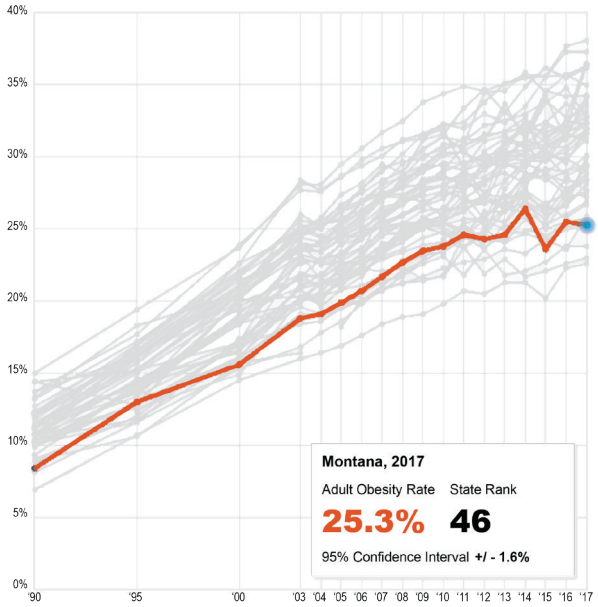
In 2017, three in every four adults and seven in ten children in Montana did not meet physical activity recommendations.[14] Walking and bicycling for transportation are part of a healthy lifestyle, which can help people stay at a healthy weight or lose weight. **Figure 5** shows adult obesity and physical 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 the state's vunerable populations 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.

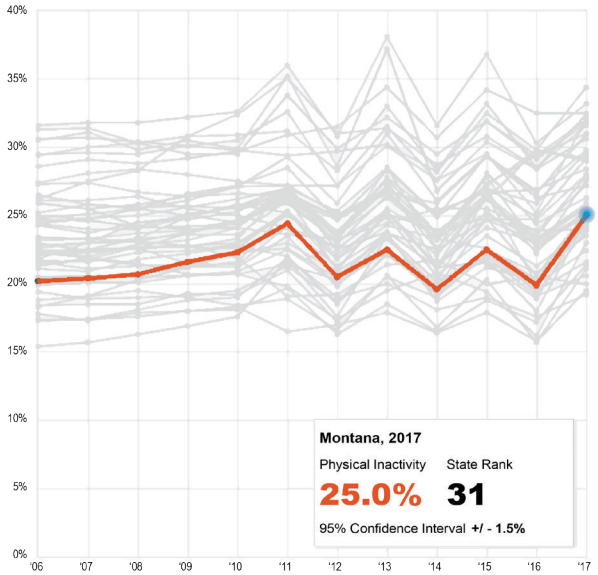
Recognizing the benefit of improving safe pedestrian and bicycle access for kids, Montana is involved in the nationwide Safe Route to Schools (SRTS) initiative. SRTS is aimed at developing both infrastructure and promotional (educational, encouragement, and enforcement) components to improve safety for those walking or bicycling 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.

Figure 5: Montana Obesity Rate and Physical Inactivity Statistics

Adult Obesity Rates, 1990 to 2017



Physical Activity Among Adults, 2006 to 2017



Source: The State of Obesity Behavioral Risk Factor Surveillance System September 2018

3.8. Economic Development and Tourism

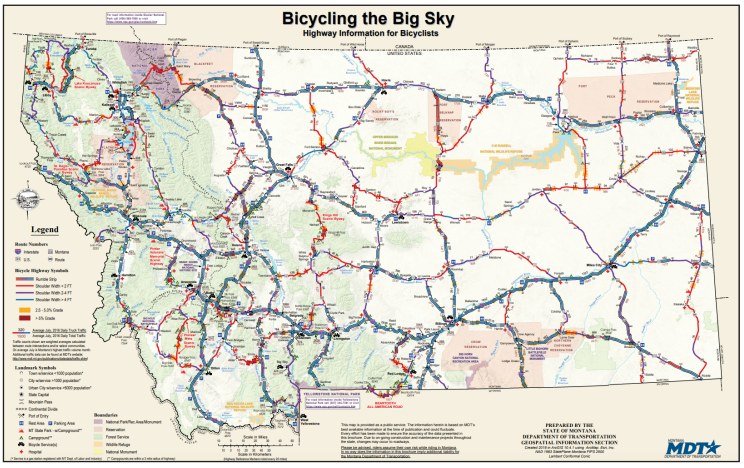
Montana is a state filled with natural beauty. Numerous mountain ranges, national parks, rivers and other attractions have fueled a strong and growing tourism industry for decades. Traveling on foot or by bicycle offers a different experience to driving that appeals to many. The Montana Department of Commerce (MDOC) plays an important role in fostering community-led 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 downtown planning activities. Many times, downtown revitalization plans focus on making communities' downtowns 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.[15] 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.[16] Resources can be found on MDT's website on the bicycling touring page.[17] 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 traveling on foot and by bicycle.

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 conducts research on travel, recreation and tourism in Montana. A 2013 study[18] found that day hiking was the second most popular activity (behind scenic driving) by nonresidents who visited Montana throughout the year. The study also found that 77 percent of Montana residents used walking/jogging/bicycling 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.



MDT's Bicycling the Big Sky map is a good resource for bicycle tourists. It provides information such as shoulder widths, grades, and the presence of rumble strips.

3.9. Investments

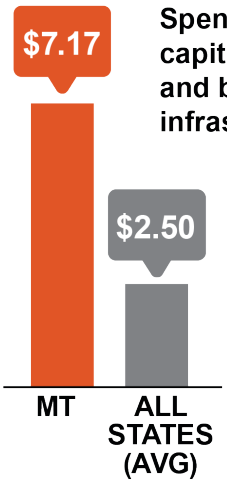
Funding for pedestrian and bicycle education, enforcement, encouragement, and infrastructure exists at the federal, state, local, and private levels. Some infrastructure projects are uniquely non-motorized, while others feature pedestrian and/or bicycle infrastructure as a component of a larger roadway 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 bicycling, spending almost $9 million annually, or just over $7 per person each year.

The Recreational Trails Program (RTP), administered by Fish, Wildlife & Parks (FWP), receives approximately $1.6 million annually under the current federal transportation bill. Montana State Parks collaborates with the State Trails Advisory Committee to review the RTP applicants each year. Decision makers are tasked with allocating 30 percent of RTP funding to motorized trail projects, 30 percent to non-motorized trail projects, and 40 percent to diversified (multiple-use) trail 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 federally and state funded walking and bicycling investments, many local agencies have shown a commitment to investing in non-motorized education and infrastructure within their respective 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 bike ambassadors, SRTS coordinators, and bicycle and pedestrian coordinators to carry out investments.



Spending per capita on walking and biking infrastructure

MONTANA RANKS

5th in amount federal dollars spent on walking and biking

$8,800,000

spent annually on construction of non-motorized infrastructure*

**MDT average annual spending for construction phase only (SFY 2013 – SFY 2018)*

Source: Federal Highway Administration Fiscal Management Information System
Note: This data only accounts for MDT administered federal funding. RTP and local funds have not been included in these figures.

3.10. 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, special interest groups, and individuals. 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. For example, a shared use path along a state-owned roadway that is located within both city and county 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.

City, county, 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 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 feasible.

In some cities, each individual property owner is responsible for the maintenance of the sidewalk abutting their property line. MCA 7-15-4125 states, “[t]he 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 and permitting process (on the 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.

When a continuous project exists within multiple jurisdictional boundaries, such as this project on Rouse Street in Bozeman, it is necessary to have well-defined agreements in place outlining the roles and responsibilities of each entity.

Photo Credit: Montana Department of Transportation

04

4.0. Complexities 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.

Funding has historically been, and is likely to continue to be, a challenge for developing and maintaining walking and bicycling facilities.

4.1. 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 bicyclists, making for a large system of potential bicycling opportunities. Communities also have other discrete trail systems and pedestrian and bicycle 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. MDT is responsible for maintaining approximately 13,000 of those miles. In Fiscal Year (FY) 2016, MDT spent over $112 million (nearly half of all state funded expenditures) on system preservation and maintenance of 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 traveled within the state.[19] 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.

In 2018, MDT updated the *Shared Use Paths Inventory and Detailed Maintenance Plan*.[20] The plan inventoried 203.4 miles of shared use paths within MDT right-of-way. 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 needs for shared use paths. Current maintenance needs to restore these paths to excellent condition totals approximately $363,000, a one-time cost. Other activities are essential for maintenance, such as snow removal, sweeping, and mowing, in addition to ongoing pavement preservation activities like pavement seals and pavement overlays. The annual costs for general maintenance activities was approximately $945,000 in 2018, which is mostly snow removal costs. While local agencies have maintenance responsibility through agreements with MDT to maintain some shared use paths, many jurisdictions have trouble meeting their maintenance obligations due to lack of funding, limited personnel, and insufficient equipment.

75,008 Miles of Public Roads

12,946 Miles of State Highways

$363,000
Current shared use path maintenance needs (onetime cost)

$945,000
Annual shared use path maintenance and preservation costs

Source: MDT Shared Use Paths Inventory and Detailed Maintenance Plan, 2018
Note: Data is only for shared use paths within MDT right-of-way

In addition to shared use paths within MDT right-of-way, many Montana communities have substantial networks of sidewalks, paths, on-street bike lanes, and bike routes. Over time, deferred maintenance on these facilities competes with capital projects for scarce local dollars. As with users of other modes, those who walk and bike desire a seamless system with high-quality facilities, regardless of ownership.

4.2. 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. These may include private, local, state, and federal sources. Successful communities have found that leveraging a variety of funding sources is most effective for providing for non-motorized transportation.

Various entities such as AARP, Blue Cross, and other organizations which promote non-motorized travel provide grants to communities for planning, safety and education programs, and small infrastructure projects. The MDOC offers grants for planning, infrastructure projects, tourism economic development, downtown revitalization, and 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 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 (Bozeman); and 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 improvements.[21] 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. Most federal funding sources require bicycle projects to "be principally for transportation, rather than recreation purposes." The exception is the Recreational Trails Program, administered by FWP.[22] 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 alternative funding sources.

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. 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.

$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)

In 2017, MCA 60-3-304 (*Distribution and Apportionment of Highway Funds: Shared Use Paths*)[23] was modified to include provisions that MDT recommends construction and maintenance standards for shared use paths 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 the 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 two 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 (House Bill 473[24]) provides MDT sufficient cash flow to sustain the match for the federal-aid construction program, which was in jeopardy prior to 2017. However, 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 traveled continue to grow, fuel efficiency gains have resulted in mostly stagnant revenues. MDT estimates that in the period 2018-2027, available revenues will only be able to meet approximately one third of the anticipated needs (approximately $5 billion of the $14 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 bill. While the federal fuel tax has remained the same since 1993, the cost of building and maintaining infrastructure has increased resulting in 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. The eligible funding categories have also evolved and have become more specific to pedestrian and bicycle projects.

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 21st 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

4.3. Context and Environment

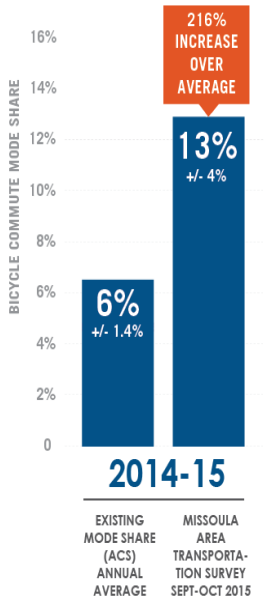
In many cases, transportation needs are not a primary factor in land-use decisions. When pedestrian and bicycle facilities are not proactively addressed in land-use decisions, gaps in the non-motorized transportation system often result. One example of this could be the decision to locate a school on 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 may not want to annex such areas due to the high cost of improving transportation and other city services. When non-motorized infrastructure is an afterthought, user safety may be compromised. 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.

Environmental conditions can influence non-motorized activity.

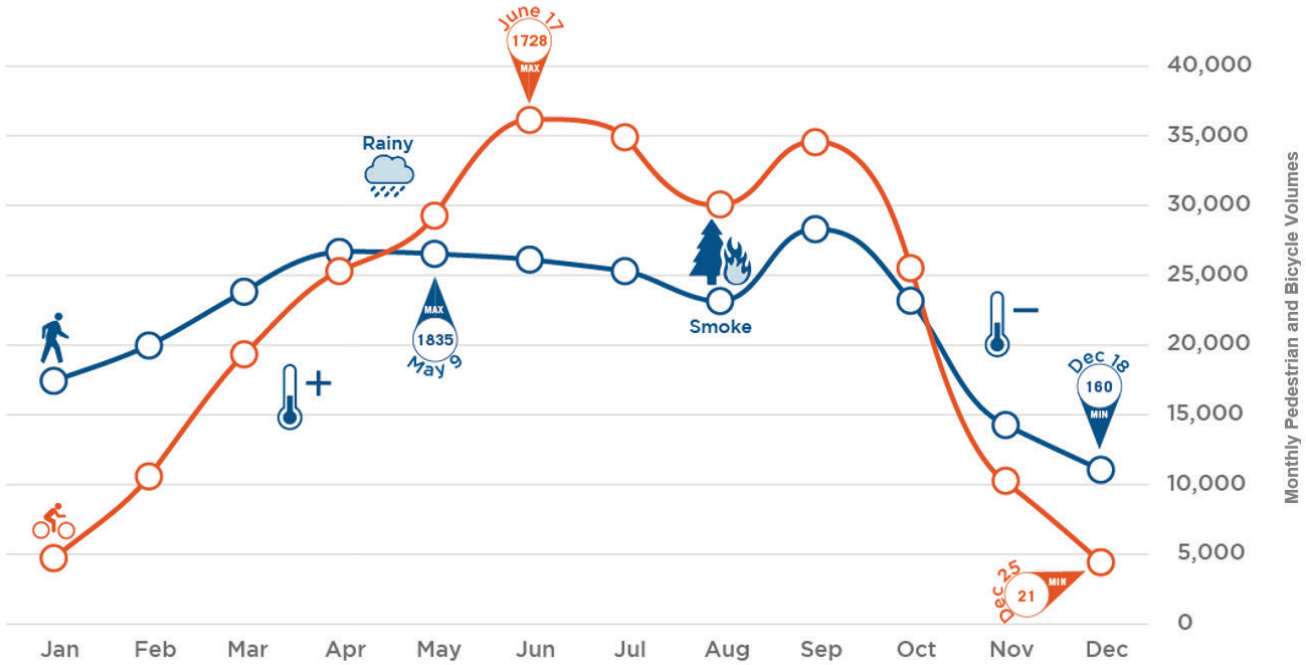
To help understand the rate of walking and bicycling in Missoula, a travel survey was conducted during September and October of 2015. The survey found substantially higher amounts of walking and bicycling than is recorded through the US Census (see **Figure 6**). The higher rates are likely due to a 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 bicycling 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.

Figure 6: Missoula Mode Share



The effects of weather conditions on walking and bicycling rates are illustrated by count data collected continuously along the Riverfront Trail in Missoula. 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 7**, shows that bicycling 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.

Figure 7: Monthly Pedestrian and Bicycle Activity



Source: Missoula Riverfront Trail Automated Counter, 2015

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.

4.4. 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 may require different facilities and accommodations which may not all fit within the available right-of-way. Presence of existing utilities and storm drainage can 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.

Determining the most suitable facility type for pedestrians and bicycles can also 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, however, will still prefer to ride on the roadway even if a separated facility is provided. Separated facilities may 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 is a proven safety counter measure for areas with a history of roadway departure crashes.[25] 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 utilizing narrower rumble "stripes". For the state highway system, MDT has developed guidance for considering rumble strips on rural state highways.[26]

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. Consultation and coordination with other agencies, local jurisdictions, stakeholders, and the public should be conducted to help identify needs and determine the best solutions within the confines of the project.

Photo Credit: Mountain Line, Missoula

Given constraints, it can be challenging to find a solution which accommodates the needs of all transportation users. The competing needs of multiple user types and the built environment makes finding feasible and implementable solutions difficult. This photo from Phillips Street in Missoula shows how personal vehicles, public transportation, bicycles, and pedestrians can all be accommodated on the roadway.

MONTANA
PEDESTRIAN & BICYCLE PLAN

Photo Credit: Robert Peccia and Associates

05

5.0. Existing Guidelines, Policies, Programs, and Laws

Providing for pedestrian and bicycle travel is dependent on more than just the provision of sidewalks and bike lanes. Having established guidelines and policies are critical to ensure consistent consideration and accommodation for walking and bicycling. Land use decisions, policies, education, encouragement, and design guidelines all play a role in improving the state of walking and bicycling. This section provides an overview of the regulatory framework and guidelines that surround pedestrian and bicycle facility design, education, and laws. While this information is not intended to be comprehensive, it provides an overview of the primary guidelines, policies, programs, and laws that are in place today.

Federal, state, and local governments have adopted policies and guidelines which help guide development of pedestrian and bicycle facilities.

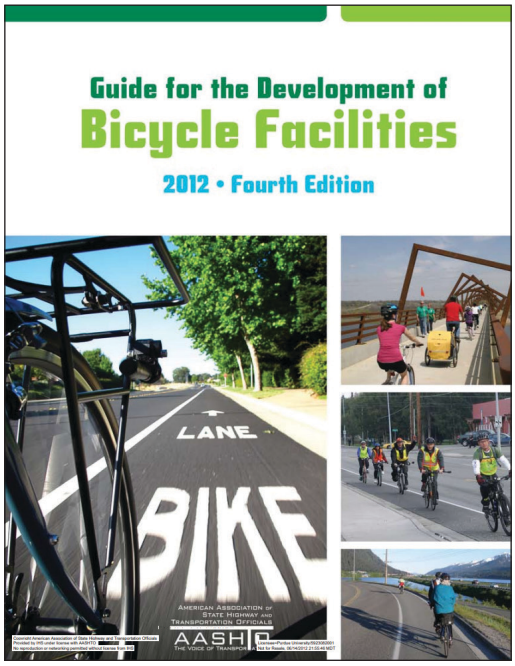
5.1. Standards and Resources

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 *Road Design Manual* (RDM)[27]. The manual provides guidance for geometric design, 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 judgment on projects and roadway design innovation.

Chapter 7 of the RDM includes "Multimodal Design Considerations." The 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. The 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)*[28] with several notable additions. The RDM includes guidance on two-stage turns for bicyclists, bike boxes, buffered and separated bike lanes. Guidance on crossing treatments for pedestrians and bicyclists is also provided. In many cases "typical widths" are provided that exceed "minimum" widths. Additional information on crossing treatments and signing for pedestrian and bicycle features is provided in the *Manual on Uniform Traffic Control Devices* (MUTCD).[29] With the changes in the 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 bicycling design.

Some local municipalities have developed their own guidance on the development of pedestrian and bicycle facilities, while others rely on outside 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, USAB, the Transportation Research Board (TRB), and the Institute of Transportation Engineers (ITE).

Where maintenance of non-motorized facilities is concerned, agencies typically refer to a variety of sources. Though there are not widely accepted standards of maintenance, jurisdictions generally have clearly defined roles and responsibilities for facility maintenance.



The AASHTO Guide for the Development of Bicycle Facilities provides information on how to develop facilities that meet the needs of bicyclists and highway users. It is currently being updated.

5.2. Statewide and Local Policies/Guidelines

Both 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*[30], the *Highway State Special Revenue Account (HSSRA) Management Policy*[31], and guidance related to rumble strips[32]. 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 aimed at maintenance of sidewalks and development of 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 are typically reliant on context.

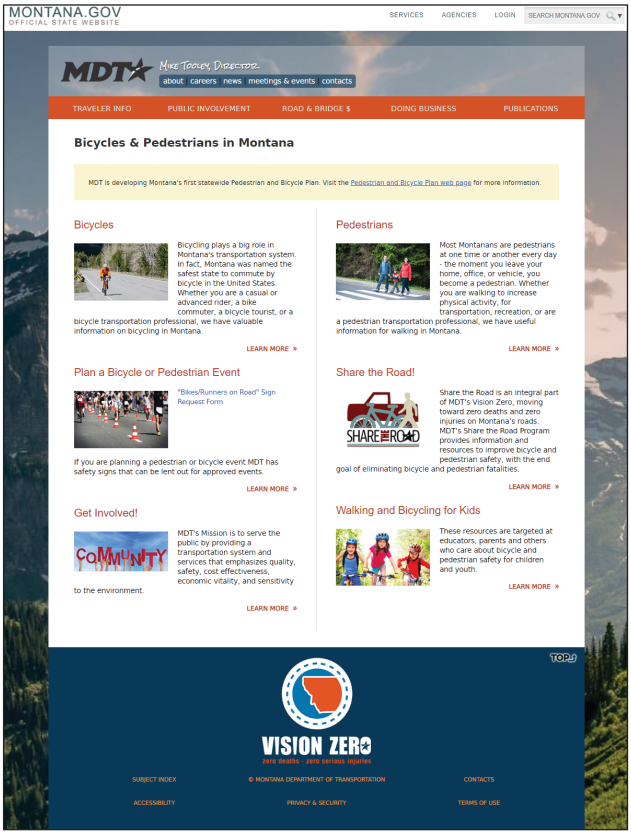
Participation in local events such as bike rodeos or national programs such as Walk to School Day can help encourage children to walk and bike more frequently.

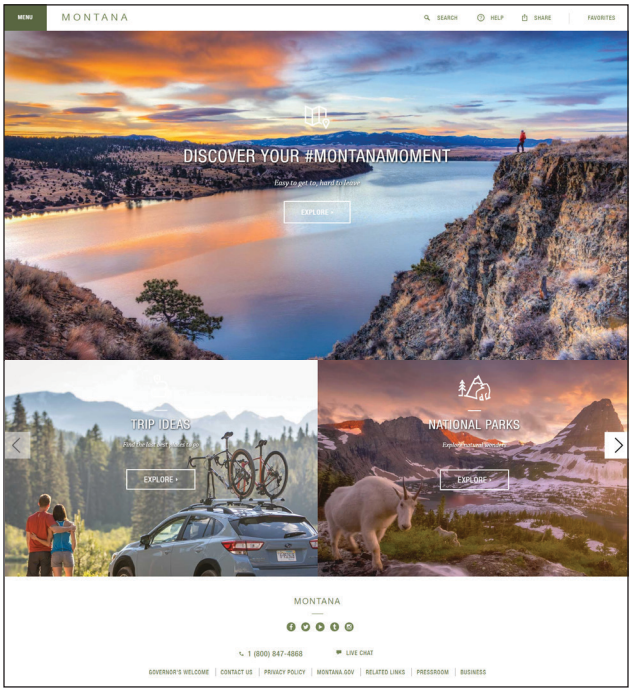
5.3. Education and Encouragement Programs

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

- **MDT Bicycle and Pedestrian Website:** 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 MDT project development, distributes safety education materials, provides technical support to local governments and the public, and shares pedestrian and bicycle resources.

- **Share the Road Program:** 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 & Parks:** Montana FWP maintains a comprehensive list and map of Montana's State Parks which offer extensive hiking and bicycling 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 programs. Additionally, through its vistmt.com website, MDOC also offers extensive planning information for hiking and bicycling 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 includes improving accessibility of communities for foot and bicycle 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 bike (i.e. Bike Walk Montana, Adventure Cycling Association, AARP, SRTS programs, etc.)





[top] The MDT Bicycles and Pedestrians in Montana website (www.mdt.mt.gov/travinfo/bikeped/) provides useful information on laws, safety, and route planning.
[bottom] The MDOC website (visitmt.com) is a helpful resource for prospective hiking and bicycling tourists.

5.4. 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 laws regarding 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 61-12-101[33] 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 61-8-500.[34] 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. State law asserts that every pedestrian crossing a roadway at any other point other than at an intersection shall yield to all vehicles on the roadway. Local pedestrian laws are somewhat limited but do not conflict with the state laws.

Montana is a "yield" state. Motorists must yield to pedestrians in marked and unmarked crosswalks at intersections.

Bicycle traffic laws are discussed in MCA 61-8-600.[35] 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 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 have adopted helmet laws. Laws regarding parking, licensing, and registration of bicycles have been adopted locally but not statewide. Use of handheld devices while bicycling is not explicitly discussed, although some local jurisdictions have brought specific attention to this issue.

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. Lack of enforcement can reduce compliance and consequently raise safety concerns. Funding constraints often limit the number of on duty patrols, making enforcement of pedestrian and bicycle laws a low priority.

Enforcement is not exclusively for police officers. 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 neighborhood speed watches, slow down yard sign campaigns, neighborhood fight back programs, pace-car campaigns, radar speed trailers, pop up projects, and crossing guards.[36]

Additional state and federal laws also exist that are applicable to project funding, eligibility, design, and implementation.

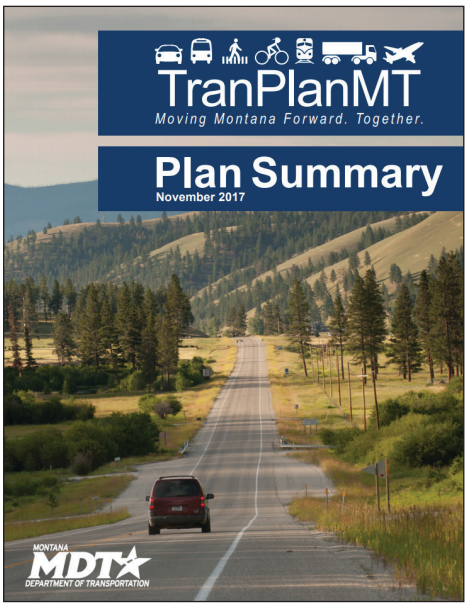
5.5. Long-Range Planning

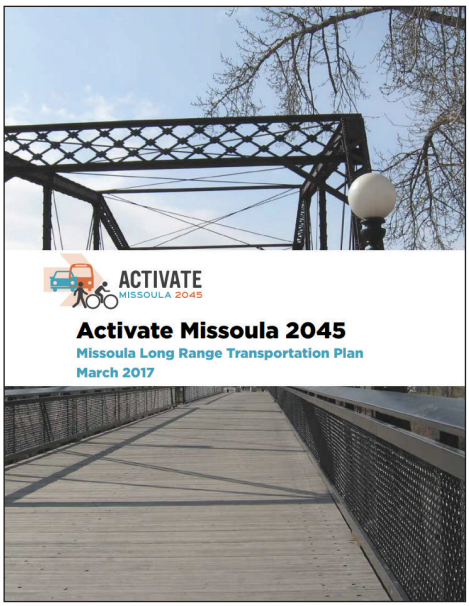
Montana's long-range transportation plan, *TranPlanMT*, was updated in 2017.[37] The plan identifies transportation needs, evaluates public and stakeholder issues and priorities, assesses future concerns, and establishes policy goals and strategies to achieve Montana's overall transportation vision. The plan guides MDT's efforts to plan, manage, and preserve a safe and efficient transportation system.

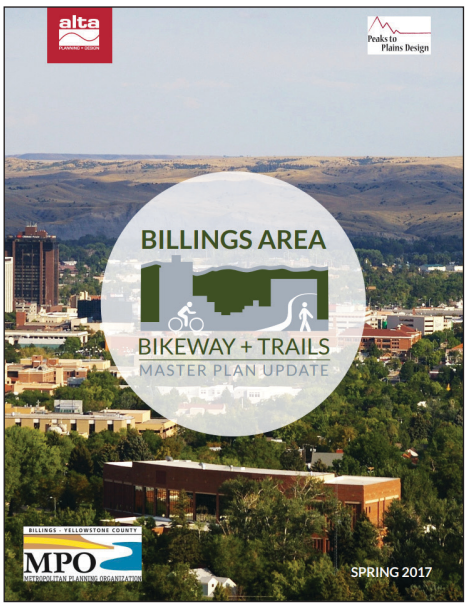
TranPlanMT sets policy direction for MDT based on public and stakeholder input. A broad outreach effort involving MDT personnel, transportation stakeholders, public users, state, tribal, county, and municipal leaders helped identify transportation goals and strategies. *TranPlanMT* includes non-motorized transportation wherein it discusses the state's current pedestrian and bicycle facilities, safety, usage, and demand. The *Montana 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.

In addition to LRTPs, some communities have developed parks and recreation plans, trails plans, pedestrian safety plans, or growth plans, which may focus more on the recreational aspects of non-motorized travel.







The Montana Pedestrian and Bicycle Plan further defines the non-motorized component of TranPlanMT. Many Montana cities, like Missoula, have developed multi-modal transportation plans specific to their planning areas. Other communities, such as Billings, have developed plans which focus solely on non-motorized travel.

Photo Credit: Tom Robertson, Adventure Cycling Association

06

6.0. Recommended Strategies

Walking and bicycling as modes of transportation have been steadily increasing across the country and throughout many of Montana's communities. While the benefits of walking and bicycling are recognized, providing for pedestrians and bicyclists poses many challenges. Large and diverse geographic areas, changing land use and travel patterns, system linkage, limited financial resources, maintenance responsibilities, and other implementation challenges complicate the effort to provide for pedestrians and bicyclists. The previous sections provide a review of the state of walking and bicycling in Montana as heard from the public, stakeholders, and research, as well as described barriers and challenges to providing for pedestrians and bicyclists. Considering the identified needs, strategies were identified to improve the state of walking and bicycling in Montana.

Recognizing the challenges faced across the state, a series of strategies were identified to help achieve the Plan's vision and goals.

6.1. Structure for Defining Strategies

Strategies were identified to support each of the Plan's five goals to help achieve the vision for walking and bicycling in Montana. The strategies have been organized under the Plan's goals:

Goal 1: *Reduce pedestrian and bicyclist fatalities and serious injuries in support of Vision Zero.*

Goal 2: *Educate, encourage, and promote safe and responsible travel practices of motorists, pedestrians, and bicyclists.*

Goal 3: *Preserve and maintain pedestrian and bicycle transportation facilities.*

Goal 4: *Improve mobility and accessibility for all.*

Goal 5: *Support walking and bicycling as important transportation modes for access to destinations, economic vitality, and health.*

For each of the recommended strategies the following elements are discussed: the purpose of the strategy as it relates to the goal, the roles and responsibilities of implementation partners, and potential resources to support implementation. Each of these elements are defined in this section.

STRATEGY

A strategy is an approach to improving walking and bicycling in support of the established goals. Implementation of the strategies will involve a series of more specific activities along with coordination from a variety of partners. Strategies consider the constraints and opportunities to target the most significant issues associated with walking and bicycling in Montana. Strategies provide broad guidance and suggestions to achieve the desired goal that will leverage changes to support walking and bicycling. It is envisioned that the strategies will help inform and direct decision making for implementation partners. The strategies are intended to be implementable over the 20-year planning horizon of this Plan but will require cooperative efforts and commitment of resources.

PURPOSE

The purpose of the strategy provides context as to why it is needed or why it is beneficial in Montana to achieve the desired goal. The purpose also provides insight into how the strategy will improve or benefit walking and bicycling across the state.

ROLES AND RESPONSIBILITIES

A variety of agencies and stakeholders may have the resources, jurisdiction, or special expertise necessary to accomplish the recommended strategies. As such, successful implementation of the strategies may require cooperation and effort from multiple entities. Depending on the strategies, roles and responsibilities may fall to a variety of entities, including MDT, the Montana Legislature, various state and federal agencies, local jurisdictions, stakeholders, and the public. A variety of illustrative activities for implementing the strategy over time are included. These are ideas that may help agencies and other partners implement the strategies. The ideas may not be applicable to all agencies, including MDT. Furthermore, the activities are not intended to be all inclusive, nor are they requirements to implement the strategy. Rather, they are suggestions to consider as agencies look to improve the state of walking and bicycling.

RESOURCES

This information defines resources that may be of use when implementing a recommended strategy. Resources to support implementation include: national programs providing technical support; educational and promotional campaigns; and published guidebooks, manuals, policies that may aid in design of pedestrian and bicycle facilities. Note that the resources may only apply to some situations depending on jurisdictional authority, funding programs, and other implementation considerations.

Goal 1: Reduce pedestrian and bicyclist fatalities and serious injuries in support of Vision Zero.

Photo Credit: Alta Planning + Design

Strategy 1A: *Improve safety at intersections through applicable design standards and new technologies.*

PURPOSE:

Intersections are locations where roadway users travel in different directions and have the most potential for conflict. Statewide crash data show that 40 percent of severe pedestrian and bicycle crashes occur at intersections and are most likely to occur in urban areas. Each intersection is unique in terms of traffic volumes, context, crash history, and pedestrian and bicyclist needs. Intersections should be examined on a case-by-case basis to determine if improvements to design can mitigate safety concerns.

RESOURCES:

- PROWAG
- MUTCD
- AASHTO Guide for Planning, Design and Operation of Pedestrian Facilities
- AASHTO Guide for the Development of Bicycle Facilities
- National Cooperative Highway Research Program (NCHRP) Guide for Reducing Collisions at Signalized Intersections
- NACTO Urban Bikeway Design Guide
- FHWA Design Guidance Accommodating Bicycle and Pedestrian Travel: A Recommended Approach

ROLES AND RESPONSIBILITIES:

City, county, and tribal governments, as well as MDT, all have a role in intersection safety. The public and stakeholders can and should bring perceived issues to the attention of the relevant agency. Improvements may be simple and low-cost efforts such as signing, striping, or adjustments to signal timings. Others may be large capital efforts which may need to be evaluated through transportation and capital improvement planning processes. Agencies may consider less expensive interim projects in advance of more costly reconstruction. The following ideas can be employed, when applicable, by any agency considering intersection design and safety improvements:

- Consider use of leading pedestrian intervals at urban signalized intersections with pedestrian crash history.
- Consider automatic pedestrian phases and/or radar detection as appropriate.
- Consider signal timing analysis when planned work is commensurate with performing signal timing changes.
- Utilize perpendicular curb ramps as a default unless conditions necessitate otherwise.
- Consider curb extensions, where appropriate, to reduce crossing distance and improve visibility of pedestrians.
- Carry bike lanes up to and through intersections using proper design and treatments.
- Consider advanced crossing treatments at unsignalized intersections along major roadways where appropriate.
- Consider intersection designs such as roundabouts and protected intersections where appropriate.
- Update design guidance periodically to incorporate the latest technology and treatments. (See Strategy 1B)
- Consider feasibility of “No Right On Red” signage at urban signalized intersections with a history of non-motorized crashes and/or where high volumes of pedestrians and bicycles are present.

Strategy 1B: *Periodically review and update design guidance for pedestrian and bicycle facilities.*

PURPOSE:

More than half the state's population resides in an urban area. The majority of transportation-based pedestrian and bicyclist activity also occurs in urban areas. Urban collectors and arterial roadways are often the most direct, but least comfortable routes to walk or bicycle due to higher vehicle speeds and traffic volumes. As vehicle speeds and volumes increase, greater separation from traffic provides for more comfortable and more broadly usable non-motorized facilities. However, the built environment often poses a constraint to implementing separated non-motorized facilities. As such, parallel street networks can also provide options for lower speeds and traffic volumes, and improved comfort for a broad range of users if the route has sidewalks, adequate wayfinding, and provide convenient crossing opportunities at major streets.

RESOURCES:

- PROWAG
- MUTCD
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
- AASHTO Guide for the Development of Bicycle Facilities
- AASHTO Policy on Geometric Design of Highways and Streets
- NACTO Urban Bikeway Design Guide
- NACTO Urban Street Design Guide
- FHWA Separated Bike Lane Planning and Design Guide
- Other publications/research conducted by ITE, TRB, NCHRP, and FHWA

ROLES AND RESPONSIBILITIES:

MDT has the responsibility of designing and maintaining the state highway system per state and federal guidelines. Local agencies and jurisdictions may have roadway standards and guidelines for their local facilities. Many communities have developed local transportation plans which identify recommendations to improve the transportation system.

All transportation agencies should periodically review design guidance and subdivision regulations to ensure they represent the most current practices and guidance promoted by AASHTO and others as appropriate. The 2010s have seen rapid evolution in design guidance with a number of new resources being published as well as support for these treatments at the Federal (AASHTO and FHWA) level. As right-of-way needs vary, design flexibility is encouraged to best accommodate competing needs. The following ideas can be employed, where applicable, by any agency when updating standards:

- Consider sidewalk and bike lane widths greater than minimum standards when feasible and appropriate to meet demand.
- Consider the feasibility of buffered or separated bike lane designs on corridors with travel speeds of 30 mph or greater.
- Consolidate driveways and accesses to reduce the number of conflict points for pedestrians and bicyclists.
- Provide boulevards when feasible between sidewalks and the roadway to allow for buffer distance and snow storage.
- Consider requiring construction of appropriate non-motorized infrastructure as part of local development.

Strategy 1C: *Improve safety on rural roadways through widened shoulders.*

PURPOSE:

Montana is a large rural state with over 75,000 centerline miles of roadways. MDT maintains approximately 13,000 of those miles, 93 percent of which are rural roadways or highways outside of urban areas. 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. Rural roads and highways connect Montana's communities and may also facilitate long distance bicycle tourism.

RESOURCES:

- PROWAG
- MUTCD
- FHWA Small Town and Rural Multimodal Networks Guide
- FHWA Design Guidance Accommodating Bicycle and Pedestrian Travel: A Recommended Approach
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
- AASHTO Guide for the Development of Bicycle Facilities
- AASHTO Policy on Geometric Design of Highways and Streets
- MDT Route Segment Plan

ROLES AND RESPONSIBILITIES:

It is not feasible for the state, counties, and cities, for a variety of reasons, to widen every rural road or highway to include wide shoulders. State and local agencies should consider the level of pedestrian or bicycle activity that is existing or anticipated on rural roadways and use it in their decision making for capital projects and maintenance planning. For MDT, the Route Segment Plan exists as a guide for shoulder widths on future major rehabilitation and reconstruction projects. The following ideas can be employed, where applicable, by any agency:

- Regularly examine roadways during surface preservation to adjust rumble strip location if feasible.
- Consider retiring "Share the Road" sign deployment in favor of "Bicycles On Roadway" messaging per FHWA Small Town and Rural Multimodal Networks Guide.
- Consider requiring development or continuation of non-motorized facilities as part of local development to ensure connectivity in rural areas.
- Consider bicycle and pedestrian travel when planning for shoulder expansion of roadways.
- Consider future growth in design for urban/rural fringe.

Strategy 1D: *Collaborate across jurisdictions to support changes to traffic laws aimed at improving the safety and predictability of walking and bicycling.*

PURPOSE:

When considering road safety, it is easy to focus solely on the presence of pedestrian and bicycle facilities. As part of a comprehensive approach, the laws and standards by which all users are obligated to operate are also critical factors to safety. Most cities have local code or ordinances regarding pedestrians and bicyclists which often expand upon and are more stringent than state law. Improvements to state law and consistency in local pedestrian and bicycle laws throughout the state could aid in increased safety and predictability for motorists and non-motorists alike.

ROLES AND RESPONSIBILITIES:

In order to change traffic laws to improve safety and predictability of users, the Montana State Legislature would need to pass new legislation. MDT and other state agencies are limited in their ability to lobby, however, they can provide technical expertise when requested. Support from external groups or members of the legislature may help to facilitate legislative action. The following list of ideas are derived from recent legislative changes and efforts underway in a variety of states with some having been previously proposed in Montana. Studies and additional effort will be necessary to customize these ideas for Montana. The following ideas are illustrative of the types of traffic law changes that may improve safety and predictability:

- Solicit support for methods for reducing speed limits on local streets outside of school zones.
- Solicit support for a “safe passing law” aimed at defining lawful behavior by motorists overtaking bicyclists.
- Study emerging technology such as e-bicycles, e-scooters and other electric devices. The 2015 bill that defined electric bicycles as having the same rights and responsibilities as a standard bicycle may not be expansive or nuanced to consider all applications of emerging technology.
- Study and address use of electric mobility devices as modes of transportation, including rights and responsibilities.

RESOURCES:

- Montana Code Annotated
- Pedestrian and Bicycle Information Center

Strategy 1E: *Develop and implement non-motorized crossing treatment guidelines.*

PURPOSE:

Oftentimes, the decision to walk or bike is subject to the user's ability to safely cross roadways along the desired travel route. A variety of treatments such as crosswalks, flashing signs, refuge islands, and other devices can be utilized to improve pedestrian safety when crossing roadways. Treatments will provide a variety of experiences depending on application. Guidelines should adequately allow for the provision of a new crossing, but also consider impacts that the crossing will have on safety and capacity of the roadway. Factors include speed, volume, distance to nearest signalized intersection, type of control, and actuation/coordination (if applicable).

No nationally recognized methodology exists to evaluate the context of the crossing with the recommended treatment, though some states and local agencies have developed their own guidance. Treatments may not be applicable under all circumstances and crossings should be examined on a case-by-case basis to determine which, if any, improvements can mitigate safety concerns.

ROLES AND RESPONSIBILITIES:

MDT and local agencies can develop their own guidelines for pedestrian and bicycle crossing treatments. The following ideas can be employed, where applicable, by any agency:

- Route mid-block shared use paths to existing intersections if nearby.
- Consider adjacent facilities, land use, and existing activity when evaluating non-motorized crossings.
- Consider latent demand of pedestrian and bicycle crossings in addition to the number of people willing to cross at an unsafe condition.
- Consider user comfort in design. Treatments that have higher yielding performance or stop traffic will yield a more comfortable crossing.
- Provide appropriate treatments for crossings of major roadways.

RESOURCES:

- MUTCD
- NCHRP Report 562 – Improving Pedestrian Safety at Unsignalized Crossings (2006)
- Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations (2005)
- NACTO Urban Bikeway Design Guide
- NACTO Urban Street Design Guide

Strategy 1F: *Analyze pedestrian and bicycle crashes and contributing factors to identify potential safety improvements.*

PURPOSE:

Infrastructure design, motorist and non-motorist behavioral factors, and environmental factors can all influence the safety of pedestrians and bicyclists. Understanding and identifying underlying safety problems can be difficult due to lack of data from near misses or unreported crashes. However, the available crash data does provide an ample amount of information which can be used to help properly identify appropriate safety countermeasures. 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 crash type or contributing factor may help identify countermeasures proven to address identified trends. However, some crashes are varied in nature and may be the result of unique circumstances and may not be easily mitigated.

ROLES AND RESPONSIBILITIES:

Crash analysis should be periodically undertaken in every community, possibly as part of a safety plan or as part of a regularly scheduled transportation planning process. The following ideas can be employed, where applicable, by any agency:

- Consider coordinating with current and planned education programs which address impaired drivers to include impaired pedestrians and bicyclists.
- Consider time of day and year (location of sunset and sunrise) in analysis as some crashes may have visibility or environmental issues that are more a contributing circumstance than the built environment.
- Look for common behaviors that could be improved through education programs.
- Look for crash types that could be addressed through updates to design guidance. (see Strategy 1B)
- Consider accuracy and ease of crash reporting and if it can be improved to yield better data.

RESOURCES:

- MDT Statewide Crash Database
- State and Local Citation and Violation Data
- National Highway Traffic Safety Administration (NHTSA) Countermeasures that Work
- FHWA Office of Safety Proven Safety Countermeasures
- MDT Comprehensive Highway Safety Plan
- Local Community Transportation Safety Plans

Goal 2: Educate, encourage, and promote safe and responsible travel practices of motorists, pedestrians, and bicyclists.

Photo Credit: Robert Peccia and Associates

Strategy 2A: *Explore cost-effective mechanisms to improve the quality of data on pedestrian and bicycle activity and travel behavior.*

PURPOSE:

A lack of data regarding pedestrian and bicycle activity is a common issue when scoping a project and understanding existing trends in travel. Travel surveys and non-motorized count programs can, over time, fill this data gap and provide agencies with greater tools to both understand use and to aid in planning and decision making.

Technology is continuing to improve and is helping to make automated counting technology more affordable and easier to implement. Manual counts should only be collected as a last resort if automated sources of counting are not feasible. Manual counts are more labor intensive and may be more impacted by external factors such as weather and other short-term influences. Longer term automated counters allow better insight into actual use and short-term spikes or depressions in use can be separated from longer duration averages. Comprehensive count data can help inform all stages of a proposed project from planning to design and safety analysis.

ROLES AND RESPONSIBILITIES:

Data collection at all levels is important to support transportation decision making. Non-motorized travel surveys and count programs can be implemented at the state, MPO, or community level. The following ideas can be employed, when applicable, by any agency considering improvements to data quality and availability:

- Encourage statewide, MPO, or community level travel surveys and standardized non-motorized data collection programs to gauge local transportation habits and establish trends over time.
- Require traffic studies to collect data on pedestrians and bicyclists during scheduled vehicle counts.
- Explore use and/or activation of software in traffic signals that can count pedestrians and bicyclists.
- Expand existing traffic count databases to include data on pedestrian and bicycle activity as data becomes more available.
- Establish local count programs that can be undertaken, ideally, with permanent or movable automated counters.

RESOURCES:

- NCHRP Report 797: Guidebook on Pedestrian and Bicycle Volume Data Collection
- FHWA Traffic Monitoring Guide – Chapter 4: Traffic Monitoring for Non-Motorized Traffic
- FHWA Exploring Pedestrian Counting Procedures
- MDT Traffic Data Collection Section
- Pedestrian and Bicycle Information Center

Strategy 2B: *Improve and increase safety education and encouragement program efforts for pedestrians, bicyclists, and motorists.*

PURPOSE:

Safety education and encouragement programs encompass a wide-ranging toolbox of initiatives aimed at increasing safety and participation of people walking and bicycling. Implementation of these programs helps ensure safe and lawful interactions between motorists and non-motorists. Programs should be periodically reviewed for effectiveness and enhanced or replaced over time to continue to support safety education and encourage more pedestrian and bicycle activity.

RESOURCES:

- Pedestrian and Bicycle Information Center
- National Center for Safe Routes to School
- USDOT – Encourage and Promote Safe Bicycling and Walking
- FHWA Pedestrian and Bicycle Education and Outreach
- MDT Bicycles and Pedestrians in Montana

ROLES AND RESPONSIBILITIES:

State and local agencies, stakeholders, and the public all play a role in the existing assortment of educational and encouragement programs available throughout the state. The following ideas can be employed, where applicable, by any agency:

- Consider prioritizing pedestrian and bicycle education and encouragement.
- Focus safety education on crash contributing factor analysis such as being seen at night, operating safely in intersections, among others. (See Strategy 1F)
- Include pedestrian and bicycle safety in roadway education media campaigns.
- Support promotion of children's education and safety training as part of elementary school curriculum.
- Coordinate education and encouragement campaigns among agencies to focus on underserved and disadvantaged Montana communities.
- Enhance state driving test to include improved pedestrian and bicycle education in driver training.
- Provide information on parallel alternative route choice on low volume/low speed roadways.
- Support enforcement of pedestrian and bicycle traffic laws for all roadway users.
- Share information with the public and appropriate agencies on various safety improvements, new technologies, and changes in traffic control methods.
- Consider support for requirements to retest drivers for license renewals at regular intervals to stay up to date on current laws and regulations.
- Consider providing traffic diversion programs for people cited for traffic violations as opportunities for education.

Strategy 2C: *Provide ongoing training programs for transportation engineers and planners focused on pedestrian and bicyclist needs and accommodations.*

PURPOSE:

There are a variety of resources available for planning, design, and development of pedestrian and bicycle facilities. Some of the most commonly used resources are published by AASHTO, FHWA, NACTO, TRB, ITE, and the USAB. The MDT Road Design Manual includes provisions for design and construction of non-motorized facilities, and some local municipalities have developed their own guidance for their respective communities. However, design and planning guidance are constantly changing, especially as walking and bicycling become more common transportation modes and new treatments are proposed, studied, and approved. Staying up to date with current practices and emerging technologies can help promote safer and more frequent pedestrian and bicycle travel.

ROLES AND RESPONSIBILITIES:

Successfully planning and designing for safe facilities for walking and bicycling is something that must occur in all jurisdictions. The following ideas can be employed, where applicable, by any agency:

- Encourage local agencies or partner organizations to host webinars and invite area design professionals and other interested parties to attend.
- Host official trainings such as NHI courses and explore other types of training that may be less expensive to conduct.
- Encourage engineers and design professionals to seek continuing education in pedestrian and bicycle facility design.
- Make resources such as webinars and published materials available on a variety of topics related to pedestrian and bicycle facility design and safety.

RESOURCES:

- AASHTO Joint Technical Committee on Non-Motorized Transportation
- Montana Statewide Bicycle and Pedestrian Coordinator
- Local Bicycle and Pedestrian Coordinators
- Association of Pedestrian and Bicycle Professionals – Webinar Series
- Pedestrian & Bicycle Information Center – Webinars
- FHWA Safety Office – Webinar Information
- National Highway Institute (NHI)

Goal 3: Preserve and maintain pedestrian and bicycle transportation facilities.

Photo Credit: Robert Peccia and Associates

Strategy 3A: *Develop a consistent approach for preservation and maintenance of pedestrian and bicycle facilities.*

PURPOSE:

Montana's transportation system is extensive and is owned and maintained by multiple entities. There are a variety of activities that are essential for preservation and maintenance of pedestrian and bicycle facilities including snow removal, striping, sweeping, repairs, and pavement preservation. Although the varied jurisdictions may help distribute the funding responsibilities, gaps or inconsistencies in facility maintenance may result. As with users of other modes, users of walking and bicycling facilities desire a seamless system with high-quality facilities, regardless of ownership. Many communities, as well as the state, have established schedules for completing routine maintenance activities which help to ensure facilities are properly maintained in an efficient manner. In general, there is a common desire for a consistent approach by both the public and local jurisdictions to preserve and maintain the pedestrian and bicycle system.

RESOURCES:

- FHWA Course on Bicycle and Pedestrian Transportation: Bicycle Facility Maintenance
- FHWA A Guide for Maintaining Pedestrian Facilities for Enhanced Safety

ROLES AND RESPONSIBILITIES:

Preservation and maintenance responsibilities for pedestrian and bicycle facilities affect a number of parties depending on facility type and location. Responsibility for on-street facilities generally lies with the jurisdiction that maintains the roadway. For trails and some separated shared use paths, responsibility may fall to local Parks and Recreation Departments. Some sidewalk maintenance, such as snow removal, may be the responsibility of the property owner. Coordination among entities is critical to establish and share best practices. The following ideas can be employed as appropriate by all agencies that have preservation and maintenance responsibility:

<u>Routine Maintenance:</u>

- Sweep shoulders and bike lanes in urban areas first in the spring.
- Sweep sidewalks and shared use paths that collect debris over the winter.
- Consider sweeping of shoulders on roadways when special bicycling events are planned in the area, as feasible.
- Plow bike lanes and shoulders as part of overall plowing operations.
- Enforce local sidewalk snow removal by property owners.
- Restripe bike lanes and shoulders in coordination with existing striping activities.

<u>Capital Maintenance:</u>

- Crack seal/slurry seal asphalt shared use paths in a timely fashion to prolong surface life and reduce rehabilitation or reconstruction expenses.
- Inspect and perform spot repairs where safety issues arise.
- Resurface the full width of roadway rather than leaving a pavement seam in the shoulder.

Strategy 3B: *Explore innovative viable funding alternatives for maintenance of pedestrian and bicycle facilities.*

PURPOSE:

While miles of pedestrian and bicycle facilities have grown in recent years, both as part of roadway projects and as standalone projects, funding for maintenance and preservation of these facilities has decreased or remained mostly stagnant. This results in increasing gaps between needs and available funding. Over time, deferred pavement preservation and other maintenance of pedestrian and bicycle facilities competes with capital projects for scarce local dollars. Many jurisdictions have trouble meeting their maintenance obligations due to lack of funding, limited personnel, and insufficient equipment.

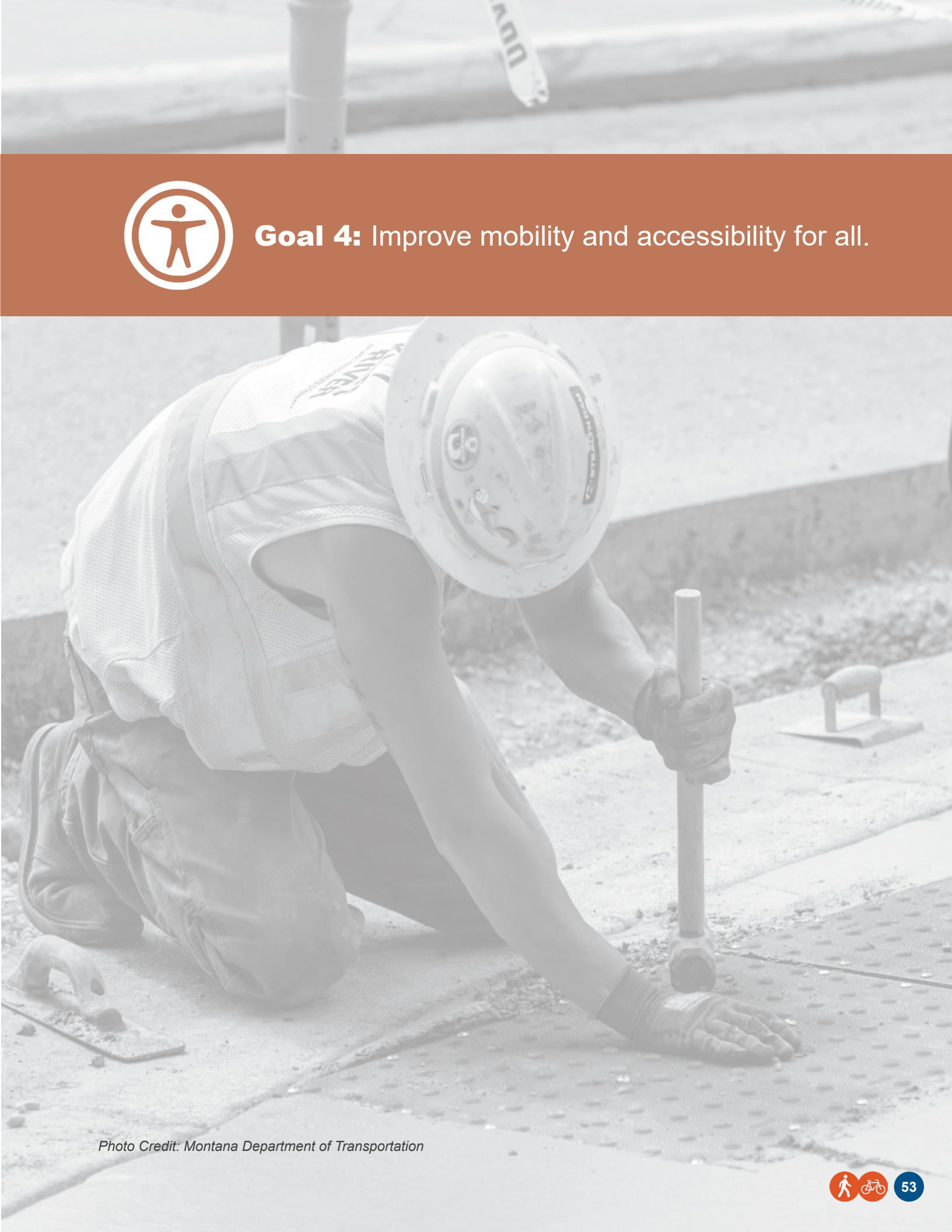
ROLES AND RESPONSIBILITIES:

Funding for pedestrian and bicycle facility maintenance activities can come from a number of sources, including private, local, state, and federal. All parties (governmental and private) can play a role in applying for grants and securing funding from non-traditional sources. The following ideas can be employed as appropriate by agencies that maintain pedestrian and bicycle facilities:

- Review annual budgets and explore mechanisms for creating dedicated annual funding for various types of maintenance.
- Design and construct pedestrian and bicycle facilities to minimize long-term maintenance including locating them outside snow plow debris zones and constructing shared use paths using durable materials.
- Pursue crowd-sourced programs to provide some services such as “adopt a trail” programs.
- Pursue funding from the TA Program maintenance set-aside for pavement preservation maintenance projects.
- Consider partnerships to create maintenance endowments which can provide sustainable annual funding dedicated towards maintenance.
- Explore the use of alternative funding mechanisms such as impact fees, improvement districts, tax increment financing, or others.

RESOURCES:

- FHWA Course on Bicycle and Pedestrian Transportation: Bicycle Facility Maintenance
- FHWA A Guide for Maintaining Pedestrian Facilities for Enhanced Safety
- Local Maintenance Plans



Goal 4: Improve mobility and accessibility for all.

Photo Credit: Montana Department of Transportation

Strategy 4A: *Improve accessibility and mobility using current design guidance and modern technology when building, upgrading, and retrofitting pedestrian and bicycle facilities.*

PURPOSE:

Under Title II of the ADA, state and local governments must ensure all 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, refuge island crossings, and pedestrian-activated signal systems. In 2011, the USAB published Proposed Guidelines for Pedestrian Facilities in the Public Right of Way. MDT has since adopted PROWAG as an applicable standard which addresses accessibility for the vision-impaired and pedestrians who use mobility devices at street crossings, access to transportation, and constraints posed by roadway design practices, slope, and terrain.

Design guidance at all levels has evolved rapidly in recent years and may not be a natural part of the roadway design process. Flexible design that achieves safe and inclusive roadways may require additional training of design staff, support from local agencies and MDT, and endorsement of outside design guidance from traditional sources.

RESOURCES:

- PROWAG
- ADAAG
- MUTCD
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
- AASHTO Guide for the Development of Bicycle Facilities
- AASHTO Policy on Geometric Design of Highways and Streets
- State and Local ADA Transition Plans
- MDT Road Design Manual
- FHWA Context Sensitive Design/Context Sensitive Solutions

ROLES AND RESPONSIBILITIES:

All public entities must follow ADA requirements. Additionally, MDT has adopted the draft PROWAG. The following ideas can be employed as appropriate by all agencies:

- Continue implementation of ADA transition plans.
- Integrate PROWAG into all appropriate roadway projects so that when adopted, projects will not be in need of retrofit.
- Promote use perpendicular curb ramps over diagonal ramps, where appropriate.
- Provide and/or expand training for engineering staff on universal design principles. (see Strategy 2C)
- Adopt the AASHTO Guide for the Development of Pedestrian and Bicycle Facilities as official design resources.
- Update design guidelines frequently as new resources and guidance becomes available.
- Maintain a comprehensive list of approved design resources from organizations such as AASHTO, TRB, ITE, NCHRP, NACTO, and others.
- Provide non-motorized transportation technical assistance to communities in need.
- Provide appropriate work zone access for pedestrians and bicyclists.

Strategy 4B: *Provide safe access to schools and areas with significant senior, minority, and low-income populations.*

PURPOSE:

Walking and bicycling are important mobility opportunities for the state's vulnerable populations who are frequently transportation disadvantaged such as seniors, minority, and low-income individuals and families. In Montana, minority populations make up 8.4 percent of the population. Poverty, race, and ethnicity are often correlated, with over 35 percent of Montanans who identify as American Indian or Alaska Native living in poverty. Households in lower income brackets tend to rely more on non-motorized transportation. Providing pedestrian and bicycle facilities in communities where these populations are prevalent helps ensure mobility and promotes transportation equity for all Montanans.

ROLES AND RESPONSIBILITIES:

Transportation to schools is not typically part of the school siting process, and it may not be thoroughly assessed in local transportation planning. Local and state agencies and schools need to consider the transportation needs of the underserved populations. The following ideas can be employed as appropriate by all agencies:

- Consider proximity of nearby schools, senior centers, low income populations, and disabled populations in project development and plan and design facilities accordingly.
- Solicit public comment by disabled stakeholders, school administration, parents, and others in project development.
- Consider creating a process by which the public can report access difficulties and notify the appropriate local agency.
- Consider developing an annual budget to execute adjustments to pedestrian signal timing, fill small sections of missing sidewalk, or add isolated curb ramps.
- Work with local schools and stakeholders on grants that can subsidize SRTS and other type improvements such as the TA program.

RESOURCES:

- Office of Public Instruction
- National Center for Safe Routes to School
- Safe Routes to School National Partnership
- Local SRTS Programs
- Local LRTPs
- Local Complete Streets Policies
- US Government Accountability Office: Transportation-Disadvantaged Populations: Federal Coordination Efforts Could Be Further Strengthened
- FHWA Context Sensitive Design/Context Sensitive Solutions

Goal 5: Support walking and bicycling as important transportation modes for access to destinations, economic vitality, and health.

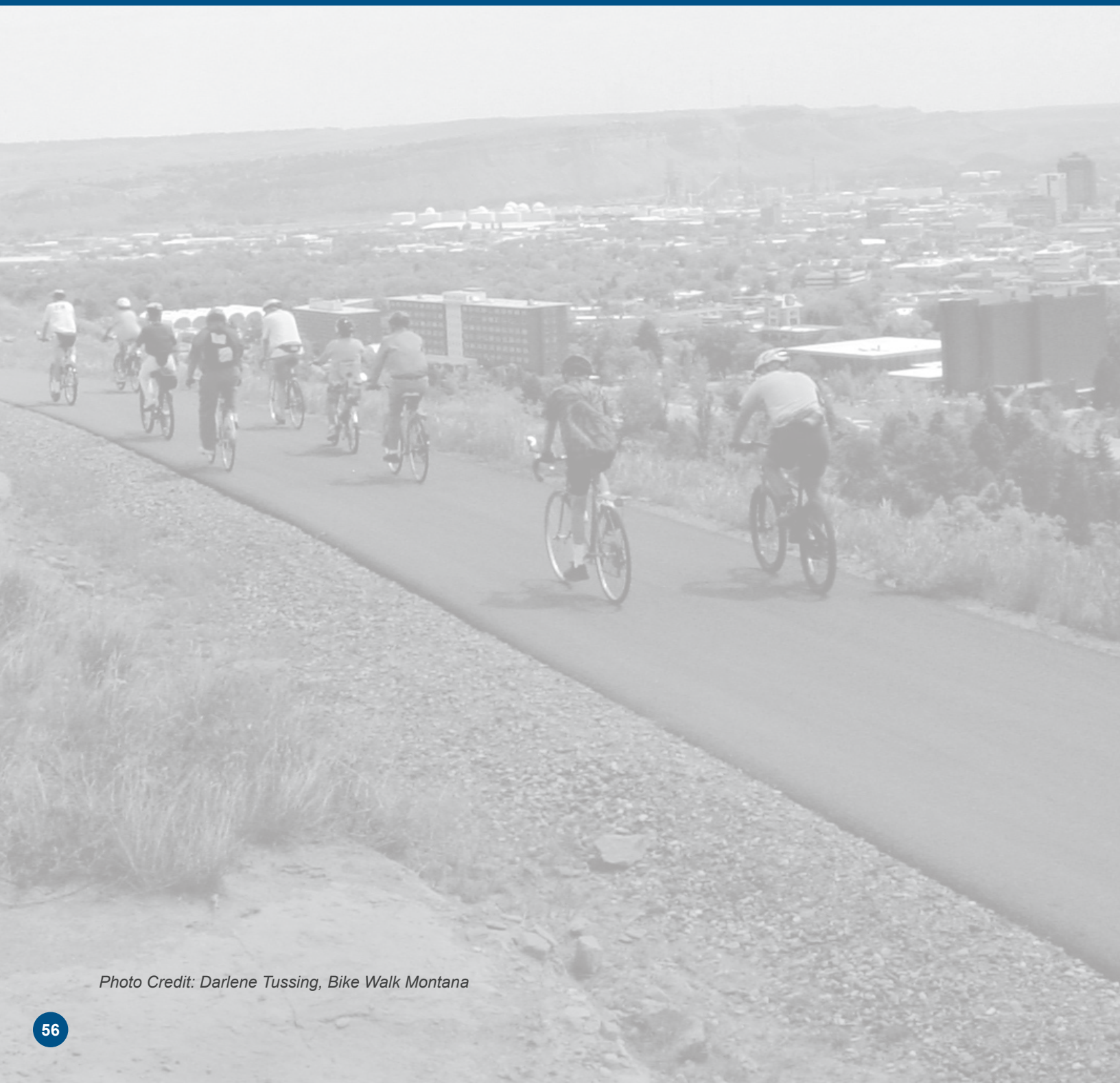


Photo Credit: Darlene Tussing, Bike Walk Montana

Strategy 5A: *Improve community health and economic vitality by promoting walking and bicycling.*

PURPOSE:

Despite being one of the nation's most active states, Montanans have grown substantially more obese in recent years. From 1990 to 2017, the percent of Montanans who are obese has risen from 8 percent to over 25 percent. There is growing awareness of the acute link between the built environment and community health. Communities without attractive and safe facilities to walk and bicycle limit access to physical activity and, as a result, tend to exhibit higher rates of obesity and other non-activity related illnesses. Good walking and bicycling facilities that are attractive, provide access to parks, trails, and other recreational amenities are a key component of healthy communities. These networks provide close-to-home opportunities for physical activity. Education and encouragement programs can also help promote walking and bicycling as healthy modes of transportation.

There are many benefits from walking and bicycling at the individual, household, and community levels. Benefits include increased physical activity, reduced healthcare costs, lower transportation costs for households, and improved air quality. As more people walk and bike, the benefits increase as well. Targeting non-motorized improvements to areas with a high potential for walking and bicycling trips, or those areas likely to have shorter trip lengths, can help to leverage these benefits.

RESOURCES:

- DPHHS Montana Nutrition and Physical Activity Program
- Montana Rural Health Initiative
- Complete Streets Programs
- SRTS Programs
- MUTCD
- MDOC
- Tax Increment Financing
- FHWA Context Sensitive Design/Context Sensitive Solutions

ROLES AND RESPONSIBILITIES:

Access to schools, parks, and recreational destinations should be a key component of local transportation planning efforts. The following ideas can be employed by agencies as applicable:

- Support health agencies in promoting walking and bicycling as part of a healthy lifestyle for children and adults.
- Require sidewalks and parks be constructed with new developments in both cities and counties.
- Connect parks and open spaces in communities with pedestrian, bicycle, and trail networks.
- Support and promote local and regional trail system destinations.
- Ensure schools have adequate safe routes that serve the surrounding neighborhoods.
- Adopt local pedestrian, bicycle, and trail wayfinding programs.
- Consider adopting policies and procedures that support mobility for all users.
- Reduce sprawl and promote compact development.

Strategy 5B: *Explore innovative viable funding alternatives for pedestrian and bicycle transportation.*

PURPOSE:

Funding has historically been, and is likely to continue to be, a challenge for developing and maintaining walking and bicycling facilities, developing and delivering new programs, and employing education and encouragement efforts. No agency alone has sufficient funding or resources to implement and maintain transportation networks to the levels desired. Successful communities have found that leveraging a variety of funding sources and creating partnerships is the most effective in providing for non-motorized transportation.

ROLES AND RESPONSIBILITIES:

Each community has a different mixture of staff capacity, local interest, partnering organizations, and needs. As such, no single model of funding is applicable to every community. MDT's Bicycle and Pedestrian Coordinator is a resource for information on federal funding and technical support. The following ideas may be employed by MDT and local agencies as appropriate:

- Pursue new funding opportunities for non-motorized projects, programs, and maintenance. These opportunities can take a variety of forms from transportation districts, bonds, improvement districts, or general fund set asides.
- Continue to make 100 percent of TA funding available for eligible activities and avoid transferring funds to other programs.
- Ensure pedestrians and bicyclists are considered in all roadway reconstruction, rehabilitation, and new construction projects.
- Consider creating local, dedicated funding sources for implementation of non-motorized projects within local jurisdictions.

RESOURCES:

- Pedestrian and Bicycle Information Center: Funding
- FHWA Pedestrian and Bicycle Funding Opportunities
- MDT Bicycle & Pedestrian Coordinator

Strategy 5C: *Support access to recreational, historic, cultural, downtown, and scenic destinations for improved tourism and economic vitality.*

PURPOSE:

Montana has a diverse assortment of recreational, historic, cultural, downtown, and scenic destinations available to visitors and residents alike. Often these destinations are places where people may be more motivated to walk and bike. Access within and to these types of destinations often creates opportunities for partnerships with various federal, local, and state agencies and organizations and eligibility for some unique funding sources.

ROLES AND RESPONSIBILITIES:

Destinations that attract walking and bicycling activity occur on some form of public land and connections to these areas may cross multiple jurisdictions and agencies. The following ideas can be employed as appropriate by all agencies:

- Study feasibility of dedicated facilities that can serve pedestrian and bicycle traffic to destinations in reasonable proximity to a local community.
- Pursue treatments for roadways that provide access to recreational destinations. (See Strategy 1C)
- Explore funding sources such as FHWA FLAP if connecting local communities to national forest or other federal lands.

RESOURCES:

- MDT Bicycling the Big Sky Map
- MDOC
- MDT Bicycle Touring – Bicycling Montana's Highways
- Montana's Statewide Comprehensive Outdoor Recreation Plan
- Small Town and Rural Multimodal Networks Planning and Design Guide
- FHWA Federal Lands Access Program (FLAP)

Strategy 5D: *Evaluate criteria that ensures safety and meets relevant guidelines for bicycle route identification.*

PURPOSE:

Multiple organizations and agencies share an interest in the identification of bicycle routes for local use and long-distance travel. Pedestrian and bicycle transportation needs vary across the state and have different contexts, preferences, and stakeholders. Many highways, for example, have wide shoulders for bicycle use while others may have narrow or nonexistent shoulders combined with high vehicular travel speeds, high volumes, and/or the presence of heavy vehicles. Some of the most popular highways in the state for bicyclists are the least compatible and least suitable from a design perspective. At the local level, some roadways may be more suited for bicycle travel depending on available facilities, vehicle speeds and volumes, and anticipated user types. These factors should all be considered when identifying preferred bicycle routes.

ROLES AND RESPONSIBILITIES:

Bicycle routes may contain sections of state, county, and local roadways as well as off-highway elements. The following ideas can be employed by all agencies as appropriate:

- Use AASHTO guidance to define criteria that qualify a route for designation as a bike route.
- Work across jurisdictions to determine safest routing for proposed bike routes.
- Coordinate existing and future bicycle usage into future versions of MDT's Route Segment Plan.
- Study and inventory options for long distance bicycle touring.

RESOURCES:

- AASHTO – US Bicycle Routes
- MDT Route Segment Plan

Strategy 5E: *Improve administrative efficiency, consistency, and coordination for pedestrian and bicycle transportation.*

PURPOSE:

Across the state, communities deal with a variety of challenges in supporting walking and bicycling. Pedestrian and bicycle projects have different contexts, stakeholders, sophistication of design professionals, and needs depending on the community. Additional challenges with consistency and coordination occur when projects cross or are near jurisdictional boundaries. Coordination between appropriate jurisdictions and departments is needed to ensure a consistent approach to providing for walking and bicycling.

RESOURCES:

- Local LRTPs and Growth Policies
- MDT Statewide Transportation Improvement Program
- State and Local Bicycle and Pedestrian Coordinators
- MDOC
- Montana DPHHS

ROLES AND RESPONSIBILITIES:

This strategy is aimed at improving the efficiency, consistency, and coordination between decision makers, such as planning departments, engineers, and elected officials. All entities have a role in ensuring an efficient and consistent approach to considering walking and bicycling modes. The public can assist in this effort by sharing local concerns and providing suggestions to local governments regarding improvements that are important to the community. The following ideas can be employed by state and local decision makers as appropriate:

- Review project scoping process to ensure it accurately accounts for potential pedestrian and bicycle facilities (identify facilities in local plans, review nearby destinations and origins for non-motorized travel, and consider public feedback).
- Ensure local transportation plans capture the needs and vision of local the community.
- Consider local transportation plans when developing non-motorized projects.
- Consider revising development standards and land use decision making criteria to accommodate local pedestrian and bicycle needs.
- Work to improve consistency and coordination among state and local agencies regarding maintenance.
- Ensure all affected jurisdictions are consulted during development of long range transportation plans and other relevant planning documents.

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PEDESTRIAN & BICYCLE PLAN

Photo Credit: Montana Department of Transportation

07

7.0. Implementation and Next Steps

The *Montana Pedestrian and Bicycle Plan* lays out an ambitious vision and goals for the future of walking and bicycling in Montana. A series of strategies are recommended to support the identified goals. While these strategies may appear to be presented individually, many are interconnected and will benefit from coordination between a variety of organizations and all levels of government. This section provides a summary of the recommended strategies and key considerations for successful implementation.

No single source of funding will be sufficient to fulfill the strategies in this Plan, nor can a single entity successfully carry out all recommended strategies.

7.1. Summary of Recommended Strategies

Goal 1: ***Reduce pedestrian and bicyclist fatalities and serious injuries in support of Vision Zero.***

Strategy 1A: Improve safety at intersections through applicable design standards and new technologies.

Strategy 1B: Periodically review and update design guidance for pedestrian and bicycle facilities.

Strategy 1C: Improve safety on rural roadways through widened shoulders.

Strategy 1D: Collaborate across jurisdictions to support changes to traffic laws aimed at improving the safety and predictability of walking and bicycling.

Strategy 1E: Develop and implement non-motorized crossing treatment guidelines.

Strategy 1F: Analyze pedestrian and bicycle crashes and contributing factors to identify potential safety improvements.

Goal 2: ***Educate, encourage, and promote safe and responsible travel practices of motorists, pedestrians, and bicyclists.***

Strategy 2A: Explore cost-effective mechanisms to improve the quality of data on pedestrian and bicycle activity and travel behavior.

Strategy 2B: Improve and increase safety education and encouragement programs for pedestrians, bicyclists, and motorists.

Strategy 2C: Provide ongoing training programs for transportation engineers and planners focused on pedestrian and bicyclist needs and accommodations.

Goal 3: ***Preserve and maintain pedestrian and bicycle transportation system.***

Strategy 3A: Develop a consistent approach for preservation and maintenance of pedestrian and bicycle facilities.

Strategy 3B: Explore innovative viable funding alternatives for maintenance of pedestrian and bicycle facilities.

Goal 4: ***Improve mobility and accessibility for all.***

Strategy 4A: Improve accessibility and mobility using current design guidance and modern technology when building, upgrading, and retrofitting pedestrian and bicycle facilities.

Strategy 4B: Provide safe access to schools and areas with significant senior, minority and low-income populations.

Goal 5: ***Support walking and bicycling as important transportation modes for access to destinations, economic vitality, and health.***

Strategy 5A: Improve community health and economic vitality by promoting walking and bicycling.

Strategy 5B: Explore innovative viable funding alternatives for pedestrian and bicycle transportation.

Strategy 5C: Support access to recreational, historic, cultural, downtown, and scenic destinations for improved tourism and economic vitality.

Strategy 5D: Evaluate criteria that ensures safety and meets relevant guidelines for bicycle route identification.

Strategy 5E: Improve administrative efficiency, consistency, and coordination for pedestrian and bicycle transportation.

7.2. Implementation

It will take time, commitment, and multiple jurisdictions and stakeholders to implement the recommended strategies. Investment in safety, new infrastructure, improved maintenance of non-motorized facilities, and development of programs that educate and encourage residents to walk or bike are necessary to improve the state of walking and bicycling in Montana. No single source of funding will be sufficient to fulfill the strategies in this Plan, nor can a single entity successfully carry out all recommended strategies.

Federal, state, county, city, and tribal government agencies, as well as stakeholders and the public, all play an important role in achieving a pedestrian- and bicycle- friendly Montana. Many different agencies may be involved in any number of phases of pedestrian and bicycle improvements including project development, funding, implementation, maintenance, or education. Input from the public and stakeholders helps to identify the needs of communities. Depending on the needs of the community, funding assistance, design support, or general guidance may be needed from state and other agencies. Cooperation and coordination between all agencies to ensure consistency of educational information, design, and maintenance is crucial to successful implementation.

7.2.1. Funding and Resources

The state of funding and resources available is constantly changing. Changes can occur due to the passage of a new federal transportation bill, or at the local level where projects may be creatively funded through evolving sources, which may include voter approved initiatives. What is clear is that in order to make Montana and its communities more pedestrian- and bicycle- friendly, it will be necessary to invest in new infrastructure, improved maintenance, and programs that educate and encourage users. Unfortunately, current funding levels are unable to keep pace with identified needs. The lack of adequate funding requires state and local governments to make decisions about how best to focus their resources.

Given constrained resources, it can be challenging to find a solution which accommodates the needs of all transportation users and the public at large. Consultation and coordination among agencies, local jurisdictions, stakeholders, and the public is conducted to help identify needs and determine the best solutions within the confines of the project. Using state and local transportation planning processes to establish goals and identify projects can be an effective way of managing limited funds to provide a transportation system that benefits all users to the greatest extent possible.

Many government agencies, stakeholders, and the public play an important role in making a pedestrian- and bicycle- friendly Montana.

7.3. Additional Considerations

There are a number of additional considerations that MDT, other agencies, and organizations can take to improve walking and bicycling in Montana. While there is no single formula to successful implementation, the following can apply to the majority of the ideas and may serve as a starting point, or a philosophy, to aid in success.

IDENTIFY ISSUES

It is important to frequently evaluate the built environment from the perspective of pedestrian and bicycle safety. Small fixes can often be addressed on a case-by-case basis. More substantial projects or retrofits will likely require the project to be identified and pursued as part of a more formal process. Most Montana communities have a local or regional transportation planning process that identifies these types of projects and, through the plan, positions them for implementation funding. Many projects will need the coordination of multiple stakeholders like MDT, especially if the project is on a Federal Aid route or will require federal funding to implement.

AVOID MISSED OPPORTUNITIES

Capital projects represent significant investments in infrastructure. If those investments don't accommodate travel by walking or bicycling, they may result in missed opportunities or costly retrofits. As major infrastructure investments may stand for upwards of 50 years before reconstruction, the opportunity cost of failing to anticipate the needed elements is high. Safe accommodation for pedestrians and bicyclists should be assumed components of any roadway construction project. Knowledge and adherence to the latest design guidelines and practices are also critical.

USE THE RIGHT ASSUMPTIONS

Having good data that can inform the design of a project or the need for pedestrian and bicycle facilities is critical to ensuring that resources are efficiently spent and that user needs are being met. Improving the quantity and quality of data can assist transportation planners, designers and elected officials in making good decisions.

PROMOTE NON-MOTORIZED TRANSPORTATION

Good information on walking and bicycling and a good way to distribute the information can positively influence travel behavior. In many cases information may need to come from multiple sources to be adequately understood. Partnerships between agencies and organizations can ensure a consistent message is shared.

EDUCATION MATTERS

Education plays a central role in all aspects of improving safety and understanding the needs of pedestrian and bicycle modes. This applies most directly to improving the safety behavior of motorists, pedestrians, and bicyclists, but it also pertains to conveying the benefits of investing in walking and bicycling to the public and a wide variety of stakeholders, as well as educating local design staff who influence built infrastructure.

PRIORITIZATION

With limited funding, all agencies must make decisions about how best to focus their resources. Successfully completing an assortment of smaller safety and efficiency projects may be more beneficial to the non-motorized network than focusing a larger amount of resources on one larger project. Prioritizing local funding sources for the purposes of pedestrian and bicycle improvements also influences the quality and scope of the local network.

IMPACTS

Construction of non-motorized facilities is subject to applicable design and implementation regulations and requirements. Projects should consider all impacts the project may have on the environment and the community prior to implementation. In order to realize the maximum benefit from new infrastructure, projects should also be resilient to extreme weather events and natural disasters as appropriate.

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