City of Milbank
Master Trail Plan (2023)

ACKNOWLEDGEMENTS

Master Trail Plan Committee

Dan Keyes
Heidi Wellnitz
Rhonda Preller
Mindy Rogers
Eric Pulling
Ryan Waterfall
Corey Hooth
Susan Karels

Milbank Parks and Recreation Board

Jody Bear
Luis Jimenez
Brian Pauli
Brian Sandvig
Rondi Scoular
Eric Pulling
Heidi Wellnitz
Steve Wenzl
Matt Wilson

City Council

Pat Raffety, Mayor
John Weyh, Councilman
Roger Briggs, Councilman
Mindy Rogers, Councilwoman
Craig Weinberg, Councilman
Michael Hanson,Councilman
Josh Karels, Councilman

The City of Milbank Master Trail Plan (2023) was prepared with assistance from the First District Association of Local Governments

Todd A. Kays, Executive Director

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF MAPS

Executive Summary

Introduction

Milbank has determined that the development of a trail system is important for a myriad of reasons. First, trails are an essential part of the urban pattern. The role that trails play is becoming increasingly important as the City of Milbank expands its recreational activities and explores alternative forms of transportation. Second, trails have the ability to enhance the quality of life by promoting healthy lifestyles through recreational exercise and educational opportunities for all that wish to utilize them. Also, trails have a tremendous potential to connect the City's population to the natural open space areas surrounding the City, recreational activities, schools, places of employment, shopping and other community points of interest.

When developing a trail system, initially, the needs of the community must be identified. The trail system has to have meaning that will produce a desire for those individuals to use it. Further, it is necessary to consider the potential development costs and long-term maintenance of the trail system.

This Master Trail Plan (Plan) was prepared during 2023 under the direction of a broad-based committee of citizens. The Master Trail Planning Committee met six times over the course of the year to review materials prepared by the First District Association of Local Governments.

In developing the Plan, it was determined that for the implementation of the trail system to be successful, it was necessary to acquire community input. Community engagement activities included an “Open House” and online survey.

The overall purpose of this plan is to foster the provision of bicycle and pedestrian facilities throughout the City of Milbank for use by pedestrians of all ages and bicyclists of all experience levels. To create such a trail system, it was necessary to investigate a number of facility types such as bicycle lanes, multi-use trails, sidewalk trails and pedestrian sidewalks in order to provide necessary connections to activity centers while providing safe and convenient access to all that wish to use the system.

Goals

At the onset of this project, the Master Trail Plan Committee members participated in a strategic planning session which had the purpose of addressing three specific questions.

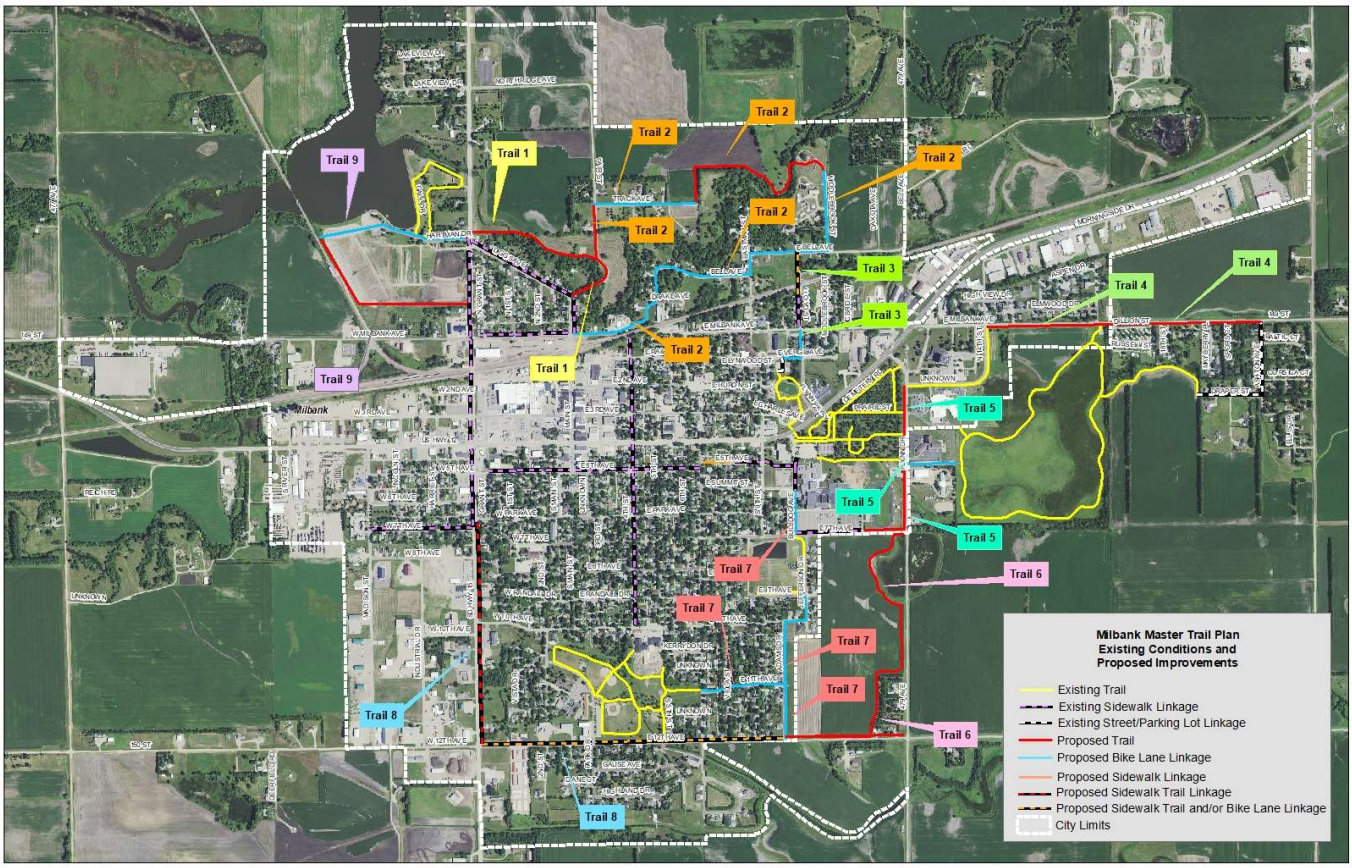
1. Why is the development of a trail network important?
2. What is it that you hope the expert trail plan will accomplish?
3. What are the significant issues associated with the development of a trail network?

The result of the discussion regarding the above questions led to the development of the following goals and objectives which have guided this planning effort.

Goal Statement #1: To preserve, enhance and expand upon the City’s existing pedestrian and trail network:
Goal Statemen #2: Develop a pedestrian and trail network that has broad based support and the ability to be implemented
Goal Statement #3: Promote pedestrian and bicycle safety and security
Goal Statemen #4: Provide necessary trail maintenance

Proposed Trails

The committee developed an overview of the future trail network that to the extent possible connects the different neighborhoods and activity centers of the city. Where necessary, the route selection was generalized in order to allow some deviation when unexpected opportunities arise. The map below details the conceptual network system which is a guide to future siting and construction of multi-use trails, bike lanes, sidewalk trails, pedestrian sidewalks, etc.



Cost

The development of a trail network involves many different aspects of construction. In many ways it is very similar to the construction of a highway or a street because it involves a great deal of preparatory work as well as the actual laying of the surface. Along the proposed route of the bicycle trail, there are obstacles in terrain and physical features that must be dealt with, such as drainage ditches, culverts and low soft areas. Project cost estimates include design/engineering (15%), construction, 20% contingency and 25% miscellaneous. The cost estimates provided below represent planning-level project cost estimates. They are intended to provide the City with an "order of magnitude" estimate for the project costs so the projects can be prioritized, and next steps can be taken (including additional study, soliciting funding, preliminary and final design, etc.). It should be noted that cost estimates do not include land acquisition, signalization and support facilities or amenities such as – signage, lighting, rest areas, etc. Further detailed costing will need to be performed during the funding, project development, and design phases.

All costs regarding multi-use trails and shoulder bikeway/bike lanes were projected utilizing an average of preliminary and actual construction costs experienced by several municipalities in northeast South Dakota in 2023. In the construction of an asphalt multi-use trail, the projected cost of constructing 10-foot wide, 6-inch-deep base course, and 3-inch asphalt overlay with associated grading was **$105** per running foot of trail. The projected cost of a 10-foot-wide multi-use trail constructed with a six-inch gravel base and six-inch layer of concrete with associated grading was **$150** per running foot. The projected cost of a standard bike lane **is $1,500 plus $0.10 per running foot**. Bike Lane stencils cost **$150** and standard crosswalk paintings average **$250** per intersection

The table below provides a breakdown of linear feet and projected cost of completing the associated segment of trail network utilizing base cost estimates described above. If the entire network would be constructed the **minimum cost**, not including amenities, signage, signalization and extra fill work would range between **$2,550,925 and $3,273,650.**

Projected Cost By Trail Network Segment

Trail Segment	Description	Linear Feet	$105/foot Asphalt Multi-use Trail	$150/foot Concrete Sidewalk Trail	Bike Lane	Crosswalk	Crossing	Stencil	Total
1	Multi-Use Trail 1 Crosswalk	2,940	$261,450	$0	$0	$250	$75,000	$0	$336,700
2	Multi-Use Trail/Bike Lane	9,910	$428,925	$0	$2,665	$1,000	$0	$1,800	$434,390
3a	Bike Lane/ Sidewalk Trail	1,830	$0	$144,000	$1,590	$750	$0	$300	$146,640
3b	Bike Lane	1,830	$0	$0	$1,690	$750	$0	$450	$2,890
4	Multi-Use Trail 5 Crosswalks	3,270	$343,350	$0	$0	$1,250	$0	$0	$344,600
5	Multi-Use Trail	2,230	$234,150	$0	$0	$1,000	$0	$0	$235,150
6	Multi-Use Trail	4,895	$513,975	$0	$0	$0	$0	$0	$513,975
7	Bike Lane 6 Crosswalks 7 Bike Stencils	3,725	$0	$0	$2,245	$1,500	$0	$1,050	$4,795
8a	Sidewalk Trail	6,660	$0	$999,000	$0	$1,000	$0	$600	$1,000,600
8b	Bike Lane & Sidewalk Trail	6,660	$0	$417,750	$2,275	$1,000	$0	$600	$421,625
9	Multi-Use Trail/Bike Lane	3,790	$254,625	$0	$1,775	$250	$0	$150	$256,800
TOTALS		**39,250**	**$2,036,475**	**$417,750 to $1,143,000**	**$8,275 to $10,650**	**$7,000**	**$75,000**	**$3,900 to $4,050**	**$2,550,925 to $3,273,650**

Prioritization

The committee members developed criteria on which to justify and rank the trail network facility improvements. These criteria were developed to identify the priorities to be set for implementation of this plan. Since the associated costs of the development of a comprehensive trail system is more than can reasonably be financed in one year, the committee members developed criteria on which to justify and rank the trail network facility improvements. These following criteria were developed to identify the priorities to be set for implementation of this plan.

1. DESIGN/LOCATION/ACCESSIBILITY

Does the proposed trail/trail linkage enhance accessibility by completing a planned loop or expanding the existing trail network?

- Gap: Does the proposed Trail/Trail linkage link fill a gap in the existing network?
- Connectivity: Does the proposed Trail/Trail linkage connect 2 or more trails?
- Destination: Does the proposed Trail/Trail linkage link to an activity center (parks, schools, church, business, etc.)?
- Land Use Conflicts: Does the proposed Trail/Trail linkage conflict with adjoining land uses?

2. SAFETY

Does the proposed Trail/Trail linkage enhance pedestrian/bicycle safety or mediate an existing safety issue?

3. AESTHETICS

Does the proposed Trail/Trail linkage provide a scenic/aesthetic recreation experience?

4. COST/FEASIBILITY

Is the proposed trail/trail linkage feasible?

- Is there public support?
- Initial construction cost?
- Long-term maintenance costs?
- Is there a need to acquire sufficient right-of-way and is it available?
- Is the location practical and will it be used to the extent to justify the cost?
- What support facilities (signage, amenities, etc.) will be required?
- Are there opportunities for matching grant funds?
- Can the project be accomplished without receiving grants or using 100% public funding?

The table below shows the prioritization of the various trail segments throughout the various stages of the development of the Master Trail Plan. It is important to note that whether it was at the beginning of the planning process (Master Trail Plan Committee Kickoff); midway through the process (Open House, Community Survey); or at the end of the process (utilizing weighted prioritization criteria), Trails 5, 6, and 7 were consistently identified as High priorities, Trail Segments 2 and 8 were consistently identified as Medium Priorities, Trail Segments 3 and 9 were consistently identified as Low Priorities and Trail Segments 1 and 4 vacillated between Low and Medium Priorities.

Trail Segment Prioritization

Priority/Most Important	Priority Level	Trail Segment Priority at Master Trail Plan Committee Kickoff	Trail Segment Priority at Community Survey	Trail Segment Priority at Open House	Trail Segment Priority by Weighted Priorities
1	High	7	7	6	7
2	High	6	6	7	6
3	High	5	5	5	5
4	Medium	8	1	8	8
5	Medium	2	2	1	4
6	Medium	4	8	2	2
7	Low	3	3	4	3
8	Low	1	4	9	1
9	Low	9	9	3	9

Implementation

In the developing areas of the community, the trail system should, to the extent possible, connect into the overall community trail system to assure a seamless network of trails throughout the community.

The following are examples of potential policies which may aid in the development of the City of Milbank's Trail Network.

- Identify and map all existing trail easements in the City. Once the trail easements are identified, develop a missing linkage map and create a plan to link all the trails.

- Create a program to identify and acquire public ownership of trail corridors and access points needed to develop an effective trail network.

- Develop and maintain a GIS-based trail map with parcel information so that the City can track existing and required easements.

- Develop and maintain a trail promotion program which includes developing trail brochures, providing information on the City's web page and providing information, at activity centers such as the City's community centers and parks, on the location of trails within the City and connections to regional trails surrounding the City.

- Work with property owners to educate and inform trail users about trail boundaries (through pamphlets, signage, etc.) in the early stages of trail development in close proximity to private property.

- Require the development of a trail network in the growth areas of the community as a condition of new subdivisions, where deemed appropriate, either as new elements in the community design standards or in lieu of the traditional sidewalk system which abuts the streets and highways.

- Ensure that trails and bike lanes are included in plans for new transportation projects.

- Develop trails, if possible, concurrently with the infrastructure of a subdivision or development it goes through.

- Coordinate the City's trail system planning, implementation and management efforts with those of regional jurisdictions and public agencies. It is recommended that the Parks and Recreation Manager continue to work with the City Administrator and other City staff in the review of commercial, industrial, and residential development plans – i.e., annexations, master plans, new subdivisions, etc. In the review of the proposed development plans City Staff should incorporate trail networks, where necessary, into all proposed developments and relate this information to the Planning Commission and the Parks and Recreation Board for their comments.

- Develop a prioritization plan for trails in the City utilizing the new trail construction priorities outlined in the Plan.

- Incorporate off-street trail rights-of-way/easement acquisition and trail development into the City's Capital Improvement Program.

- Encourage major activity centers to provide accessibility to pedestrians and bicycles including necessary storage facilities.

- Establish an "Adopt a Trail" program for ongoing trail construction, maintenance and patrol activities.

- Identify partnership opportunities with neighborhood groups, private individuals and local businesses as a means to acquire various trail amenities.

- Identify potential tax-related incentives and seek funding for other inducements for private property owners to allow and support public trails

- Apply for grants and alternative funding sources for trails.

- Budget adequate funds for trail development.

- A major opportunity for trail development may be to follow the existing and proposed storm water drainage systems into the new areas of the community. The benefits of developing a multi-use corridor include a reduced cost of right-of-way acquisition by using the same corridor for many purposes.

- The trail system should be a component evaluated as part of all major street and highway improvement projects. Trails are an eligible activity under federal highway funding and the issue of trail development and funding should be included in the discussion of operational funding.

- To the extent possible, trails will be developed concurrently with the infrastructure of a subdivision or development it goes through.

1 | Introduction

The City of Milbank has a long history of developing and successfully implementing community planning initiatives which have made this community of approximately 3,500 residents unique. Milbank has determined that the development of a trail system is important for a myriad of reasons. First, trails are an essential part of the urban pattern. The role that trails play is becoming increasingly important as the City of Milbank expands its recreational activities and explores alternative forms of transportation. Second, trails have the ability to enhance the quality of life by promoting healthy lifestyles through recreational exercise and educational opportunities for all that wish to utilize them. Also, trails have a tremendous potential to connect the City's population to the natural open space areas surrounding the City, recreational activities, schools, places of employment, shopping and other community points of interest.

This Master Trail Plan (Plan) is intended to be an easy-to-understand document that provides a clear roadmap for the steady implementation of a variety of trail types such as bicycle lanes, multi-use trails, sidewalk trails and pedestrian sidewalk linkages, throughout the city. The Plan will be used in fostering and guiding the creation of a citywide trail network. It is intended to provide guidance for the location and construction of trails in the City. Further, the Plan is intended to improve the operation, design and utilization of the City's trail system, allowing equal and safe use for pedestrians and bicyclists.

The Plan will identify existing trails and alignments for future trails which will guide land use and site planning. The Plan is intended to complement the City of Milbank Comprehensive Land Use Plan, Grant County Comprehensive Land Use Plan, and various other land use, corridor, and transportation plans that have been prepared for specific parts of the City. Once adopted by the Milbank Parks and Recreation Board and the Milbank City Council, the Plan will provide the vision and policy guidance for the City's trail planning efforts. Proposed trail alignments shown in the Plan are conceptual in nature and are for planning purposes only. The trail alignments are shown at a corridor level which means the trail will be located anywhere within approximately fifty (50) feet of the location shown on Map 3. The final trail alignments are subject to further analysis of geologic, topographic, environmental, hydrology, property ownership, and other factors.

To assist in understanding the types of trails recommended, various graphics are included which clearly outline the preferred trail types and locations the city is seeking to realize. In addition, conceptual cost estimates have also been provided to assist in understanding the funding required for trailway construction and maintenance, along with a section on various implementation strategies that can help turn the Plan into reality.

Therefore, to further enhance the quality of life of the residents of the community and to promote economic development, the city has prepared this Plan which will provide a blueprint for the development of community trails over the next ten years. The Plan will accommodate a broad variety of interests and abilities, from biking, jogging, or simply walking and will further establish a trail network that serves all residents of the community. Finally, the development of this Plan will also position the City of Milbank to better plan for and seek funding for trail implementation throughout the city that aligns with the following vision statement.

Vision Statement:
The City of Milbank will provide the community with the necessary infrastructure to insure safe and accessible trails for community members of all ages and abilities. The comprehensive trail network will promote health and wellness and better connect key destinations such as parks, schools, and commercial centers with non-motorized transportation alternatives

2 | Goals

Goal Setting

At the onset of this project, the Master Trail Plan Committee members participated in a strategic planning session which had the purpose of addressing three specific questions.

1. Why is the development of a trail network important?
2. What is it that you hope the master trail plan will accomplish?
3. What are the significant issues associated with the development of a trail network?

The result of the discussion regarding the above questions led to the development of the following goals and objectives which have guided this planning effort.

Goal Statement: To preserve, enhance and expand upon the City's existing pedestrian and trail network:

Strategies

- Develop safe and accessible multiple-use trails within and outside of the City that promote the health and well-being and provide alternative transportation and recreational opportunities for a wide variety of user groups.
- Develop a complete pedestrian and trail network for use by pedestrians of all ages and bicyclists of all experience levels that is both comfortable and safe through the addition of new on-street and trail facilities as identified in this plan.
- Provide an integrated trail system, with limited interruptions, which connects recreational, commercial, and other activity centers, and neighborhoods within and around the City.
- Develop new pedestrian and trail networks in accordance with the approved Master Trail Plan.
- Establish and follow prioritization standards for pedestrian and trail network trail development and update on an annual basis.
- Provide pedestrian and trail network construction and maintenance guidelines.
- Adopt "complete streets" ordinances and policies and design standards to accommodate all forms of transportation within each street right-of-way for all roadway or development projects.
- Locate pedestrian and trail network facilities in a manner that does not cause environmental degradation and protects environmentally sensitive areas.
- Integrate trails into new neighborhood developments.
- Locate trails in such a way that they are accessible to potential users.

Goal Statement: Develop a pedestrian and trail network that has broad based support and the ability to be implemented

Strategies

- Encourage partnerships between public entities (City, County, School, State).
- Work with the neighborhood groups, business community and others to foster the development of trails.
- Add a line item in the City budget for trails and trail linkages (bike lanes, sidewalks) facilities and educational programs that will adequately fund plan strategies.
- Complete pedestrian and trail network projects by leveraging private resources with public dollars to maximize funding.
- Implement a trail system that is cost effective to develop and requires minimum maintenance costs.
- Encourage the education of the public to avoid potential conflicts and foster a "can do" attitude.
- Promote the benefits of the trail system and usage including economic, transportation, safety, community image and health.

Goal Statement: Promote pedestrian and bicycle safety and security

Strategies

- Utilize established engineering guidelines in developing standards for design.
- Increase public awareness of traffic laws relating to cyclists and pedestrians.
- Encourage bicycle and pedestrian safety programs, especially for children.
- Encourage the placement of "Share the Road" signs on roadways that have adequate lane and shoulder widths.
- Maximize visibility and physical access to trails.
- Make all street crossings safe for trail users.

Goal Statement: Provide necessary trail maintenance

Strategies

- Conduct regular inspections of the trail system and identify maintenance needs for trails.
- Improve the condition of on-street bicycle routes and trails including enhanced street sweeping and pavement rehabilitation.
- Appropriate funding to address trail maintenance needs.
- Develop a prioritization plan for improving existing trails and schedule implementation of the improvements.

3 | Plan Process

In 2022 the Milbank Parks and Recreation board created a Master Trail Plan Committee to study the need for additional trails within the community. After several preliminary meetings, the Master Trail Plan Committee requested assistance from the First District Association of Local Governments (FDALG). In October 2022, the Milbank City Council retained FDALG to work with City Staff, Master Trail Plan Committee and local citizens to complete a Master Trail Plan (Plan) for the City. This document represents the results of the planning process.

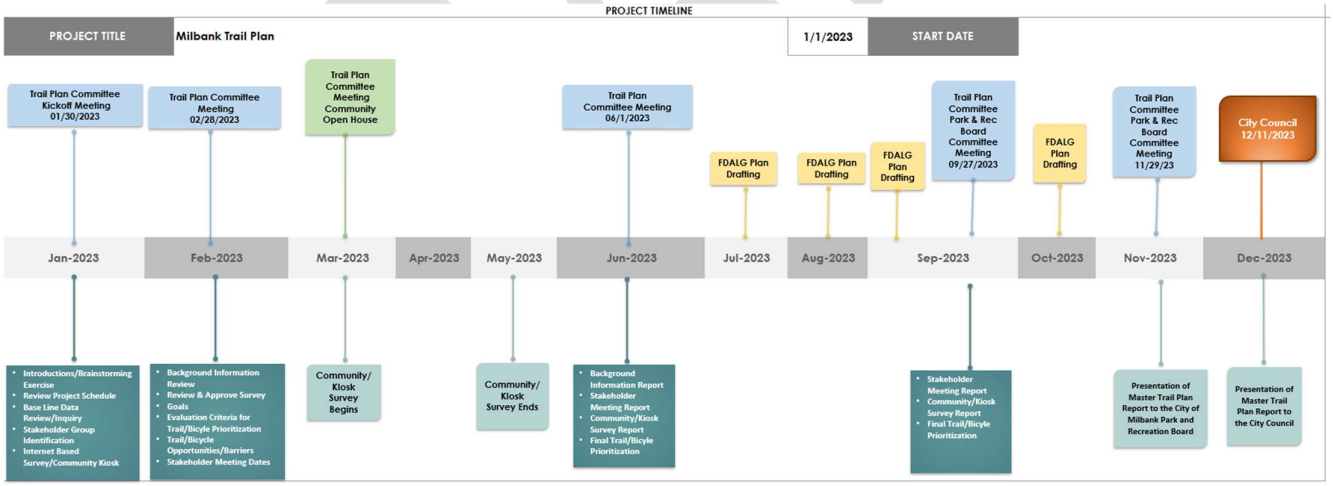
Master Trail Plan Committee

An eight-member member technical advisory committee (Master Trail Plan Committee) provided project oversight and input on critical planning issues. The group represented a cross-section of public officials and city staff . (A listing of committee members is provided under the acknowledgments.) The Master Trail Plan Committee held six meetings which are summarized below. Full meeting minutes from each of the Master Trail Plan Committee Meetings are included in Appendix A.

Timeline

The Master Trail Plan Committee and the FDALG utilized the following timeline in the development of the Master Trail Plan.

Figure 1



Project Kick-Off Meeting

The Project Kick-Off Meeting for the Plan was held on January 30, 2023 at the Milbank Community Room with four attendees. The main purpose of the meeting was to inform attendees of the project schedule and the scope. The Master Trail Plan Committee further discussed:

- Personal and community perceptions relating to off-street pedestrian /recreational trail activities.
- Necessary baseline data
- Stakeholder identification
- Community engagement/Survey instrument

Master Trail Plan Committee #2 Meeting

The second Master Trail Plan Committee meeting was held on February 28, 2023 at the Milbank Community Room with six attendees. The main purpose of the meeting was to review and provide input on the nine proposed trails and trail linkages. In addition, the following items were also discussed:

- Review of Survey Examples
- Preparation for Community Open House

Master Trail Plan Committee #3 Meeting

The Master Trail Plan Committee met for a 3rd meeting on March 28, 2023 at the Milbank Community Room with 7 attendees. This meeting also coincided with the Community Open House. Prior to the open house, the Master Trail Plan Committee reviewed the Plan's goal statements and preliminary evaluation criteria for trail/trail linkage prioritization.

Master Trail Plan Committee #4 Meeting

The Master Trail Plan Committee's 4th meeting on June 1, 2023 was held at the Milbank Community Room with three attendees. FDALG reviewed the outcomes of the Open House and Internet Survey. The Master Trail Plan Committee also finalized trail/trail linkage prioritization criteria. Absent cost estimates, the Master Trail Plan Committee members applied the remaining prioritization criteria to each individual trail/trail linkage segment. Those committee members who were not in attendance completed the prioritization exercise on their own and submitted their findings to FDALG.

Master Trail Plan Committee #5 Meeting

Members of the Master Trail Plan Committee met in conjunction with the Parks and Recreation Board on September 27, 2023 at the Milbank Community Room with ten attendees. FDALG reviewed the outcomes of the Open House and Internet Survey and the Master Trail Plan Committee's trail/trail linkage prioritization exercise from the previous meeting. FDALG provided a comparison of the weighted priorities without cost being attributed. FDALG then presented the projected cost for each trail/trail linkage segment. The Master Trail Plan Committee and Parks and Recreation Board were then directed to establish a final prioritization of all proposed trail/trail linkage segments.

Master Trail Plan Committee #6 Meeting

Members of the Master Trail Plan Committee met in conjunction with the Parks and Recreation Board on November 29, 2023 at the Milbank Community Room with 14 attendees. The purpose of the meeting was to review the final draft of the Master Trail Plan and receive recommendation for edits prior to a formal presentation to the City Council. After discussion, the Parks and Recreation Board accepted the Master Trail plan and further voted to have the Master Trail Plan presented to the City Council for their acceptance

Community Engagement

When initially developing a trail system, the needs of the community must be identified. Also, in order for the implementation of trail system to be successful, it will be necessary to acquire community support for the plan and implementation. The trail system has to have meaning that will produce a desire for those individuals to use it.

Community involvement was paramount to the development of this Plan. In developing the Master Trail Plan, the Master Trail Plan Committee utilized several public engagement strategies to obtain community Input which guided the Master Trail Plan Committee in their deliberations regarding the future trail network of trails, sidewalks and bikeways. This allowed the Master Trail Plan Committee to develop a plan that incorporated the wishes of the residents, while also considering the various trail development opportunities and constraints.

Open House

On March 28, 2023, FDALG, City Staff and the Master Trail Plan Committee hosted an open house. The open house format allowed the public to attend at their convenience to review the bicycle and pedestrian networks, provide comments, and learn the next steps of the plan development. Prior to the event, the Master Trail Plan Committee and staff disseminated information advertising the open house. FDALG provided a review of Master Trail Plan Committee activities and information regarding initial trail locations, facility preferences, and upcoming trail survey. Poster boards were employed to obtain feedback on potential trail locations and preferred type of trail facilities. Attendees used stickers to identify their top 4 (four) action items. Twenty people attended the open house (Appendix A). Many attendees stayed and discussed their concerns with city staff and FDALG for well over an hour, providing their unique and thoughtful insight. Input gathered at the open house influenced subsequent decisions of the Master Trail Plan Committee as they refined trail locations and criteria for trail prioritization. The Open House participants ranked Trail segments/linkages 6, 7, and 5, respectively, as the most important to complete.

Open House Images

Survey

In April 2023, an online survey was launched to gather input on the proposed bicycle and pedestrian improvements needed in Milbank (Appendix B). The survey ran for a six weeks, garnering 110 responses:

- Age of Respondents
  - 7% were under the age of 25
  - 18% were 26 to 35 years of age
  - 61% were 36 to 64 years of age
  - 14% were over the age of 65
- 76% of respondents walk or bike multiple times each week
- 33% of respondents walk or bike commute or run errands at least twice a week
- 49% of the respondents use the existing trail at least twice a week – this would equate to more than 1,500 users
- Respondents feel the most comfortable biking, walking, running on trails
- 50% of the respondents would utilize bike lanes
- Less than 20% would use unimproved road shoulders
- 80% of the respondents felt that there were not enough trails within the community

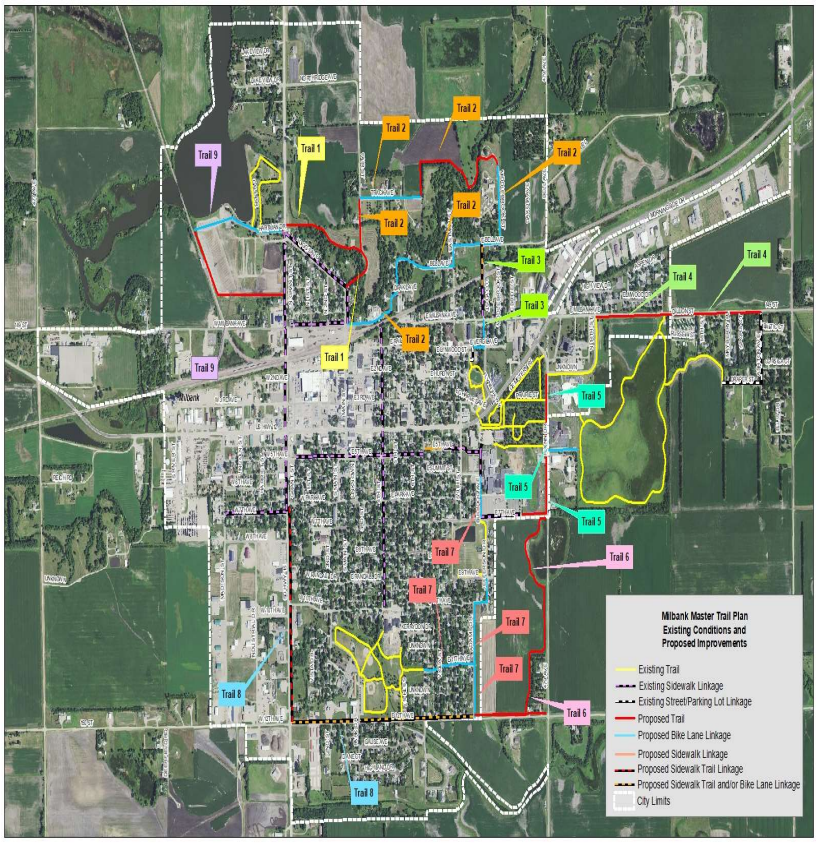
The survey also asked its respondents how personally comfortable they would be using different types of trail/trail linkage facilities and also to rank the three most important proposed trail/trail linkage segments.

- The top three proposed trail segments/linkages in the City that survey respondents think needed to be implemented were Segments 7, 6, and 5, respectively.

Figure 2

Item	Overall Rank	Rank Distribution	Score
Trail 7	1		501
Trail 6	2		492
Trail 5	3		473
Trail 1	4		440
Trail 2	5		408
Trail 8	6		363
Trail 3	7		339
Trail 4	8		335
Trail 9	9		289

Lowest Rank — Highest Rank



4 | Existing Bicycle and Pedestrian Network

The existing pedestrian and existing trail system consists of 24 miles of sidewalks and 6 miles of multi-use paths which primarily follow roadway alignments and natural features. Map 1 illustrates the existing bicycle and pedestrian network in Milbank,

Map 1
Existing Conditions

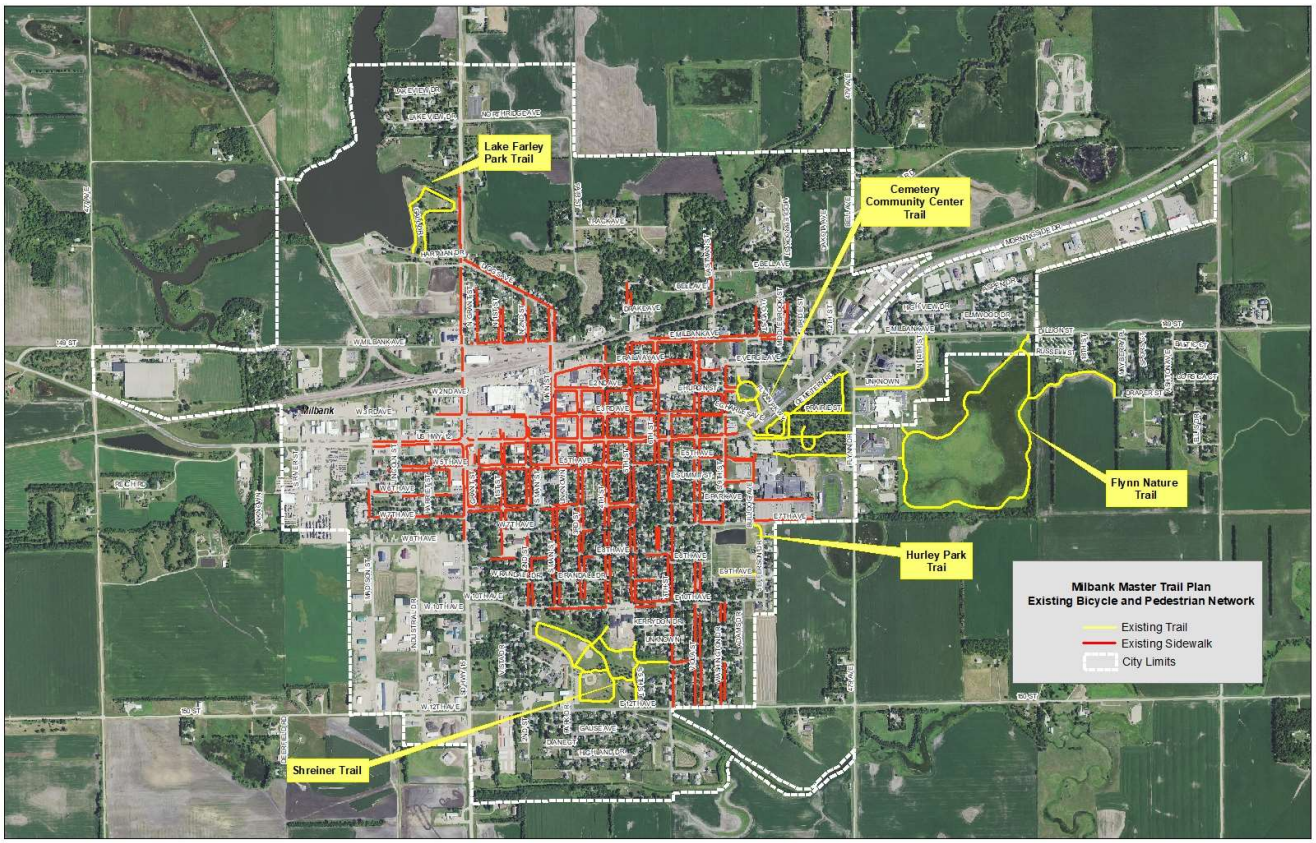


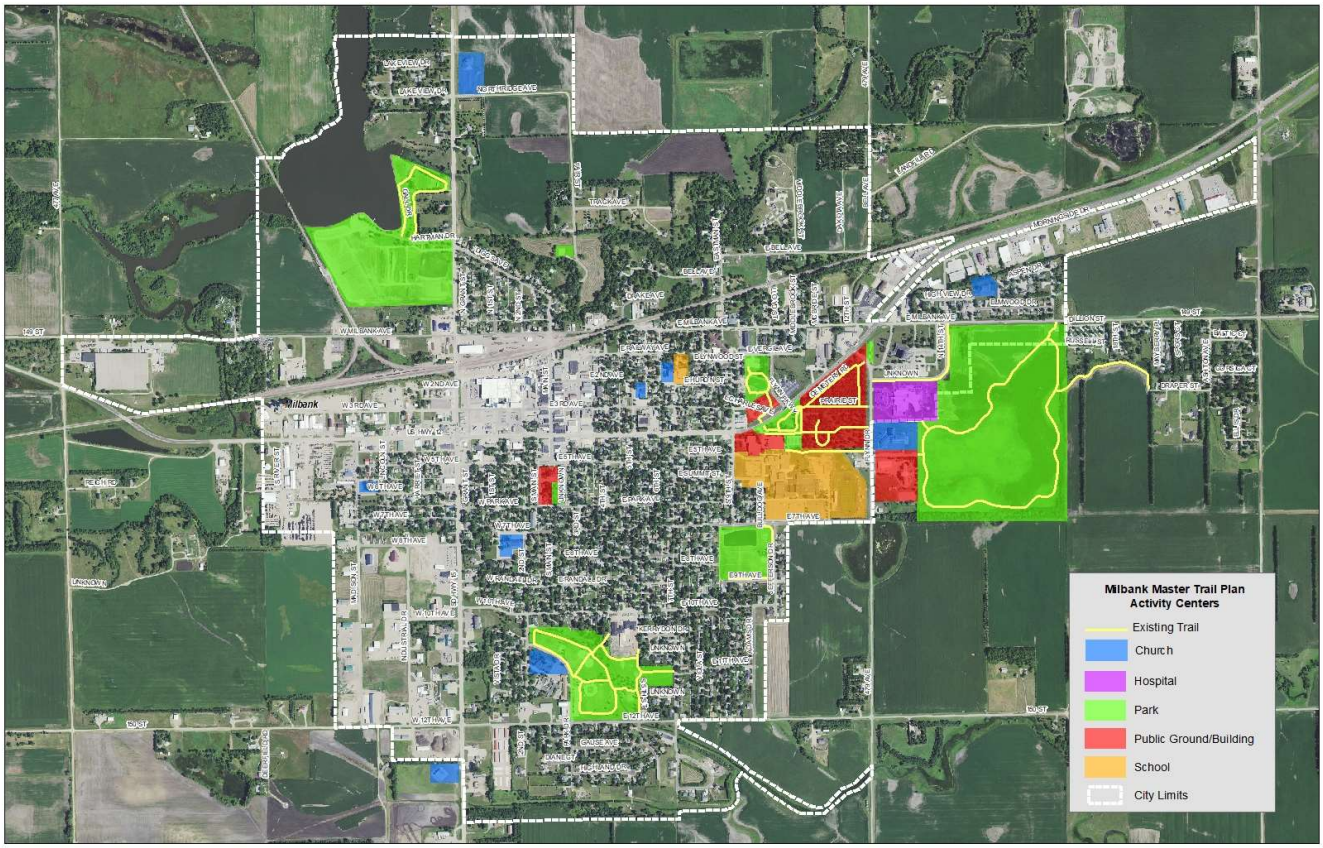
Table 1
Existing Trail Length

Trail	Trail Length (in miles)
Cemetery/Community Center Trail	2.1
Flynn Nature Trail	1.8
Hurley Park Trail	0.3
Lake Farley Park Trail	0.5
Schreiner Trail	1.4

Activity Centers

Activity Centers are points of attraction that typically generate pedestrian (biking, walking) trips. For example, there may be a playground, store, restaurant, or public library accessible to residents of a neighborhood by a trail or trail linkage. The Master Trail Plan Committee identified the activity centers within the community and incorporated those locations in addressing the existing and proposed trail/trail linkage network. Map 2 shows the community's non-commercial Activity Centers.

Map 2
Activity Centers



5 | Concept Budgets

Facility Types

Within this report there will be recommendations regarding the construction of four types of bicycle/pedestrian transportation facilities.

Bicycle Lane - Bicycle lanes are defined as a portion of the roadway designated by striping, signing, and or permanent markings for preferential or exclusive use of bicycles. Bicycle lanes should always move in the direction of traffic and should never produce a counterflow situation unless the counterflow lane is physically and three dimensionally separated from the flow of motor vehicles. Bicycle lanes are generally employed for on-road routes that connect to major trails or other major destinations.

Multi-Use Trails – Multi-Use trails are developed independently of streets and road rights-of-way and accommodate pedestrians, bicyclists, in-line skaters and other non-motorized users

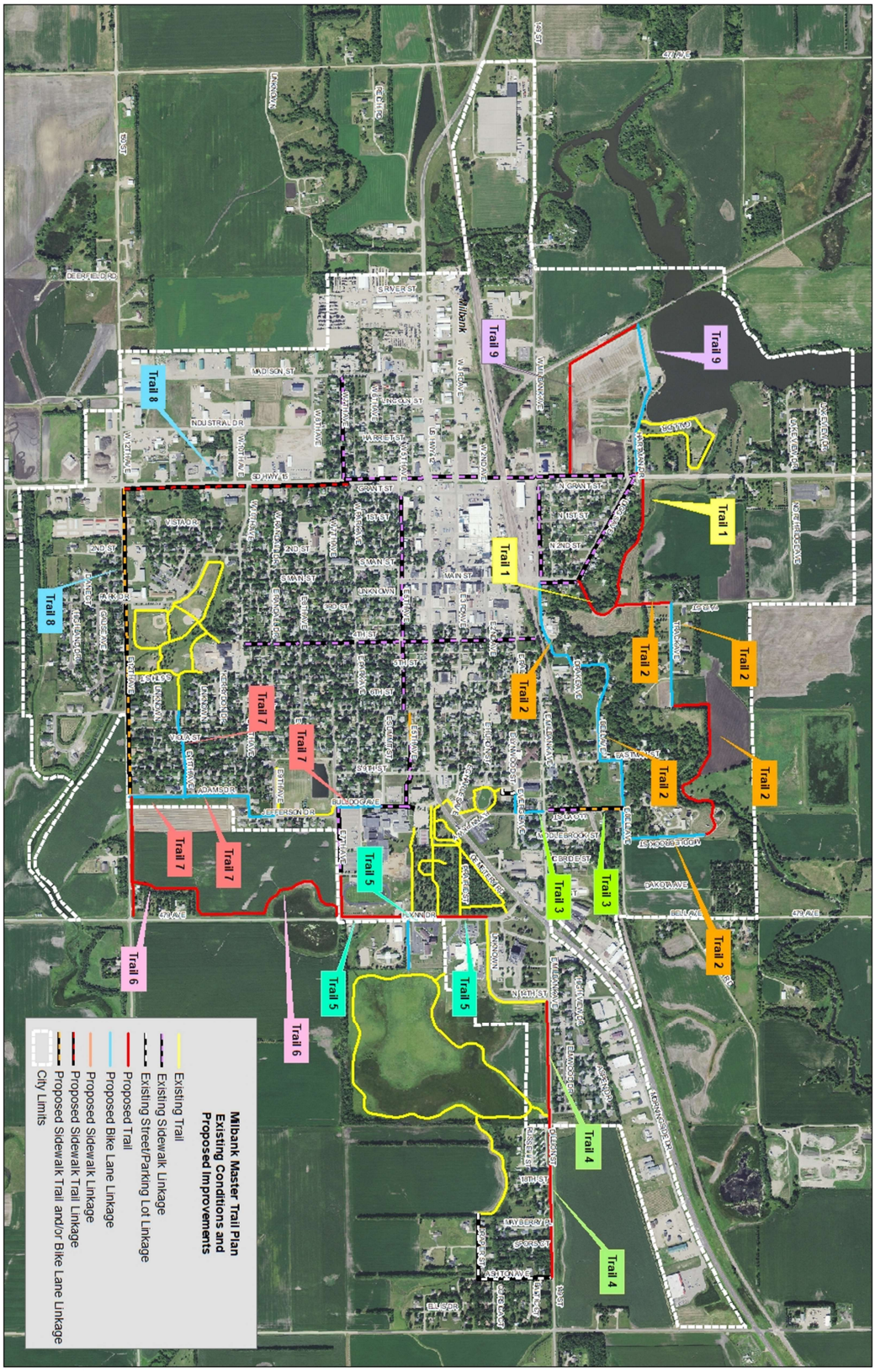
Sidewalk Trail – Sidewalk trails are off-road trails that are not less than ten (10) feet wide and designed for the primary use of pedestrians. They are typically located within street rights-of-way and have to deal with frequent street and driveway crossings.

Pedestrian Sidewalk – A concrete sidewalk or pedestrian pathway not less than four (4) feet wide designed for the primary use of pedestrians.

Proposed Trails

The Trails Committee developed an overview of the future trail network, that to the extent possible, connects the different neighborhoods and major attractors of the city. Where necessary, the route selection was generalized in order to allow some deviation when unexpected opportunities arise. Map 3 details the conceptual network system which is a guide to future siting and construction of multi-trails, bike lanes, sidewalk trails and pedestrian sidewalks, etc.

Map 3
Proposed Trail Network



Trail Costs

The development of a trail network involves many different aspects of construction. In many ways it is very similar to the construction of a highway or a street because it involves a great deal of preparatory work as well as the actual laying of the surface. Along the proposed route of the bicycle trail, there are obstacles in terrain and physical features that must be dealt with, such as drainage ditches, culverts and low soft areas. Project cost estimates include design/engineering (15%), construction, 20% contingency and 25% miscellaneous. The cost estimates provided below represent planning-level project cost estimates. They are intended to provide the City with an "order of magnitude" estimate for the project costs so the projects can be prioritized, and next steps can be taken (including additional study, soliciting funding, preliminary and final design, etc.). It should be noted that cost estimates do not include land acquisition, water crossing, signalization and support facilities or amenities such as – signage, lighting, rest areas, etc. Further detailed costing will need to be performed during the funding, project development, and design phases.

All costs regarding multi-use trails and shoulder bikeway/bike lanes were projected utilizing an average of preliminary and actual construction costs experienced by several municipalities in northeast South Dakota in 2023. In the construction of an asphalt multi-use trail, the projected cost of constructing 10-foot wide, 6-inch-deep base course, and 3-inch asphalt overlay with associated grading was **$105** per running foot of trail. The projected cost of a 10-foot-wide multi-use trail constructed with a six-inch gravel base and six-inch layer of concrete with associated grading was **$150** per running foot. The projected cost of a standard bike lane **is $1,500 plus $0.10 per running foot**. Bike Lane stencils cost **$150** and standard crosswalk paintings average **$250** per intersection

Table 2 provides a breakdown of linear feet and projected cost of completing the associated segment of trail network utilizing base cost estimates described above. If the entire network would be constructed the **minimum cost**, not including amenities, signage, signalization and extra fill work would range between **$2,550,925 and $3,273,650.**

Table 2
Projected Cost By Trail Network Segment

Trail Segment	Description	Linear Feet	$105/foot Asphalt Multi-use Trail	$150/foot Concrete Sidewalk Trail	Bike Lane	Crosswalk	Crossing	Stencil	Total
1	Multi-Use Trail 1 Crosswalk	2,940	$261,450	$0	$0	$250	$75,000	$0	$336,700
2	Multi-Use Trail/Bike Lane	9,910	$428,925	$0	$2,665	$1,000	$0	$1,800	$434,390
3a	Bike Lane/ Sidewalk Trail	1,830	$0	$144,000	$1,590	$750	$0	$300	$146,640
3b	Bike Lane	1,830	$0	$0	$1,690	$750	$0	$450	$2,890
4	Multi-Use Trail 5 Crosswalks	3,270	$343,350	$0	$0	$1,250	$0	$0	$344,600
5	Multi-Use Trail	2,230	$234,150	$0	$0	$1,000	$0	$0	$235,150
6	Multi-Use Trail	4,895	$513,975	$0	$0	$0	$0	$0	$513,975
7	Bike Lane 6 Crosswalks 7 Bike Stencils	3,725	$0	$0	$2,245	$1,500	$0	$1,050	$4,795
8a	Sidewalk Trail	6,660	$0	$999,000	$0	$1,000	$0	$600	$1,000,600
8b	Bike Lane & Sidewalk Trail	6,660	$0	$417,750	$2,275	$1,000	$0	$600	$421,625
9	Multi-Use Trail/Bike Lane	3,790	$254,625	$0	$1,775	$250	$0	$150	$256,800
TOTALS		**39,250**	**$2,036,475**	**$417,750 to $1,143,000**	**$8,275 to $10,650**	**$7,000**	**$75,000**	**$3,900 to $4,050**	**$2,550,925 to $3,273,650**

6 | Trail Priorities

To properly address trail desires and needs, the Master Trail Plan Committee engaged both the public and the city staff on key issues and priorities that should be addressed and included in the Master Trail Plan. Since the associated costs of the development of a comprehensive trail system is more than can reasonably be financed in one year, the committee members developed criteria on which to justify and rank the trail network facility improvements. These following criteria were developed to identify the priorities to be set for implementation of this plan.

5. DESIGN/LOCATION/ACCESSIBILITY

Does the proposed trail/trail linkage enhance accessibility by completing a planned loop or expanding the existing trail network?

- Gap: Does the proposed Trail/Trail linkage link fill a gap in the existing network?
- Connectivity: Does the proposed Trail/Trail linkage connect 2 or more trails?
- Destination: Does the proposed Trail/Trail linkage link to an activity center (parks, schools, church, business, etc.)?
- Land Use Conflicts: Does the proposed Trail/Trail linkage conflict with adjoining land uses?

6. SAFETY

Does the proposed Trail/Trail linkage enhance pedestrian/bicycle safety or mediate an existing safety issue?

7. AESTHETICS

Does the proposed Trail/Trail linkage provide a scenic/aesthetic recreation experience?

8. COST/FEASIBILITY

Is the proposed trail/trail linkage feasible?

- Is there public support?
- Initial construction cost?
- Long-term maintenance costs?
- Is there a need to acquire sufficient right-of-way and is it available?
- Is the location practical and will it be used to the extent to justify the cost?
- What support facilities (signage, amenities, etc.) will be required?
- Are there opportunities for matching grant funds?
- Can the project be accomplished without receiving grants or using 100% public funding?

Based on the above criteria, the Master Trail Plan Committee established the following priority rankings and applied them to each proposed trail/trail linkage segment

Table 3
Priority Criteria Rankings

Priority Ranking	Criteria Category	Criteria Statement
1	**Safety**	Does the proposed trail/trail linkage enhance pedestrian/bicycle safety or mediate an existing safety issue?
2	**Design/Location/Accessibility**	Destination: Does the proposed Trail/Trail linkage link to an activity center (parks, schools, church, business, etc.)?
3	**Design/Location/Accessibility**	Connectivity: Does the Trail/Trail Linkage connect 2 or more trails?
4	**Cost Feasibility**	Is there public support?
5	**Cost Feasibility**	Initial construction cost?
6	**Cost Feasibility**	Is the location practical and will it be used to the extent to justify the cost?
7	**Aesthetics**	Does the proposed trail/trail linkage provide a scenic/aesthetic recreation experience?
8	**Cost Feasibility**	Can the project be accomplished without receiving grants or using 100% public funding?
9	**Design/Location/Accessibility**	Gap: Does it fill a gap in the existing network?
10	**Cost Feasibility**	Are there opportunities for matching grant funds?

Trail and Trail Linkage segments were then ranked based upon priority and need. Higher priority projects were deemed important enough to begin planning, design and construction in the next one to five years. The timetable for medium priority projects is six to ten years. Lower priority projects would not be expected to begin for at least ten years. It should be noted that because a specific portion of the trail network has a medium or low priority ranking, it would not be precluded from an earlier construction start than what is presently outlined. This could occur because of available funding or cost-sharing opportunities.

Table 4 shows the prioritization of the various trail segments throughout the various stages of the development of the Master Trail Plan. It is important to note that whether it was at the beginning of the planning process (Master Trail Plan Committee Kickoff); midway through the process (Open House, Community Survey); or at the end of the process (utilizing weighted prioritization criteria), Trails 5, 6, and 7 were consistently identified as High priorities, Trail Segments 2 and 8 were consistently identified as Medium Priorities, Trail Segments 3 and 9 were consistently identified as Low Priorities and Trail Segments 1 and 4 vacillated between Low and Medium Priorities.

Table 4
Trail Segment Prioritization

Priority/Most Important	Priority Level	Trail Segment Priority at Master Trail Plan Committee Kickoff	Trail Segment Priority at Community Survey	Trail Segment Priority at Open House	Trail Segment Priority by Weighted Priorities
1	High	7	7	6	7
2	High	6	6	7	6
3	High	5	5	5	5
4	Medium	8	1	8	8
5	Medium	2	2	1	4
6	Medium	4	8	2	2
7	Low	3	3	4	3
8	Low	1	4	9	1
9	Low	9	9	3	9

7 | Implementation Suggestions

Identifying needs is often the easy step in the development of any plan. However, creating a long-term logical implementation strategy is crucial to turning many of the ideas contained in this plan into reality. Keys to successful Plan implementation include the following:

- Identify Your Trail Leader
- Identify Funding Opportunities (Annual Capital Improvement Budgeting, Developer Contributions, Outside Resources)
- Education
- Trail Usage and Promotion
- Trail Management
- Maintenance
- Policy

Identify Your Trail Leader

Often there is great impetus to develop a plan which addresses a community need. However, if no one is selected or volunteers to see the plan come to it fruition, that plan is not worth the paper it is written on. In order for this not to occur the city needs to identify a "Trail Leader" who can champion the Plan and its effective implementation. More than likely, this person should be a member of the city staff who can dedicate a portion of their time to this important matter. The Trail Leader would be responsible for the following:

- Coordinating with city departments to ensure the Plan's recommendations align with ongoing city projects (road resurfacings, etc.).
- Assist in developing project priorities.
- Ensure elements of the Plan that require local funding are included in annual budgets.
- Give periodic updates to the Parks and Recreation Board and City Council.
- Coordinate grant and funding alternatives.

Identify Funding Opportunities

To build and maintain trails requires a significant amount of resources over extended periods of time. Typically, cities have access to five funding sources that are key for implementing planning efforts:

City Operating and Capital Improvement Budgets

Each year, the City should consider how the current annual operating budget and five-year capital improvement plan impacts pedestrian recreational activities (bicycling, running, walking, etc.). If possible, funds should be dedicated towards annual maintenance and practical capital improvement projects.

- *Bonds and Assessments* - In the past, various state and local agencies have successfully used bonds or assessment districts to fund improvement projects or acquisitions.

- *General Fund* - An annual set-aside in the City's Capital Improvement Program (CIP) could be used to fund trail development. These funds could be leveraged annually by using them as matching funds for grants, for example.

Departmental Budgets

City departments could share staff and financial resources to take mutual steps towards implementing projects with budgets, technical resources, and staff time.

Fees

User or impact fees are key strategies to funding projects in the city budgets.

Grants

Having a trail implementation plan heavily influenced by the community and adopted by the city puts Milbank in a good position for grants when funding cycles become available. Multiple grant resources are conducted throughout the year that could be identified and frequently used to implement elements of this Plan. The following are examples of funding sources that may be pursued to provide funding for improvements identified in this Plan. The list and table below are not intended to detail all funding sources, and certain requirements and restrictions may apply to some, or all of the programs listed herein.

Recreational Trails Program (RTP) **-** The South Dakota Department of Game, Fish & Parks accepts grant applications for the Recreational Trails Program (RTP). The program provides up to 80% reimbursement of eligible expenses for recreational trails. The 20% match may be in the form of cash, in-kind, and or other federal, state, and local grants. Federal grants used as match must be approved in advance. Trails may be utilized for motorized, non-motorized, or for both. Examples of recreational trail uses include, but are not limited to, pedestrian, bicycling, in-line skating, equestrian, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four wheeling, etc.

South Dakota Department of Transportation (SDDOT) Transportation Alternatives (TA) - Transportation Alternatives (TA) is a program that uses federal transportation funds, designated by Congress, for specific activities that enhance the inter-modal transportation system and provide safe alternative transportation options. TA encompasses a variety of smaller-scale non-motorized transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to storm water and habitat connectivity.

Highway Safety Improvement Program - The Highway Safety Improvement Program provides funding to states for projects that correct or improve a hazardous road location or feature or otherwise address a highway safety problem. The legislation lists examples of many projects eligible for this funding, including improvements for pedestrian and bicycle safety, and installation and maintenance of signs at pedestrian and bicycle crossings and school zones. A state may be eligible to use up to 10 percent of its Highway Safety Improvement Funds for other safety projects, such as education and encouragement programs.

Land & Water Conservation Fund (LWCF) - is a federal aid assistance program to help states provide outdoor recreation facilities. The program provides up to 50% reimbursement funds for acquisition and development of outdoor recreation projects. Eligible applicants include city, county, township and tribal governments.

Rebuilding American Infrastructure with Sustainability and Equity (RAISE) - is a Federal discretionary grant program that provides funding for surface transportation infrastructure projects that will improve safety; environmental sustainability; quality of life; mobility and community connectivity; economic competitiveness and opportunity including tourism; state of good repair; partnership and collaboration; and innovation. Minimum grant award is $1,000,000 with a 20% local match.

People for Bikes - is a charitable foundation sponsored by the bicycle industry. They work within the bike industry and mainstream media to promote and encourage bicycling among the general public, helping introduce new riders and new customers to the industry. The PeopleForBikes' Bike Industry Community Grant Program supports bicycle infrastructure projects and targeted initiatives that make it easier and safer for people of all ages and abilities to bike. Grant amounts range from $5,000 to $10,000 and must be matched with at least 50% local funding. Grant cycles occur annually.

Table 5
Funding Sources

Funder	Program	About	Award Amount	Applicable Agency	Deadline
USDOT	Rebuilding American Infrastructure with Sustainability and Equity (RAISE)	Transportation improvement projects including bicycle and pedestrian elements and intermodal projects. https://www.transportation.gov/RAISEgrants/apply	At least $1 million with a 20% match	State of SD, City of Milbank	1st Quarter Annually
USDOT	Highway Safety Improvement Program	State is eligible for State Highway Safety Program grants by having and implementing an approved Highway Safety Plan (HSP). The funding can go to bike and ped safety, school bus safety, and driver safety on state roadways. https://dot.sd.gov/transportation/highways/highway-safety#listItemLink_1205	Varies	State of SD,	Ongoing
SD Game, Fish, and Parks Department	Recreational Trails Program	Recreational Trails Program (RTP) is a federal aid assistance program to help states provide and maintain recreational trails for both motorized and non-motorized trail use. https://gfp.sd.gov/partnerships/	Varies with a 20% Match	State of SD which allocates the funds to the City	Annually
SD Game, Fish, and Parks Department	Land and Water Conservation Fund	Land and Water Conservation Fund (LWCF) is a federal aid assistance program to help states provide outdoor recreation facilities. Eligible projects may include, but are not limited to playgrounds, ballfields, sport and play fields, picnic facilities, pools, ice rinks, golf courses, amphitheaters, winter sports facilities, visitor information facilities and land acquisitions. https://gfp.sd.gov/partnerships/	Varies with a 50% match	State of SD which allocates the funds to the City	Annually
SD DOT	Transportation Alternatives	TA includes the Safe Routes to School, Scenic Byways and Recreation Trails Programs, smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails and community improvements. https://dot.sd.gov/programs-services/programs/transportation-alternatives#listItemLink_1420	Up to $600K with a 18.05% match	State of SD which allocates the funds to the City	Annually
People for Bikes	Community Grants	Private foundation with funding for trails, multi-use paths, bike parks, pump tracks, bicycle playgrounds, neighborhood greenways/bike boulevards, and protected bike lanes https://www.peopleforbikes.org/grants	Up to $10,000	City	Annually

Public/Private Partnerships

In addition to government sponsored revenue-generating opportunities, other types of public/private partnerships can be considered which would result in the constructing or maintaining of trails facilities, including:

- Fundraising Campaigns: Frequently, the private and not-for-profit sectors are willing to assist the City with clearly defined, well-marketed campaigns to improve safety.

    - Donations: Community Giving Campaign/Individual donors/ Local corporations and businesses
    - Private contributions can be enlisted to "Adopt a Trail", whereby they provide on-going trail construction, clean-up and maintenance in return for on-site public recognition.
    - Private foundations which emphasize health and wellness.
    - Contributions commemorating an event or memorializing an individual
    - Club or organizations sponsorship (Kiwanis, Boy Scouts, etc.)

- Private Landowners: Landowners can assist in the acquisition of land for trails. The implementation of the Master Trail Plan offers opportunities for landowners to accrue tax benefits from whole or partial donations of land for trails. Land donations often generate tax benefits that equal or outweigh the unrealized gain of a conventional market-rate sale.

- Citizen involvement : The City could enlist the help of local citizens to implement the Plan. Active citizens can help construct trails or perform periodic clean-up and maintenance.

Education Programs

As the Plan begins to be implemented, the Trail Leader and the Parks and Recreation Board need to begin educational outreach efforts throughout the community. A more knowledgeable citizenry can be powerful advocates for promoting trail usage. The following educational outreach components should be considered:

- Provision of bike safety classes.
- Outreach to local schools with regards to bicycle safety and the health and wellness benefits of biking, walking, and running.
- Monthly community bike rides which incorporate safety and education components.
- Conduct 'Share the Road' media campaigns.
- Provide links on the City website to various education and safety campaigns
- City observance of National Bike Month in May.
- Conduct a citywide Bike to Workday.
- Work with local schools to observe Bike to School Day.

Trail Usage and Promotion

In addition to identifying future trail construction/maintenance projects, it is the intent of this plan to identify basic events and policies which will increase, enhance, and encourage usage of the trail system.

The City, similar to most municipalities, has developed an auto-centric transportation policy and system. Transportation rules, capital improvement, street improvement planning, and other administrative decisions rely upon automobile traffic patterns in mind; however pedestrian or bicycle traffic impacts carry significantly less impact. Policy changes are most apt to affect those riders who are comfortable with most traffic conditions and are best served by providing adequate width for bicycle travel on all roadways. Policies regarding where bicycles can travel (sidewalks, trails, and roadways) may need review. Further, policies regarding parking on certain streets, and even providing detours for bicycles when roads or trails are affected by road or building construction may need review. This plan encourages the review of policies which affect trail and bicycle usage in the city which utilizes input from users of the system.

Related to policy development is the education of the residents of the City on the importance of bicycle transportation and trail usage. This plan supports the outreach and education of residents on the health and environmental benefits of pedestrian and bicycle transportation. The residents of the City also should be advised of the trail system's composition and usage in addition to the practicality of bicycle transportation. Finally, the residents of the City should be educated on how to use the trail system, particularly during the less traveled winter months. Certainly, other outreach and education would familiarize residents of this City with their trail system and how or when it can be used; but these topics will be of great importance in furthering public policy aimed at increasing safety and usage of the existing trail system.

Specific events pique awareness of the trail system which leads to increased usage of the trail system. It is important to identify specific audiences for certain types of events. This plan refers to the types of users outlined by the Bicycle Federation of America (see below). Depending upon the skill or endurance level of trail users, certain skill events, unique events and social events should continue to be planned and new ones created.

Type A – Advanced Bicyclists: Experienced riders who are comfortable traveling in most traffic conditions. These persons, in general, prefer to travel at maximum speed with minimum delay, and travel on streets rather than mixed-use trails. These riders desire direct access to school, work, shopping and other destinations, and are best served by providing adequate width for bicycle travel on all roadways.

Type B – Basic Bicyclists: Persons who are casual or new adult and teen riders. These riders prefer safe and comfortable access to recreational or leisure-related destinations. Type B bicyclists are most comfortable where there is well-defined separation of bicycles and motor vehicles. They can be accommodated on a network of designated bicycle facilities and on low-volume neighborhood streets.

Type C – Children: Young riders (preteen), whose bicycle use is generally monitored by parents. They can be accommodated on the same facilities as Type B bicyclists. A strong emphasis should be made on providing safe connections between residential areas and key destinations such as schools and recreational areas.

Traditional skill events include endurance events such as marathons, triathlons, running and bicycle events of varying distances, and other endurance races. This plan encourages the continuation of the usage of the trail for events such as these. Further it is recommended to seek opportunities to become affiliated with skilled competitions or events of local, state, regional, and national affiliation. These events should be designed to encourage usage amongst advanced bicyclists and other similarly qualified users. It should be noted that events of this type serve as milestone events for people with less experience. Further recognized skill events boost awareness of the trail system amongst participants and area residents that may be unfamiliar with the trail system.

Unique events include a seemingly endless variety of events which could be designed to include trail usage at varying levels. Typical examples include varying events "for cause". In these events trail users are either sponsored to raise money for a charity cause or walk/ride to promote awareness of a certain cause. Numerous communities create obstacle course run/ride events. These events typically include a unique obstacle or event. With Milbank's unique natural resources, a truly one-of-a-kind event could be created.

The trail may also be used in conjunction with unique events for the City of Milbank. It is recommended that future events consider the usage of parks or locations easily accessible by the trail. Unique events increase usage of the trail amongst advanced and basic bicyclists by introducing the usage of pedestrian transportation to children. Advanced users will be involved in these events simply because the events are not out of the ordinary for their typical usage. Basic bicyclists and children will be apt to attend age and skill appropriate activities in coordination with the event.

Perhaps the most effective way to bridge the gap between education regarding bicycling or walking, and actually getting users to the trail is to organize regular events. Perhaps the likeliest form of this would be the organization of weekly trail rides/walks. These events could require riders to travel varying distances with some sort of event, business or park as a final destination. Similar events could be planned for walkers or bikers of lesser endurance or experience. The goal of these events is two-fold. First, it is the intent to introduce riders or walkers with a "basic" skill set and children to the benefits of using the trail through familiarization and creating healthy habits. Second, the events will embolden these "basic" riders to become confident and comfortable using their bicycles for everyday activities. Organization of weekly rides and walking events could even be planned for sponsorship. These events would be planned to start each week at a different location and end at a different location for a retail, dining or entertainment experience. This plan encourages the creation and support of local organizations which would promote the use of trails through education and frequent, regularly scheduled events which utilize the trail.

Social media provides a means of interaction for walkers/riders of the trail system. Utilizing mapping software, blogs, or specific sites such as Twitter, Facebook, or Flickr creates opportunity to express their trail related interests. These expressions engrain the trail as a necessary component to the individual. In the end, links to social media create advertising opportunities volunteered by those that use and enjoy the trail. Limited only by imagination, numerous opportunities for promotion of events interaction amongst trail users, and the creation of web only contests or incentives accomplish this goal. Basic websites include blogs or chat boards for users to describe their experiences; or message boards advertising trail events such as the weekly rides described early in this section. Message boards or interactive maps could be used by riders or walkers to identify new potential trail options or current hazards/suggested improvements which could be made. With GPS and smartphone capabilities there are numerous options for mapping and tracking rides or distances to have coordinated contests or for groups of users to conduct private contests. Other possibilities include the creation of a site allowing for the posting of pictures taken on the trail and posting those pictures on the site at the location on the map. Conversely, scavenger hunt style events could be created for riders to find the location of a

historical photo taken along the current path of the trail, and again to either try to recreate or simply identify the location. These are just a few examples of how the use of web-based resources may increase usage of the trails by users of all skill sets and ages. The plan supports the further study and creation of web resources to promote and increase usage of the Milbank Trail System.

As discussed, certain events and policies will increase, enhance, and encourage usage of the trail system. Some groups and individuals have already formed and taken it upon themselves to create some of the events and sponsor some of the policies described above. It is paramount for the success and coordination of future events to have more such involvement from the community. Coordination of the above policies and events, particularly internet development, advertising and outreach, cannot be handled solely by volunteer organizations and will eventually necessitate paid staff to accomplish these goals.

Trail Management

The following policies will provide an effective framework for trail management.

Consider possible trail management issues and draft a concise trail management plan for new trails. Prior to trail construction, seek the participation of adjacent property owners and jurisdictions, and general public in preparing a long-term management plan for trails and trail corridors. The Milbank Parks and Recreation Department will be responsible for preparing and administering the management plan. At a minimum, the plan should address the following issues:

- Public education about trail usage and respecting the rights of adjoining properties.
- Identification of user groups, potential conflicts and solutions to conflicts.
- Rules for public use and safety, who will oversee enforcement and distribution of rules to trail users (posting of rules at trail heads, including them on trail maps and brochures, etc.)
- Accountability for implementation of the management plan. Assignment of specific trail management responsibilities to volunteer and service groups.
- Risk management issues and identification of a strategy to reduce trail injuries.
- Education of trail users in trail safety.

The Milbank Parks and Recreation Department will determine whether or not a management plan is needed on particular trails. Trails that present minimal management issues may not require a plan.

Inform the public in advance, when possible, of trail closures. The City may close any trail for maintenance or safety purposes. The public should be notified of trail closures at trailheads and at the points of closure. Notification should include dates and reason for closure.

Collect feedback from trail users and others. Public comments concerning trails will be retained by the Parks and Recreation Department. Comments should also be solicited from the public through trailhead surveys, comment cards and other appropriate means. These comments should be periodically reviewed to identify management issues, improvements and user satisfaction.

Maintenance

One of the best and simplest ways to positively promote a growing bicycle network is by ensuring that regular maintenance occurs on existing paths and roads. Maintenance and operations of bicycle/pedestrian facilities are centered on maintaining a smooth, clean riding/walking surface. In particular, trails should not have drainage grates, surface imperfections, rough railroad crossings, or other areas that could cause the trail user to fall. Sand, gravel, glass, and other loose material should be removed regularly to prevent accidents. The following are some basic maintenance procedures that should occur on a regular basis:

- Repair potholes, heaves and other irregularities in the pavement surface.
- Ensure erosion is not undermining off-road trails.
- Ensure positive drainage occurs and 'puddling' does not occur on trails.
- Repair missing or vandalized signs as soon as they are damaged.
- Restrip pavement markings to ensure they are highly visible
- Replace missing and damaged signage
- Trim trees, shrubs, and grass to maintain sight distance
- Sweep to remove leaves, mud, gravel and other debris
- Mow trail shoulders
- Pick up trash, empty trashcans
- Clean restrooms and drinking fountains
- Remove fallen trees
- Clean and replace lighting
- Remove snow and ice
- Spray for weed control
- Install and remove snow fence

When considering maintenance costs, keep in mind the following direct relationship: If you build it, you must maintain it. The final trail design, therefore, must reflect the amount of money (and volunteer time) available for maintenance. Unfortunately, maintenance dollars are difficult to secure. Foundation and government grants, while available for trail acquisition and development, are generally not available for maintenance.

The Milbank Parks and Recreation Department will be responsible for the management of trails owned or managed by the City. Trails, when properly maintained, should last indefinitely. The following are maintenance principals that should be incorporated in planning and post construction.

- *Determine Maintenance Responsibilities* - Before constructing a trail, establish how often the trail should be maintained and identify the party who will be responsible for maintenance. As the trail network expands, maintenance becomes increasingly important in the trail network. Maintenance such as mowing, and snow removal must be considered in designing future trails. The City should plan ahead to anticipate potential problems and minimize them through appropriate design and quality construction.

- *Schedule Design and Maintenance Reviews* - The Milbank Parks and Recreation Department will prepare an annual Trail Maintenance Program and Budget. Any public comments on the trail should also be reviewed at this time. Problems identified should be corrected at this time. All trails should be inspected at least twice a year and busy trails once every twelve weeks throughout the usage season. Detect and fix problems while small and repair vandalism immediately. Inspections will be the responsibility of the Millbank Parks and Recreation Department.

Regardless of who is responsible for performing the work, trail maintenance activities should be consistent with the schedule in Table 6.

Table 6
Trail Maintenance Practices – Recommended Schedule

Trail Maintenance Practices – Recommended Schedule	
On-going	• Vegetation – mow shoulders (maintain 2-3 feet clearance) and blow trail surface • Litter and debris cleanup • Trash removal • Use/Safety inspections o ROW encroachment inspections o Verify safety for trail users (no fallen/hanging branches, slippery spots, etc.) o Graffiti/Vandalism/Criminal Activity o Inventory surface failures (cracks, dips, crumbling edges) o Drainage/Culvert clearings
1 to 3 years	• Vegetation o Noxious weed control as needed o Trim trees/shrubs to maintain clearance o Other annual resource management activities • Pavement Survey Inspection • Trail surface sweeping (Spring) • Overpass/Underpass structure inspections – every 2 years • Asphalt crack repair – perform where needed
4 + Years	• Signs and lane/crossings striping – replace as needed • Fog Seal – every 4 to 6 years • Sealcoating – every 6 to 10 years • Overlay – every 15 to 20 years

Policy

The Milbank trails network will contribute significantly to the quality of life in the community. The trail system is an important component of the overall transportation system. In addition to the recreational value of the trails, trails also provide an alternative means of transportation.

There are two principal resources required for a trail network. First is land in the form of linear corridors and this may be assembled through a variety of means. The second is the wherewithal to build and maintain the facilities.

In addition to the two principal resources, there are two primary approaches to implementing a trail network. The first approach is to aggressively go after potential corridors (e.g., railroad lines, utility easements, water corridors, and linear park opportunities) and build trail segments whenever the opportunity arises. The second is to implement regulations that require developers to build trail segments or at least provide dedicated rights-of-way in their developments.

Trails can be implemented in a variety of ways besides fee-simple acquisition of land and use of open space dollars for construction and maintenance. Partnering with other agencies, including federal, state and private developers can stretch limited funds. In addition, grants can be used to plan and construct new trails. The following are examples of potential policies which may aid in the development of the City of Milbank's Trail Network.

Implementation Measures

- Identify and map all existing trail easements in the City. Once the trail easements are identified, develop a missing linkage map and create a plan to link all the trails.

- Create a program to identify and acquire public ownership of trail corridors and access points needed to develop an effective trail network.

- Develop and maintain a GIS-based trail map with parcel information so that the City can track existing and required easements.

- Develop and maintain a trail promotion program which includes developing trail brochures, providing information on the City's web page and providing information, at activity centers such as the City's community centers and parks, on the location of trails within the City and connections to regional trails surrounding the City.

- Work with property owners to educate and inform trail users about trail boundaries (through pamphlets, signage, etc.) in the early stages of trail development in close proximity to private property.

- Require the development of a trail network in the growth areas of the community as a condition of new subdivisions, where deemed appropriate, either as new elements in the community design standards or in lieu of the traditional sidewalk system which abuts the streets and highways.

- Ensure that trails and bike lanes are included in plans for new transportation projects.

- Develop trails, if possible, concurrently with the infrastructure of a subdivision or development it goes through.

- Coordinate the City's trail system planning, implementation and management efforts with those of regional jurisdictions and public agencies. It is recommended that the Parks and Recreation Manager continue to work with the City Administrator and other City staff in the review of commercial, industrial, and residential development plans – i.e., annexations, master plans, new subdivisions, etc. In the review of the proposed development plans City Staff should incorporate trail networks, where necessary, into all proposed developments and relate this information to the Planning Commission and the Parks and Recreation Board for their comments.

- Develop a prioritization plan for trails in the City utilizing the new trail construction priorities outlined in the Plan.

- Incorporate off-street trail rights-of-way/easement acquisition and trail development into the City's Capital Improvement Program.

- Encourage major activity centers to provide accessibility to pedestrians and bicycles including necessary storage facilities.

- Establish an "Adopt a Trail" program for ongoing trail construction, maintenance and patrol activities.

- Identify partnership opportunities with neighborhood groups, private individuals and local businesses as a means to acquire various trail amenities.

- Identify potential tax-related incentives and seek funding for other inducements for private property owners to allow and support public trails

- Apply for grants and alternative funding sources for trails.

- Budget adequate funds for trail development.

- A major opportunity for trail development may be to follow the existing and proposed storm water drainage systems into the new areas of the community. The benefits of developing a multi-use corridor include a reduced cost of right-of-way acquisition by using the same corridor for many purposes.

- The trail system should be a component evaluated as part of all major street and highway improvement projects. Trails are an eligible activity under federal highway funding and the issue of trail development and funding should be included in the discussion of operational funding.

- To the extent possible, trails will be developed concurrently with the infrastructure of a subdivision or development it goes through.

8 | Design Standards

Planners and engineers have been working with bicycle and pedestrian issues for several decades. As a result of that work, standards for design, maintenance and operation of bicycle/pedestrian facilities have been developed and published. These standards serve as guidance for communities, like Milbank, looking to plan and build facilities for bicycle and pedestrian transportation.

These standards represent the combined experience and professional judgement of planners and engineers to date. They are not, however, the final word on the subject. As more multi-use trail facilities are built and new ideas developed, the standards may change. The standards and practices should be reviewed periodically to make sure they are properly aligned with the latest developments. Local experience is particularly valuable in determining whether a design or maintenance or operation procedure is performing its desired function.

Design and construction guidelines are intended to assist city staff with implementation of the Plan, as well as provide the development community with a clear understanding of design standards considered appropriate by the City. The standards in this section are based on a number of factors, including safety, accessibility, and overall appearance of the trail system.

The geometric characteristics of bicycle ways are governed by whether they are on city streets, rural highways or separate facilities. On-street bicycle lanes should generally be at least five (5) feet wide for one-way traffic. Off-street multi-use paths should be at least ten (10) feet wide to accommodate two-way passage. When on-street bicycle lanes are used, care needs to be taken at all locations where conflicts may occur between cars and bicycles. All bicycle facilities must be designed for proper sight distances and grades less than five (5) percent, if possible.

The trail network should be indicated and regulated by proper signs. The Manual on Uniform Traffic Control Devices, published by FHWA, contains a section on signs for trail networks. This manual should be used as a guide by the City of Milbank.

Most guides detailing the design standards are comprehensive and too lengthy to include completely within this planning document. However, information from established published guides is contained within the Appendix C of this report.

Design Policies

- In the developing areas of the community, the trail system should, to the extent possible, connect into the overall community trail system to assure a seamless network of trails throughout the community.

- Trails should connect existing trails, proposed parks and activity centers.

- The preferred choice for park and recreational trails is non-right-of-way or off-road trails. However, on-road lanes or in the right-of-way trails will be included in the trail network system as needed but only where an off-road route is not available.

- Trails should be located and constructed in such a manner as to minimize maintenance requirements and to maximize access.

- Trails should follow natural contours where possible and respect surrounding landforms.

- Drainage features should be incorporated into the design and construction of trails where appropriate to reduce erosion.

- Wide, gentle curves with good forward sight distance should be utilized.

- Trails and staging areas need to be easily accessible to the public in order for the trails to receive high use.

- When possible, trail systems should offer loops, allowing the individual to return to a starting point without having to back-track.

- Consideration should be given to establishing a mile-maker system for trails to facilitate public safety understanding of user location if rescues or aid is necessary.

- Trail design should be incorporated into plans for natural drainage channels, street rights-of-way, landscape corridors, utility rights-of-way and other open space.

- Trail plans should be incorporated into plans for new transportation structures such as roads, bridges, and overpasses.

- The City should require recreation and trail planning and construction as a condition of approval for future development projects. Plans should provide access to trail heads located on adjacent public lands.

- The City should retain existing city-owned rights-of-way that have potential to assist in the implementation of the Plan.

- The City should obtain rights-of-way from other entities (e.g., utility districts) that assist in the implementation of the Plan.

9 | Conclusion

Milbank is fortunate to have an existing trail network providing recreational opportunities for residents, visitors, cyclists, and pedestrians. The implementation of this Plan will not only bring those trails online with the city's transportation network but establish and grow a culture that encourages and empowers all users.

The implementation of all components of this Plan will take dedicated efforts on the parts of a wide variety of stakeholders. Rome was not built in a day, nor will a trail network be built in Milbank overnight; it will take years of strategic efforts to see it through. That said, this Trails Master Plan provides a tangible and realistic 'road map' that can help ensure that priorities, hopes and aspirations align with opportunities as they become available over the coming years.

In conclusion, the Plan should be viewed as a 'living document' which will need to adjust to political, financial and other realities which may impact the intent of this plan. Periodic updates (once every 3-5 years) may be necessary to reflect the current needs of trailway users, and better position the city for future funding alternatives.

Appendix A
Meetings and Minutes

City of Milbank Parks and Recreation Master Trail Plan Committee Meeting Minutes

Project Kickoff Meeting

Date/Time: January 30, 2023

Place: City of Milbank Community Room

Attendees:

Todd Kays	First District
Dan Keyes	City of Milbank
Mindy Rogers	City Council
Eric Pulling	Master Trail Plan Committee
Ryan Waterfall	Master Trail Plan Committee

Introductions: Kays introduced himself and laid out the potential outcomes for tonight's meeting. Each attendee introduced themselves and provided Kays with their backgrounds and what they hoped would be achieved in this process:

Comments included:

- Safety is important
  - Need alternatives to walking in the street
- Increase property values
- We need long-term commitment from private and public

Kays then facilitated a discussion regarding personal and community perceptions relating to off-street pedestrian /recreational trail activities and perceptions. Topics included: Access to trails

- Access to trails
  - Not terrible, many use streets to get there
  - Intersection safety needs to be improved
  - Sidewalks are hit and miss throughout the community
- Expansion of existing trails
  - It is necessary
- Crowding on trails
  - Not too bad
  - Prybl gets used a lot
  - Most trails are at least 8 feet wide – plenty of room
- Safety/maintenance problems
  - There are cracks and heaves in existing trail
  - Blind spots (corners)
  - Power pole in middle of trail in Prybl
  - No line item for maintenance in budget
  - Maintenance is reactive not proactive
  - Flynn Trail is not owned by City

- Signage of trails and routes
  - Currently no signage/wayfinding
  - Needs to be addressed
- Lighting of trails
  - Only lighting is at Farley
- Support facilities for trails
  - Farley has restroom/shelter
  - Prybl has restroom and water fountain
  - Flynn – Water station at hospital
  - Community Center Lobby has water and restroom
- Design of trails
  - Need to follow general standards for trail, sidewalk and bike lane
  - Not sure if there are any local standards in place
- Funding of trails
  - No line item for new construction in budget

Project Schedule: Kays reviewed a proposed timeline that would result I best case scenario of completed plan in July/August 2023

Base Line Data: Kays reviewed baseline data needs.

- What information is necessary and/ or is it available?
  - Traffic Counts – Outside Highways 15 and 12 – not much available from SDDOT
  - Crash Points – SDDOT Data shows only 2 pedestrian accidents between 2014 and 2022
    - May need to consult with Police Department to receive additional perspective
- Is there a Sidewalk Inventory?
  - No specific How important is it to the Plan to review this?
- Does the City have a Capital Improvements Plan?
  - Yes – will need to get a copy
- What applicable Ordinances exist regarding sidewalks, trails, bicycle use, bicycle/pedestrian infrastructure?
  - Committee was not sure – will need to meet with Jon at the City to confirm
- Existing Land Use Layer
  - This has been done
- Activity Centers and proposed Bike Trails
  - Reviewed existing working map – Confirmed Trails and Activity Centers, will need to identify trail linkages (sidewalks/bike lanes)

Stakeholder identification: Committee felt that most groups that are currently on committee represent all affected groups, will revisit at next meeting

Internet Survey/Kiosk Discussion: Kays reviewed options for community engagement activities in the forms of surveys and information gathering kiosks

- Survey
  - This would be 15-20 question survey on perceptions, potential usage and needs
  - Survey available online and at Kiosk Locations
- Facility Design Preference
  - This provides pictures of facilities and asks respondent to look at pictures of different facility and state how comfortable they would feel biking or walking.
  - Survey available online and at Kiosk Locations

- Routes I would Ride/Walk
  - This would be a map with the prescribed trails and Bike Lane/Sidewalk Corridors. Respondents would be asked if they would utilize the specific Trails/Corridors and then prioritize trails and corridors
  - Kiosk Locations would also provide opportunity to suggest other trail and corridor locations

Next Meeting: February 28, 2023

- Items for discussion
- Review of Survey Examples
- Develop Goal Statements
- Develop Plan evaluation criteria for trail/trail linkages prioritization
- Preparation for Community Open House

City of Milbank Parks and Recreation Master Trail Plan Committee Meeting Minutes

Meeting #2

Date/Time: February 28, 2023

Place: City of Milbank Community Room

Attendees:

Todd Kays	First District
Dan Keyes	City of Milbank
Mindy Rogers	City Council
Eric Pulling	Master Trail Plan Committee
Ryan Waterfall	Master Trail Plan Committee
Heidi Wellnitz	Master Trail Plan Committee
Rhonda Preller	Master Trail Plan Committee

Kays provide a brief overview of the January 30, 2023 meeting

Kays and the Committee reviewed proposed trail segments

Trail Segment 1

- Most of land is owned by City/limited acquisition cost
- Would need structure across the river
- Recommend trail not bike lane down to dog park on Eastman Avenue
- Current Bridge on Eastman Avenue is old
- Dog park is an amenity along trail
- Scenic Route
- Prone to flooding
- Good route for kids to get to Farley Park

Trail Segment 2

Bike lane could be used along Middlebrook Street as this is a low traffic road
Could serve new housing developments north of Track Avenue
Would be mostly scenic trail on north side of loop (potentially gravel trail to start)
Bike lanes along Bell Avenue on south side of loop

Trail Segment 3

- This is basically a linkage between existing trail north of Community Center and Trail Segment 2
- Could start out as a bike lane then possibly oversized sidewalk

Trail Segment 4

- This could be phased with the first segment being trail between 14th Street and east city limits
- 2nd phase being trail from east city limits to Ashton Avenue
- There would not be a need for bike lane or oversized sidewalk on Draper St and Ashton Avenue as the street could be used – Signage would be recommended.

Trail Segment 5

- This trail segment is really important
- Needs to be separated trail and not a bike lane

Trail Segment 6 and 7

- Discussion was held to combine portions of initial trail segment 6 and 7 into a single trail segment
- Important to identify trail segment as this will be a future residential development

Trail Segment 8

- This segment would consist of either oversized sidewalk or trail with some separation (boulevard0 between trail/sidewalk and Hwy 15/12th Ave

Trail Segment 9

- Lot of potential for kids to use
- Bike lane/normal sidewalk linkage
- It was determined to move this trail linkage from Park Avenue to 5th Street

Trail Segment 10

- Lot of potential for kids to use
- Committee agreed that trail 10 as identified on the map may not be what it could look like. Rather that pedestrian walkways (trail/sidewalk/bike lane) should be part of design of campground and baseball facilities.

Kays presented the proposed survey instrument

Kays and Committee reviewed the next steps

Open House

- Date: March 28, 2023
- Time 6:30
- Location: City of Milbank Community Room
- Pre-open house meeting Activities
  - Newspaper Story
    - Dan would contact paper – perhaps Dan, Kays, Committee member be available for interview
  - Public Service Announcements
    - Kays would get announcements prepared
    - Dan would contact paper/radio stations
  - Open House Stations
    - Facility Preference Board
    - Trail Segment Preference Board
    - Other Trail Segment Options Board
    - Paper Survey Option

Open House Agenda

- Welcome
- Project Overview
  - What are we trying accomplish?
- Explanation of Stations

Survey Instrument

- Implementation of the Survey
- Social Media
  - Get survey link on various websites
    - City, County, Unity Square, First District
- Community Kiosk Locations
  - Community Building
  - Unity Square
  - Library, Bank, others?

Kays provided sample Goal/Objective Statements and Trail Prioritization Criteria to Committee members to review and be prepared to discuss at next meeting

Next Meeting: March 28, 2023

- Items for discussion
  - Review of Goal/objective statements
  - Review of Trail Prioritization Criteria
  - Community Open House

City of Milbank Parks and Recreation Master Trail Plan Committee Meeting Minutes

Meeting #3 and Open House

Date/Time: March 28, 2023

Place: City of Milbank Community Room

Attendees:

Todd Kays	First District
Dan Keyes	City of Milbank
Rhonda Preller	Master Trail Plan Committee
Eric Holmquist	Master Trail Plan Committee
Eric Pulling	Master Trail Plan Committee
Ryan Waterfall	Master Trail Plan Committee
Heidi Wellnitz	Master Trail Plan Committee
Mindy Rogers	City Council
Loran Rademacher	
Cheryl Rademacher	
Alison Kramer	
Tim DeJong	
David Stengel	
David Rogers	
Corey Hooth	
Rick Hermans	
Joyce Hermans	
Stacy Anderson	
Paysen Anderson	
Karla DeVaal	
Jim Behrens	

Prior to the Open House - Kays provided handouts on goal statements and prioritization issues to the Bicycle/Pedestrian Trail Committee members with instructions to review and be prepared to discuss at next meeting

Kays also informed the Committee that the on-line survey would end on May 15, 2023 and suggested a meeting for later May or early June in order for Kays to draft a review of the survey and open house station data.

Open House

Dan Keyes and Eric Pulling welcomed everyone to the open house, introduced Committee members and provided historical background information regarding the Trail Plan

Todd Kays, First District provided information on past Committee Meetings held in January and February of 2023. He further stated that tonight is the beginning of the community engagement process, and the Committee is asking for input regarding the ideas the Trail Committee has put forth. He also informed the group of the survey opportunities and future community meeting to present the Committee's findings before the plan is to be presented to the City Council.

The public asked several questions regarding: Who can use the trails (golf carts, scooters, etc.)? Who owns Flynn Trail?; General perception of what the trail could or should be – 1. Family oriented, Way to get to and from schools, and a place for recreational opportunities.

After the discussion, Kays explained the Trail Preference, Trail Facility and Trail Survey stations and invited the attendees to go to each station and provide feedback.

The open house ended at 8 p.m.

City of Milbank Parks and Recreation Master Trail Plan Committee Meeting Minutes

Meeting #4

Date/Time: June 1, 2023/6 p.m.

Place: City of Milbank Community Room

Attendees:

Todd Kays	First District
Dan Keyes	City of Milbank
Heidi Wellnitz	Master Trail Plan Committee
Corey Hooth	Master Trail Plan Committee

Todd Kays, First District, reviewed the outcomes of the Open House and Internet Survey. The Master Trail Plan Committee also finalized trail/trail linkage prioritization criteria. Absent cost estimates, the Master Trail Plan Committee members applied the remaining prioritization criteria to each individual trail/trail linkage segment. Those committee members who were not in attendance completed the prioritization exercise on their own and submitted their findings to FDALG.

City of Milbank Parks and Recreation Master Trail Plan Committee/Milbank Parks and Recreation Board Meeting Minutes

Meeting #5

Date/Time: September 27, 2023

Place: City of Milbank Community Room

Attendees:

Todd Kays	First District
Heidi Wellnitz	Master Trail Plan Committee/ Parks and Recreation
Steve Wenzl	Parks and Recreation
Brian Sandvig	Parks and Recreation
Darin Thiele	Parks and Recreation
Cody Pholen	Parks and Recreation
Eric Pulling	Master Trail Plan Committee/ Parks and Recreation
Brian Pauli	Parks and Recreation
Rhondi Scoular	Parks and Recreation
Matt Wilson	Parks and Recreation
Ron Kranz	City Staff

Members of the Master Trail Plan Committee met in conjunction with the Parks and Recreation Board on September 27, 2023 at the Milbank Community Room with ten attendees. FDALG reviewed the outcomes of the Open House and Internet Survey and the Master Trail Plan Committee's trail/trail linkage prioritization exercise from the previous meeting. FDALG provided a comparison of the weighted priorities without cost being attributed. FDALG then presented the projected cost for each trail/trail linkage segment. The Master Trail Plan Committee and Parks and Recreation Board were then directed to establish a final prioritization of all proposed trail/trail linkage segments.

City of Milbank Parks and Recreation Master Trail Plan Committee/Milbank Parks and Recreation Board Meeting Minutes

Meeting #6

Date/Time: November 29, 2023/6 p.m.

Place: City of Milbank Community Room

Attendees:

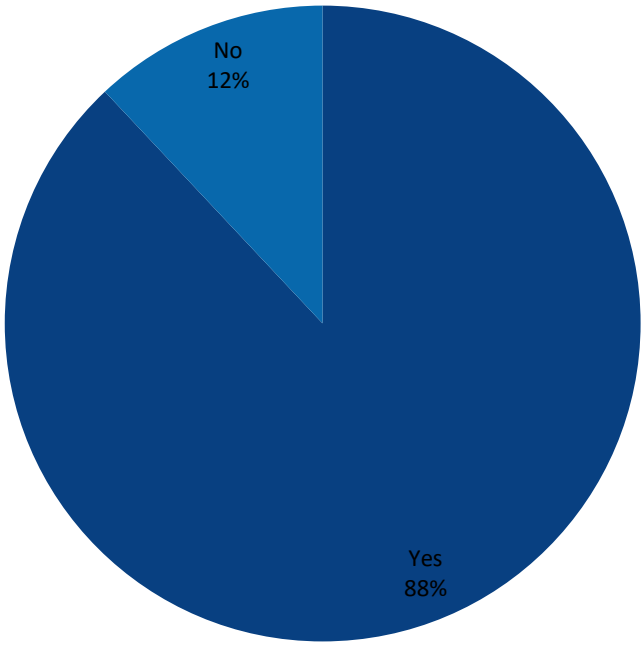
Dan Keyes	City of Milbank Staff
Darin Thiele	City of Milbank Staff
Ron Krause	City of Milbank Staff
Heidi Wellnitz	Parks and Recreation
Steve Wenzl	Parks and Recreation
Jody Bear	Parks and Recreation
Brian Pauli	Parks and Recreation
Brian Sandvig	Parks and Recreation
Matt Wilson	Parks and Recreation
Cody Pohlen	Parks and Recreation
Mindy Rogers	Cindy Council/Trails Committee
Eric Pulling	Parks and Recreation
Mike Hanson	City Council
Steve Pendergrass	City Administrator

Todd Kays, First District, reviewed the final draft of the plan and took Board comment. Parks and Recreation Board recommended to the City Council approval of the Plan as a guide for future pedestrian recreational trail development.

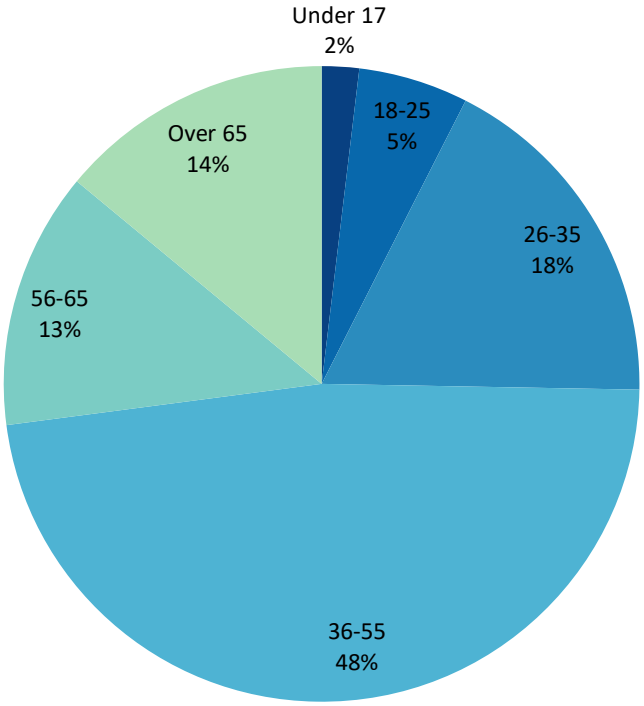
Kays will update the Plan and place it on FDALG website for Recreation Board and City Council review and comments prior to City Council meeting.

Appendix B
Survey Results

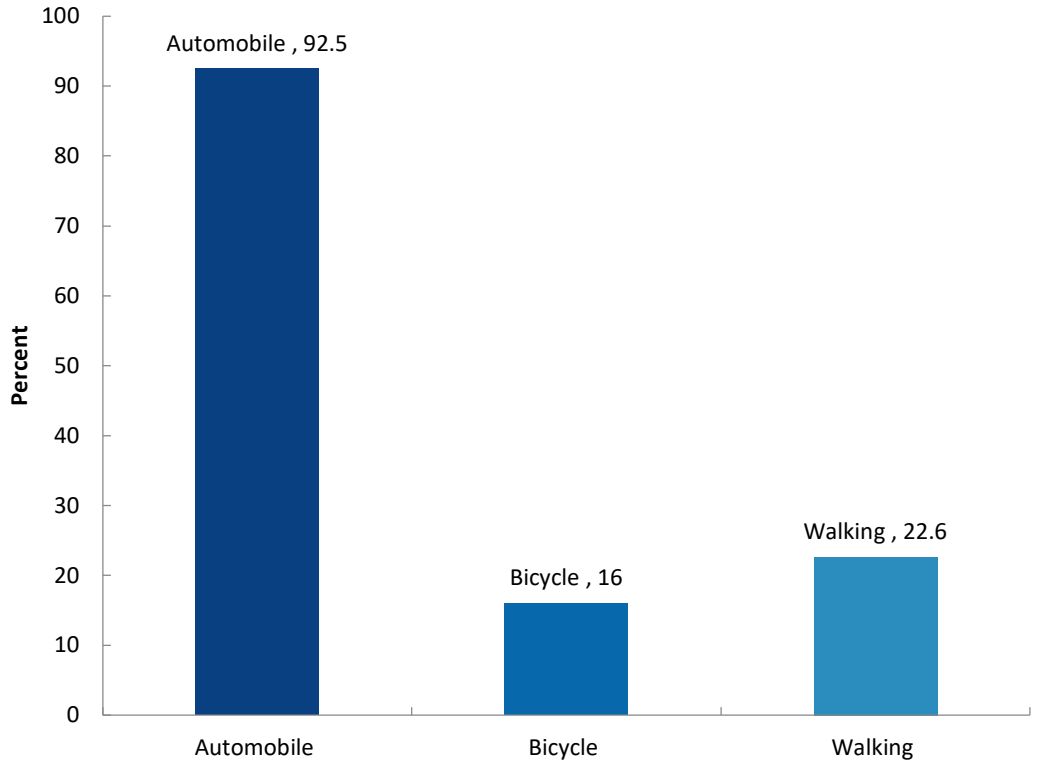
1.Do you live in Milbank?



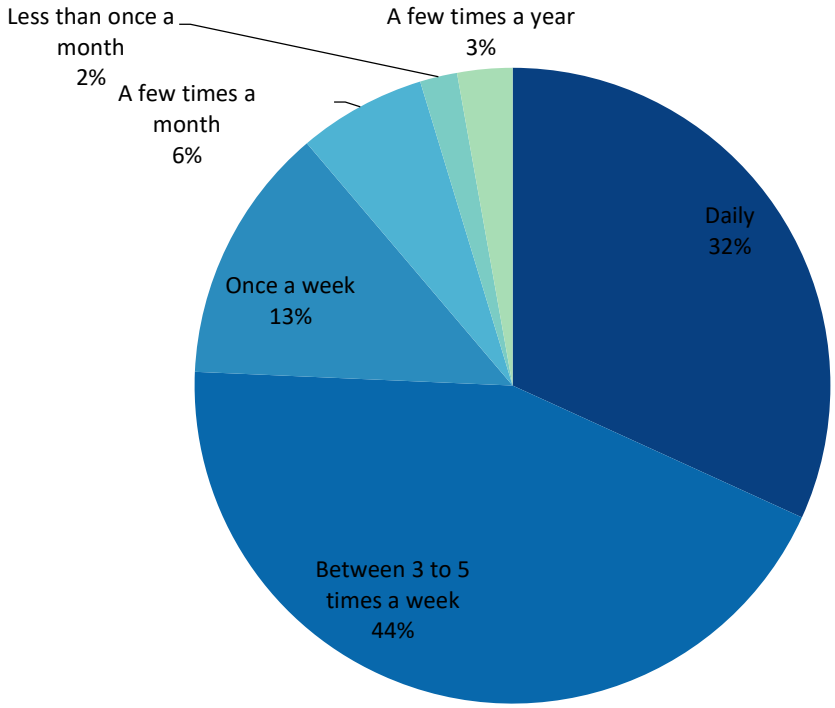
2.What is your age group?



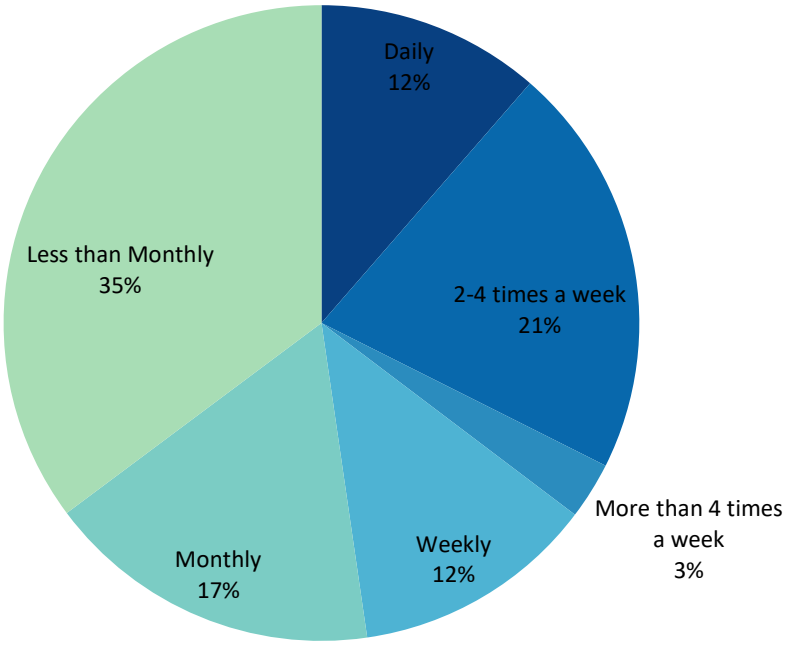
3.What is your main mode of transportation?



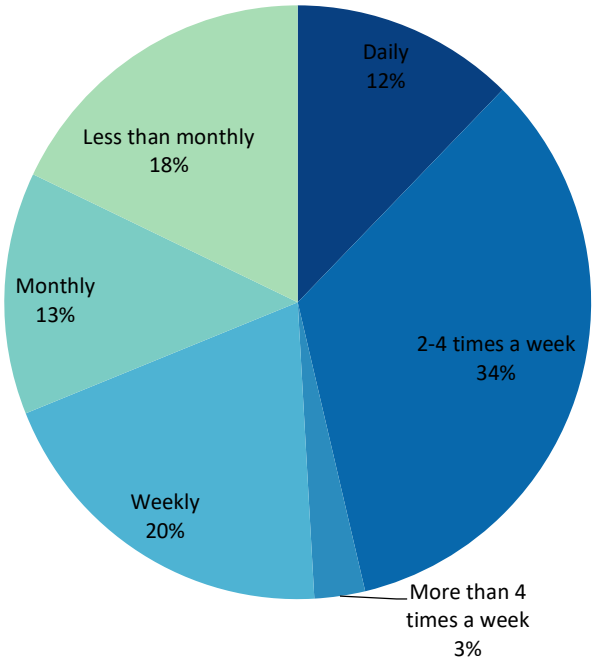
4. How often do you participate in "active recreation" (bicycle, walk, run, rollerblading, pet walking, cross country skiing, etc.)?



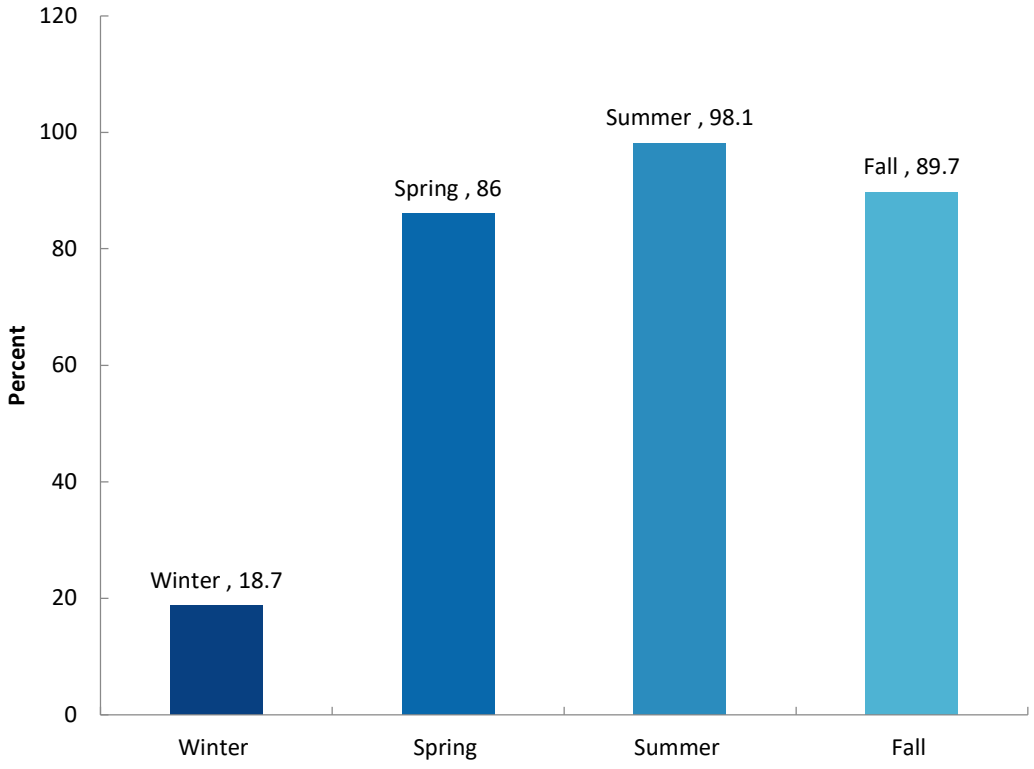
5.How often do you use "active recreation" for transportation purposes?



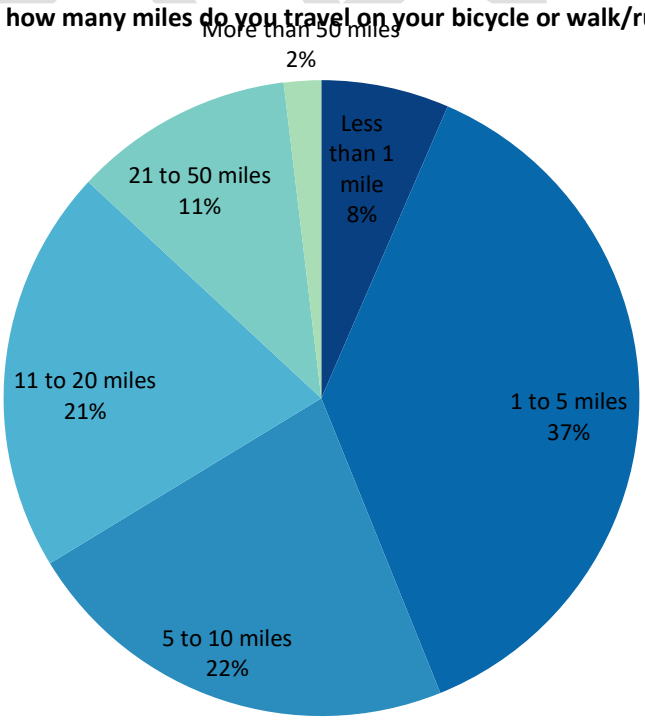
6.How often do you use the existing trails in Milbank?



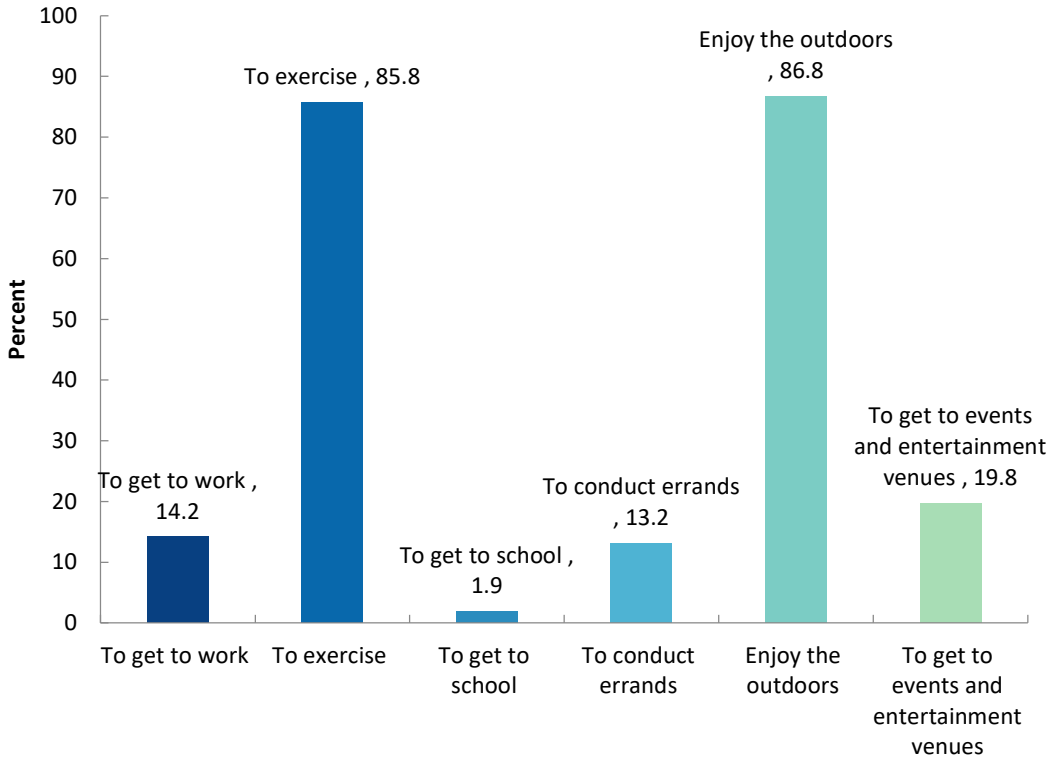
7. When do you use the existing trail network? (Check all that apply)



8. On average how many miles do you travel on your bicycle or walk/run in a week?



9. Why do you ride your bicycle/walk or run? (Select all that apply)



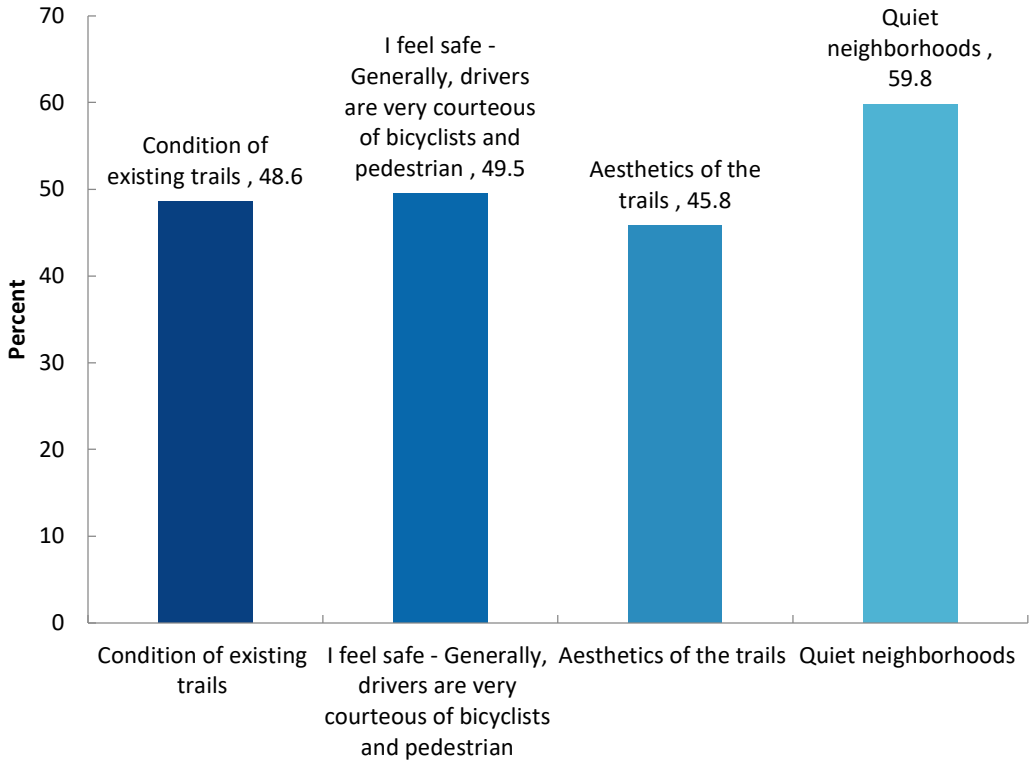
10. Where do you feel the most comfortable riding your bicycle (Rank 1 to 4 with 1 being the most comfortable)

Item	Overall Rank	Score	Total Respondents
Trails	1	379	102
Bicycle Lane	2	206	81
On the Sidewalk	3	159	78
Streets	4	151	78

11. Besides Bicycling, where do you feel the most comfortable participating in other "active recreation" activities in Milbank (Rank 1 to 4 with 1 being the most comfortable)

Item	Overall Rank	Score	Total Respondents
Trails	1	393	103
On the Sidewalk	2	219	91
Bicycle Lane	3	189	87
Streets	4	154	89

12.What do you like most about "active recreation" opportunities in Milbank? (Check all that apply)



13.Describe other things you like about "active recreation" opportunities in Milbank?

I like having parks or trails near my home
Safe spaces without 3+wheel motor vehicles.
N/A
Current trails are kept up well
It would be nice to connect some things in Milbank without having to use city streets.
Most relaxing, can listen to book, music, visit
Great for outdoor exercise. The trails are incomplete however, and the sidewalks are terrible
The trails are nice and some have great views. Quiet areas of town are nice enough to even run on the streets with most people being courteous enough to give the runner the right of way.
I like the quiet neighborhoods and ability to take kids down side streets on bikes/roller blades.
Outdoor activities help me connect with nature and other community members with similar values.
L.Farley trails, fishing, kayaking, XC skiing
I use the trails at prible park all the time while playing disc golf at the park
The trails are a great place for the kid and the dogs to walk on with less fear of vehicles not paying attention
Ability to stay close or in town while being on trails. The trails connect main roadways. Trails are well maintained. There are parks, benches, and dog waste bags on trails.
Seeing other members of the community out enjoying the outdoors.
.
Everything seems safe, when it comes to personal safety. Yet, sidewalk condition is a hazard.
The ability to enjoy the outdoors with my toddlers and not having to worry about vehicles on the trails.
lots of towns have bike/walking trails in their city,where it is safe surrounded by traffic,would be nice to see one that doesnt have the snakes and high grass ,for safety,always water in the one we have
When riding I like quiet and no car traffic
Most definitely need more. Using sidewalks are hard to get a good workout on due to they dont connect or are nonexistent &/or not well maintained. Flynn Trail is great. Lake Farley good but I like walking longer distances so would like to see it expanded which is possible...my idea: put up an intersection bridge or something so people can cross over the highway & city can utilize the pasture on west side of road and make a trail along the creek & plant flowers for a butterfly haven and a bridge to the dog park and we can walk back in that area along the creek
I live by the Flynn trail and appreciate utilizing it with my young children(4 under age of 10) without worrying about motor vehicles on the trail.
I really enjoy the trails that exist currently within the community because I don't have to worry about traffic and enjoy seeing other community members out enjoying them too. I like the variety with disc golf, skate park, dog park, upcoming splash park, ice skating and pickleball. Milbank seems to strive to have something for all interests and I appreciate the effort even if I don't utilize everything.
N/A
Resurfacing of Nature Trail
Walk with family,
They give me a quiet and peaceful place to enjoy my runs. But the limited amount of trails hinders any long run days or real variability.

I don't have to walk through neighborhoods. It's quiet and peaceful

Milbank has some unique trails to bike/walk on. The nature trail is a very nice place to exercise without the traffic. Lake farley will be an excellent city park with the addition of the baseball field and other amenities. The baseball field trails is nice for parents during practice or just to run into neighbors and feel a sense of community

Would like to see a bike lane on west Milbank ave

Milbank has a few great walking/biking trails.

I love being outdoors! I walk/ride bike 6-7 days a week weather permitting. I do ride/walk on the streets due to a lot of the sidewalks being broken up. Some streets don't have sidewalks.

Lighted paths at night. Appreciate the trash and dog waste containers.

Feel safe wherever you go

Love being outdoors and enjoy the scenic views of our beautiful town. I'd love the trail north of Diggs Ave. You'd get a little out of town feel on your trail.

I GO ATLEAST 85 MILES WHEN I ESCAPE THAT DARN RETIREMENT HOME BARB LEFT ME IN GOBBLES

Encourages family and friends getting exercise

The Flynn trail is great. While there are sometimes maintenance issues, it is a great option for feeling like nature without having to go into the ag fields. The Pribyl park trail is also very nice and big enough to feel like you can get exercise on it.

The length of the trails.

Being able to go on the high school track anytime.

Wildlife

Wildlife

Wildlife

I like the idea of having more trails that are a safe place for walkers and bicycles. Makes it safer for kids as well.

We need trails and bike lanes to insure safety for bike riders

Disc golf

Our family really appreciates that deliberate attention is being set upon outdoor activities in Milbank. We do wish that there was more cohesion to the current/proposed trails—by this I mean more around- or through-city loops, rather than the small and disjointed systems.

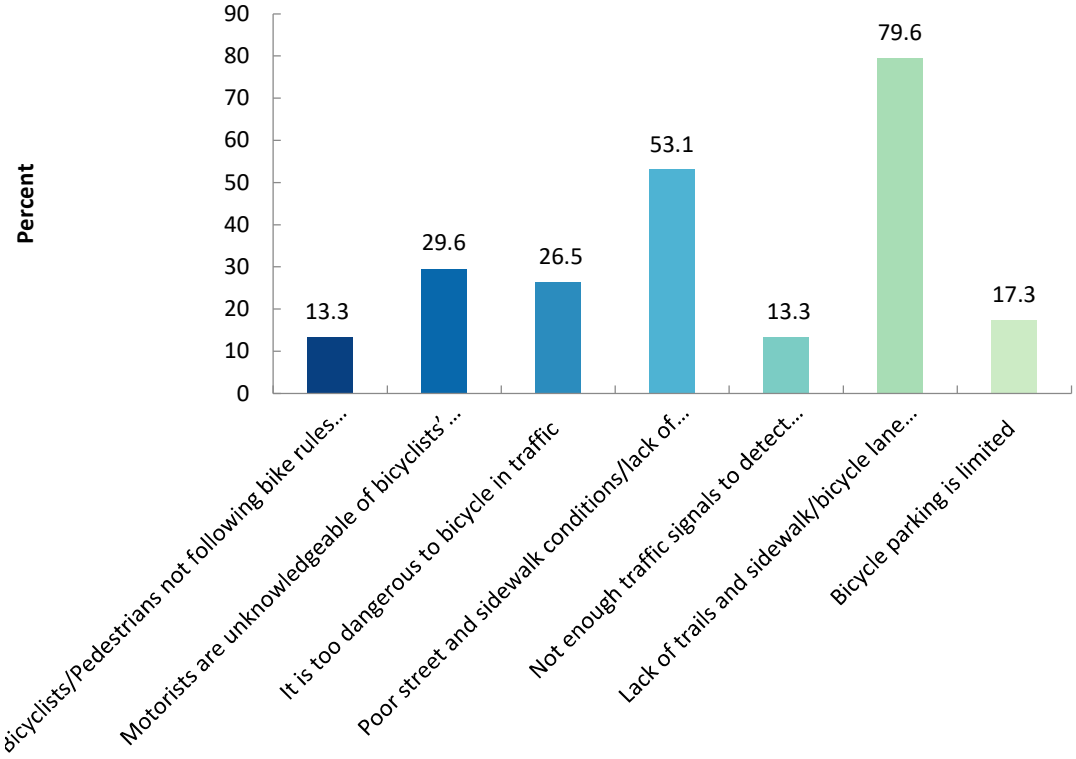
I appreciate that they are available. They have easy access. Easy to get started into and easy to get off.

Lake Farley, great for kayaking

I'd like to see more sidewalks for walking on in neighborhoods! Safer crosswalks for kids near school especially highschool.

Pickleball courts and the development around lake Farley are excellent

14. What do you least like about "active recreation" opportunities in Milbank? (Select all that apply)



15. Describe other things you do not like about "active recreation" opportunities in Milbank.

People who do not leash their dogs on the trails and at the parks.

Automobiles

People that don't leash their dogs.

I think this would be second to having a nicer trail system in Milbank. I think having a trail system helps bring in potential employers and employees with more opportunities for recreation.

I would like the trails cleared off in the winter so there is a safe place to walk.

Not enough trails,live too far from them

I wish the trail east of town was more safe and better maintained. The grass gets really high and I always feel uneasy when walking there by myself. I would love to walk by myself more

Not a trail system, only bits here and there. Sidewalks are incomplete, and in terrible condition

It feels like some if the trails just stop and no clear direction to the next one. If they were intertwined or clear markings to get to the next one would be a good added feature but not a make or break thing.

A dedicated bike trail around town would be neat to see. While the Flynn trail is neat; and going by cemetary and into the South Park is great- it would be nice to have something "dedicated" to Lake Farley

Pet owners not having their dogs on a leash and not picking up their pets' poop on trails, etc.

Lack of emphasis on swimming at L. Farley. Absence of diving tower or water slides at L. Farley.

A few of the disc golf baskets need to be relocated because of the new children's park that was installed at prible, specifically hole 3-4and 9

Need to have a sidewalk on the north side of Unity Square so you don't have to walk in the street in wintertime to get to Casey's. All sidewalks around Unity Square need to be kept clear in the wintertime!!

The current bike path is always overgrown and the asphalt is in poor condition. Also people do not pickup their dog poop off the trail

Paths or side walks have became well worn out with time and need to be replaced or repaired.

Would like a trail that connects the neighborhoods south of highway 12 and east of Lake Farley Park to the park with flashing pedestrian lights that cross the highways. There's no longer a trail going north from Pribyl Park. There are some main roads that do not have trails connecting them such as around the school and the only option is to walk/bike on the road.

Would like to know mileage on the trails. (especially referring to Pribyl Park)

No bathroom facility near trails

.

Our parks have little/no access for pedestrians/runners/bicycles. The streets are poorly lit and sidewalks are so bad and inconsistent, I am forced to walk on the street most of the time, especially before sunrise and after sunset (which is a majority of the year).

A lot of sidewalks are in very poor condition and it works better to use the street..also they are often not cleared in the winter making it impossible to use them. Some streets don't have sidewalks either...

The poor condition of the Finn Flynn trail she needed repair for years now it's almost impossible

Overgrown Flynn trail

place to lock bike up so don't have to walk home.

Stated before

Sidewalks are missing or in poor condition (the map marks "existing sidewalks", where there often aren't sidewalks at all. Trails aren't connected. Street surfaces are in poor condition.

There are only 3 trails available. There are no inclines on any of the trails.

Sidewalks are inconsistent throughout town and existing sidewalks are in poor condition

Our trails do not easily connect. If you want to cross the highway there are only two spots to safely do so (Main Street and the light of 12/15) otherwise you play frogger.

It can be hard to get from one park to another due to poor or no sidewalks. Everyone walks/runs in the street and although it's normal for those who have lived in Milbank for many years it can be dangerous when new community members are unaware of the amount of pedestrian traffic on the streets. It's an accident waiting to happen as Milbank grows.

N/A

A walk bike lane was not installed from Henze Addition to Hwy 12 when the new road was installed a few years ago. This is a frequent path for residents of the area and is not safe.

Just the limited amount in town.

City sidewalks are not good, but replacement is not a burden that should be placed on home owners.

The trails are great, I just wish there was a way to keep the sidewalks and walking trails open in the winter. It's tough to be stuck inside for 7 months out of the year. I know Unity Square is an option, but on the nicer days, some fresh air is needed and most of the trails are under a foot of snow. Also, connecting the current trails together would be great because then the kids could access them all without too much crossing traffic

I like to walk 5 miles/day is weather permits. Our current walking trails are much shorter than that. A long trail without vehicle traffic would be wonderful

Kids riding bike in middle of the street! Cars coming and they (kids) don't move to the side of the road.

Not much for restrooms along the trail. Flynn trail is overgrown and scary to ride in during the peak of summer.

Trail not connecting to make one big loop

Sometimes traffic. Sometimes people are driving so fast on highway 12 by unity that they don't stop for pedestrians. If you do stop you feel like you're going to get rear-ended.

BARB

No sidewalks! It varies so much by block that it is worthless to use the sidewalks. Biking in the street is dangerous due to motorists. And it is safest to teach kids to bike on sidewalks or trails so would be nice if we had them!

Not enough of them

There are a lack of safe walking/biking options for kids. Crosswalks are non-existent near the school and sidewalks are limited near the school, and around the city itself, making it difficult to walk kids to school even though much of town is close enough. Many of the sidewalks that do exist are in poor condition. There is also poor maintenance on all the trails and sidewalk in winter which renders them unusable. It is very difficult to cross Hwy 12 from the south side to the north side of town as Main Street is really the only "safe" spot to do so. The signs/detection lights at other spots are not respected by drivers. Question 4 mentioned cross country skiing - there is nowhere I would do currently do that within Milbank, but I would use it if created.

Lack of sidewalks. Trails and sidewalks not connected.

Some roads are pretty broke up with no shoulders

Limited by trails.

Love the Flynn trail but don't like that it's not kept trim along the trail.

Not enough trails

None

Again, it's that the trail system is really a system of little, sporadically placed trails that are connected by haphazard street routes.

It would be better if there was more connectivity from one path to the next and to get a longer trail. I maybe also an not aware of what is already available. So Maybe more in the newspaper advertising/information of the trails. Also maybe a map/sign posted at each trail showing the location of the others.

Would like more walking trails, kayak launch at Farley, how about a trail to walk around the lake? I feel the lake is a great asset to Milbank

Not many sidewalks or crosswalks for children walking from school. Or general walking around town.

Trails around town are great for getting somewhere but no extended riding opportunities for exercise are quite limited

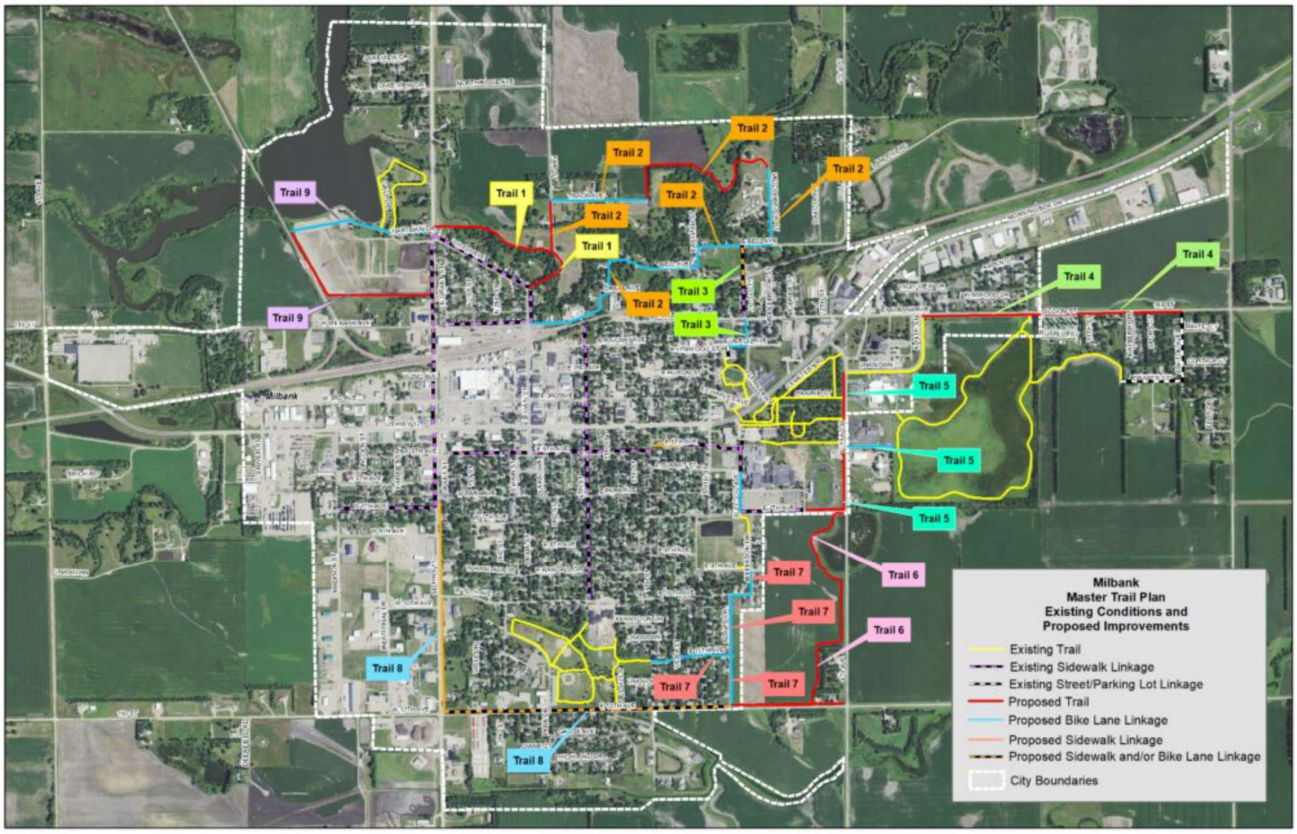
16. **What improvements to the existing trail/pedestrian sidewalk/bicycle corridors are most important to encourage more biking and walking in Milbank? (Rank 1 to 8 with 1 being the most important)**

Item	Overall Rank
New trails	1
More connections between existing trails	2
Maintenance	3
New sidewalk/bicycle Corridors	4
Safety	5
Adequate lighting	6
Widening of existing trails	7
More traffic signals to detect bicycles/pedestrians	8

17. **Rank your preferred choices for funding new trails and pedestrian corridors in the City. (Rank 1 to 5 with 1 being most preferred)**

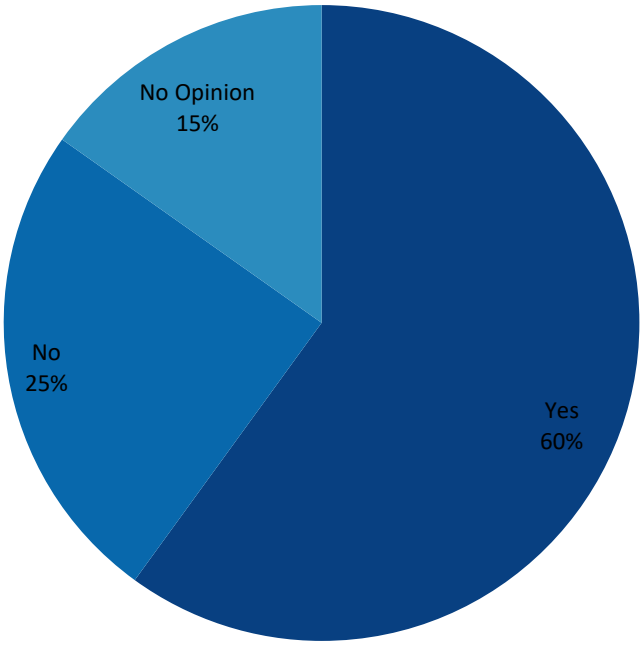
Item	Overall Rank
Grants	1
Annual line item in City budget	2
Private funding	3
City bond issue	4
Dedication during subdivision	5

18. This picture shows suggested trails/trail linkages necessary to complete the Milbank Trail Network. Please prioritize the trails/trail linkages from 1 to 9 with 1 being the most important to complete.

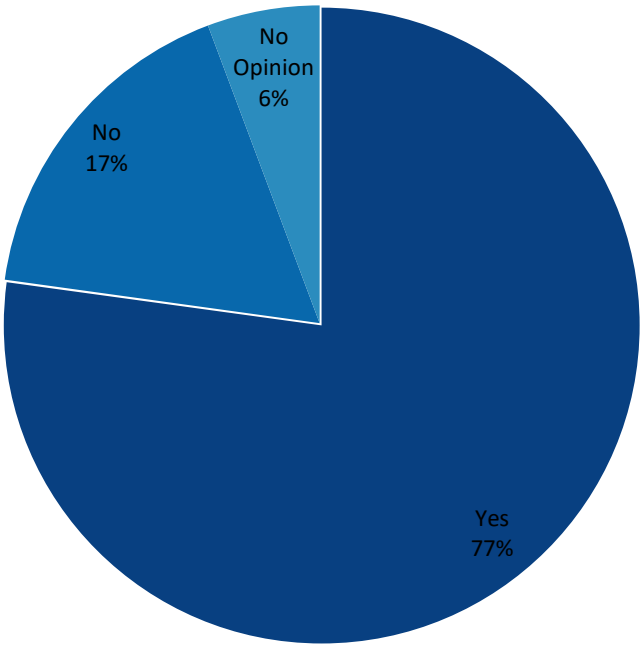


Item	Overall Rank
Trail 7	1
Trail 6	2
Trail 5	3
Trail 1	4
Trail 2	5
Trail 8	6
Trail 3	7
Trail 4	8
Trail 9	9

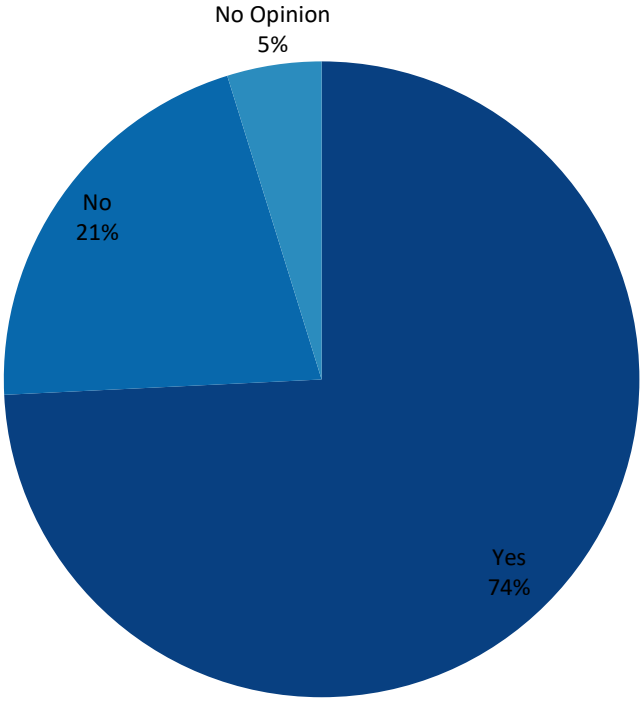
19. Would you use this facility (Sidewalk Bike Lane)?



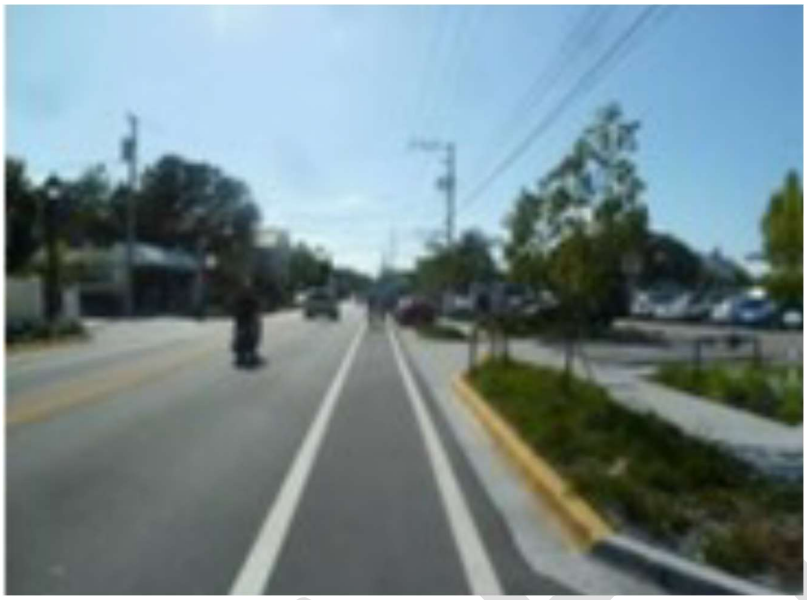
20. Would you use this facility (Buffered Bike Lane)?

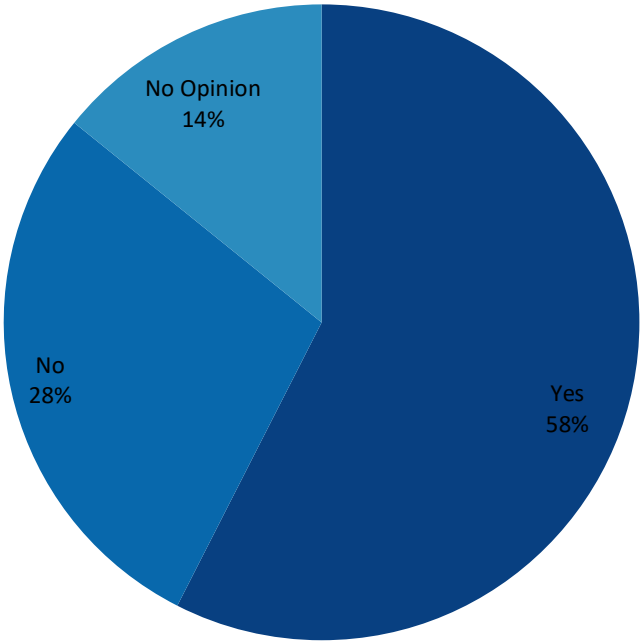


21. Would you use this facility (Shared Lane Marking)?

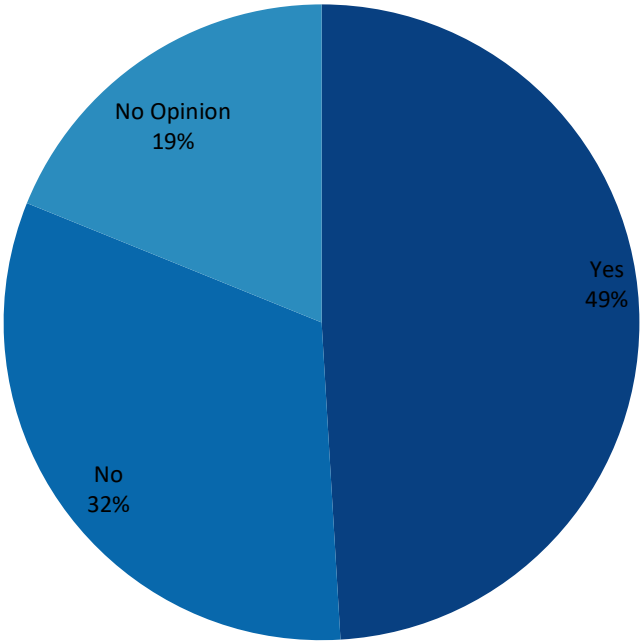


22. Would you use this facility (Right Side Inflow Bike Lane)?

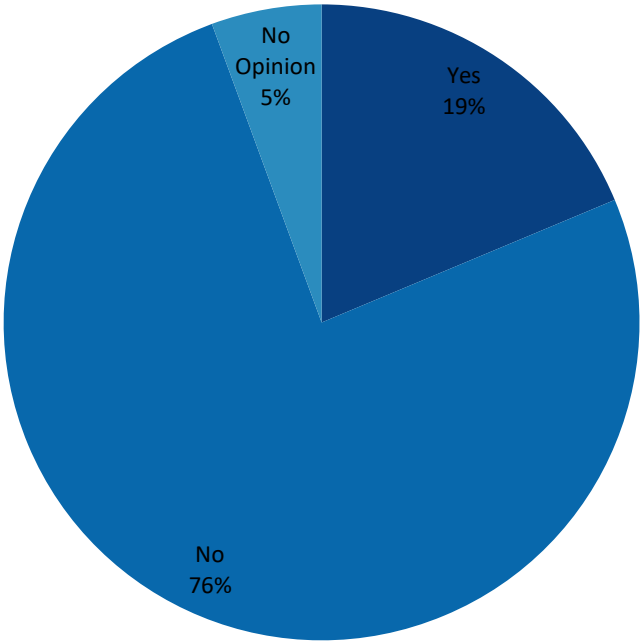




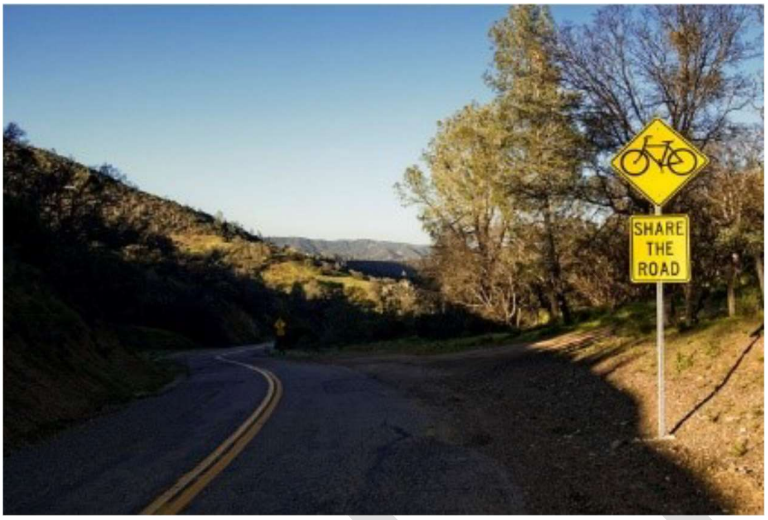
23. Would you use this facility (Left Side Contraflow Bike Lane)?

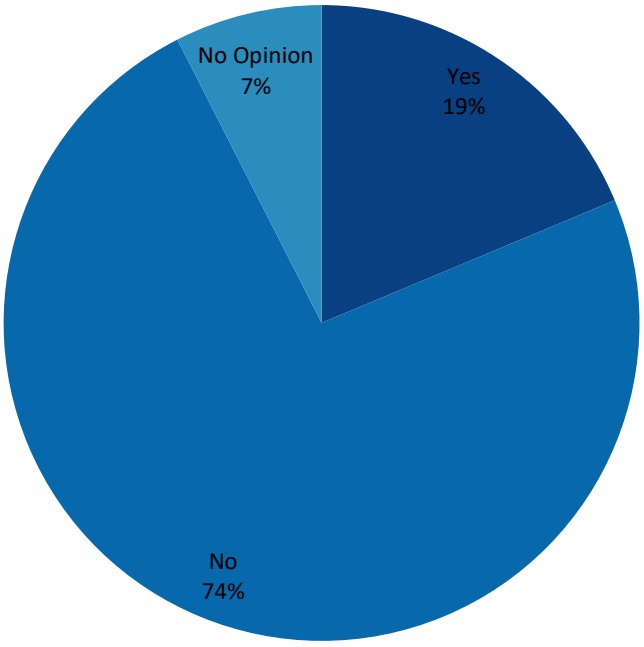


24.Would you use this facility (Road No Shoulder)?

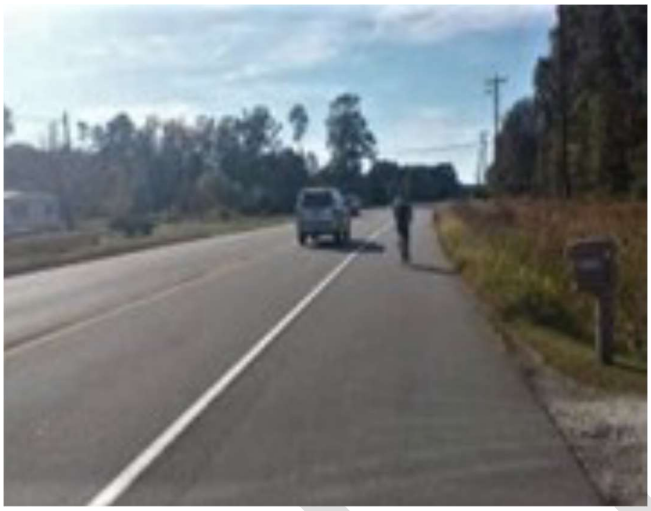


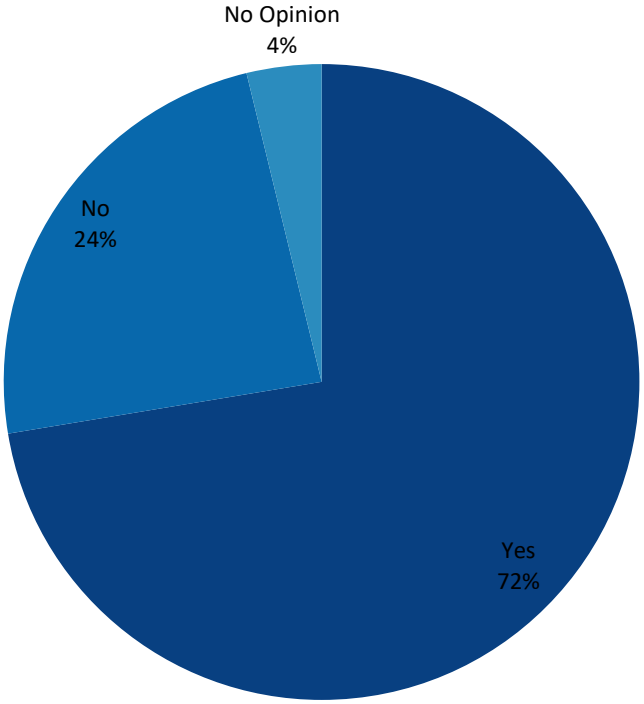
25 .Would you use this facility (Road No Shoulder But Signed)?



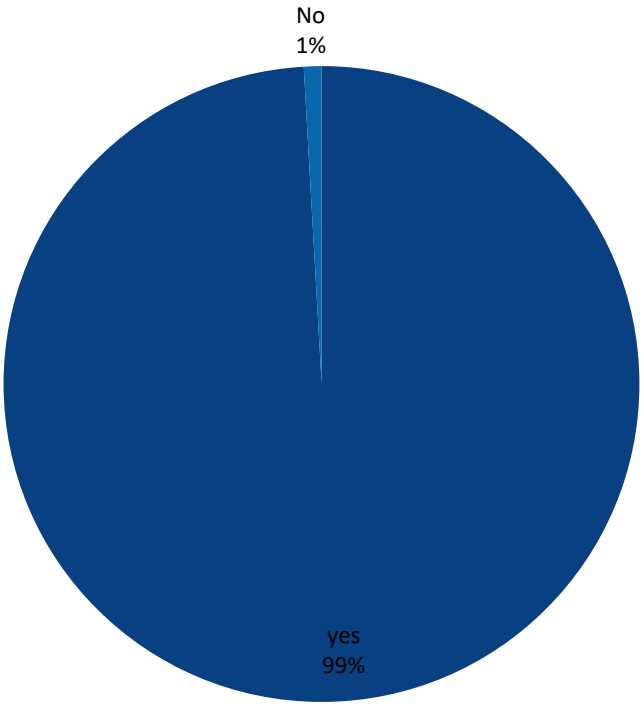


26.Would you use this facility (Highway with Wide Shoulder)?

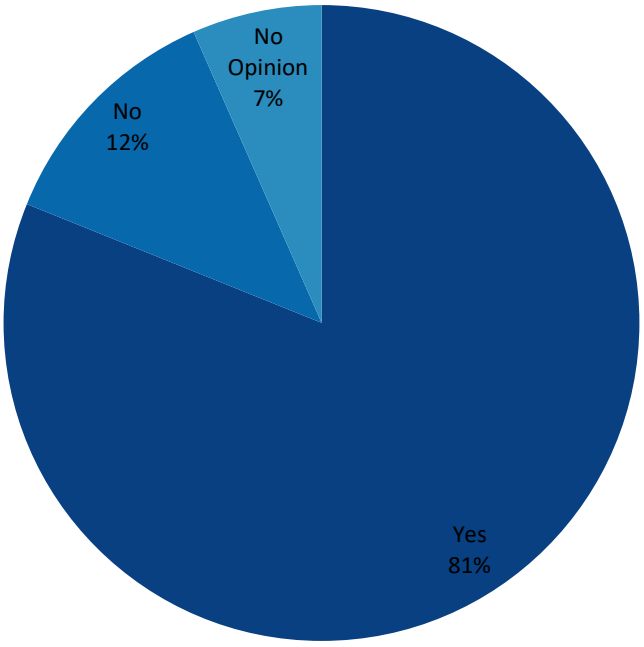




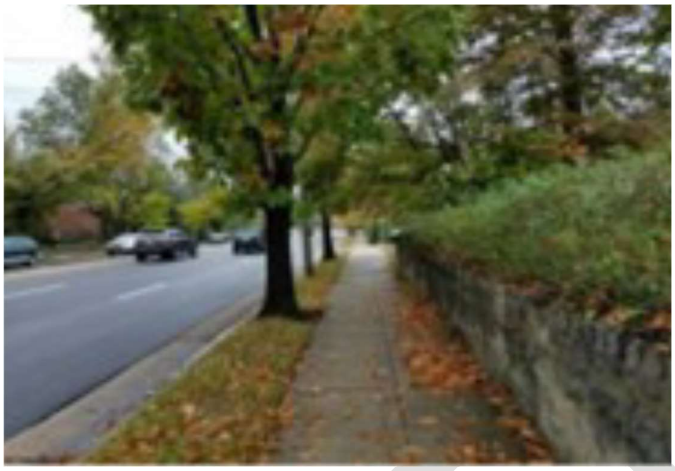
27. Would you use this facility (Paved Trail)?

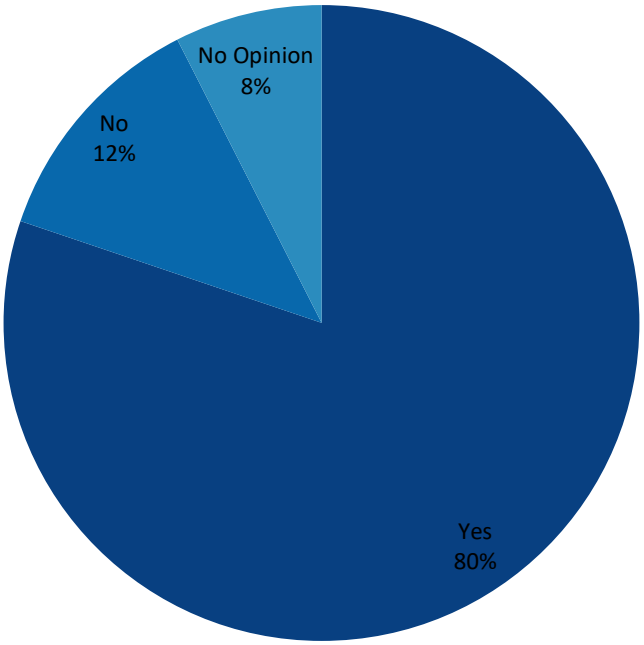


28.Would you use this facility (Unpaved Trail)?

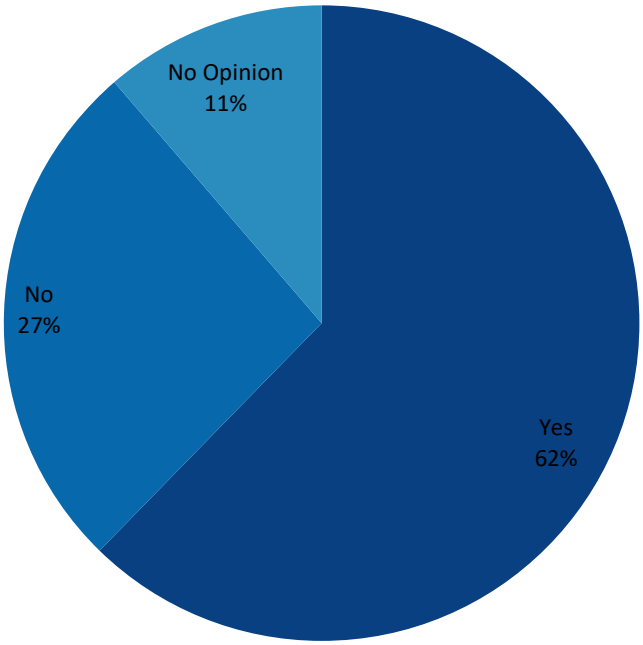


29. Would you use this facility (Sidewalk with Boulevard)?

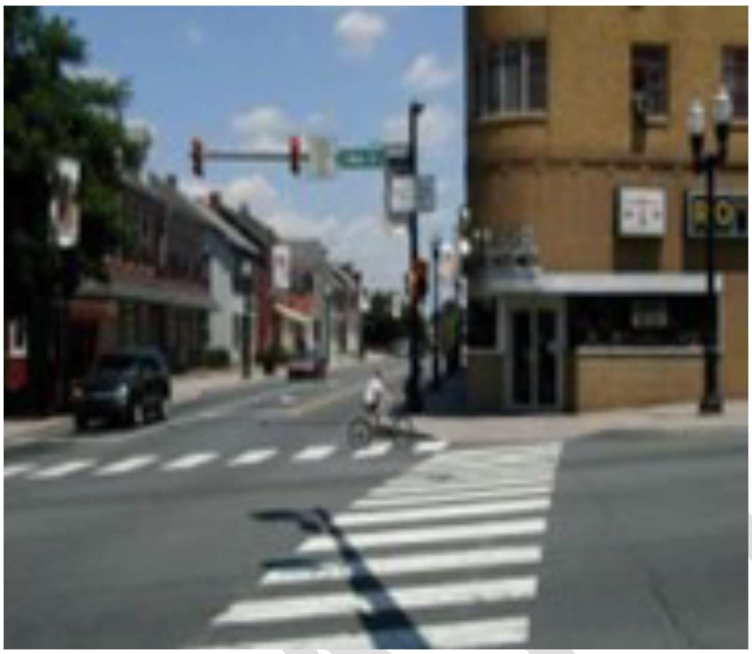


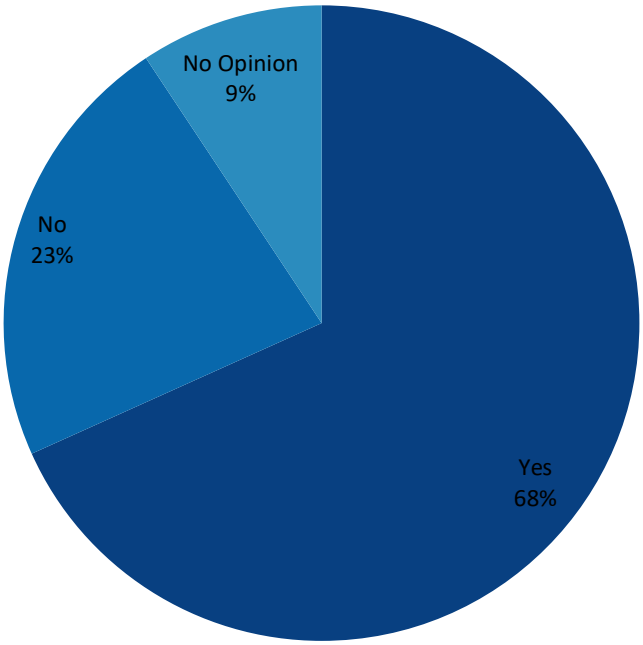


30. Would you use this facility (Sidewalk with no Boulevard)?

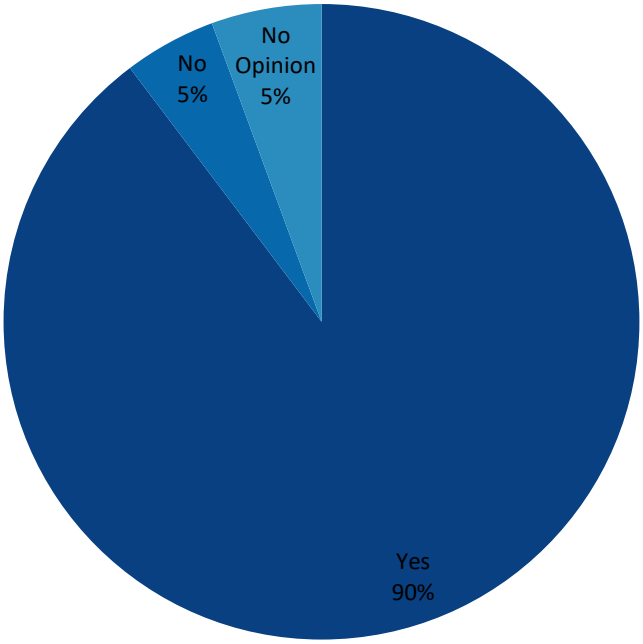


31. Would you use this facility (Crosswalk with no Signage)?

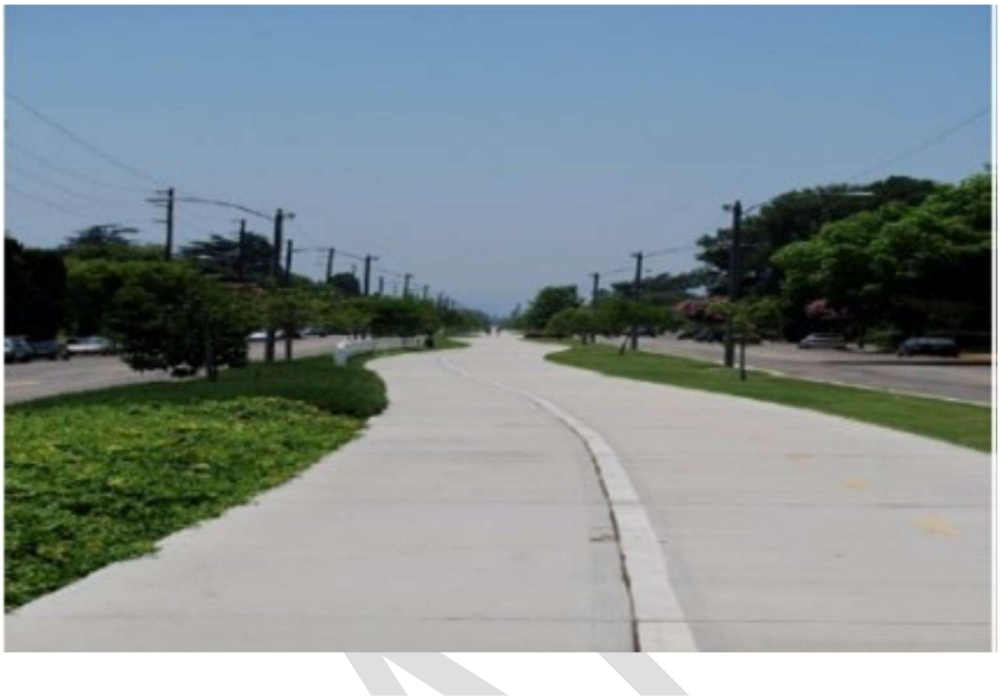


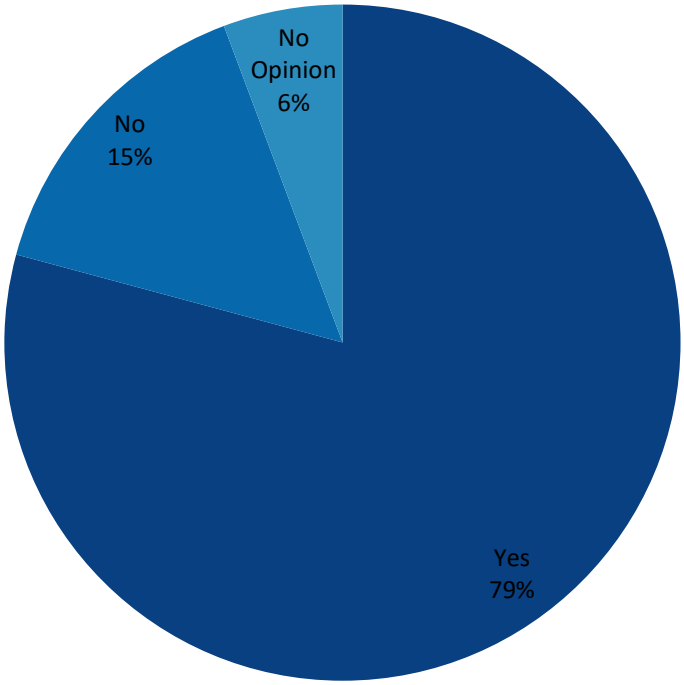


33.Would you use this facility (Crosswalk with Signage)?



33. Would you use this facility (2-way Trail Down Median)?

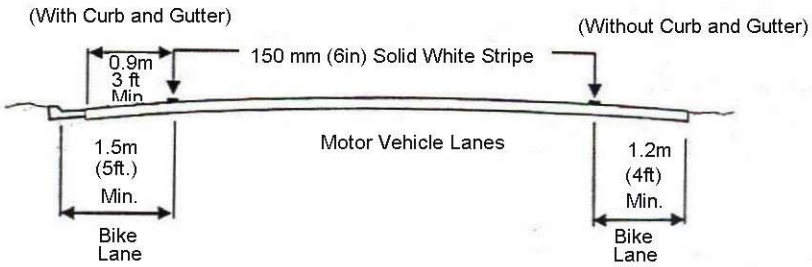




Appendix C
Design Standards

Shoulder Bikeway/Bicycle Lanes

Typical Bike Lane Cross Section

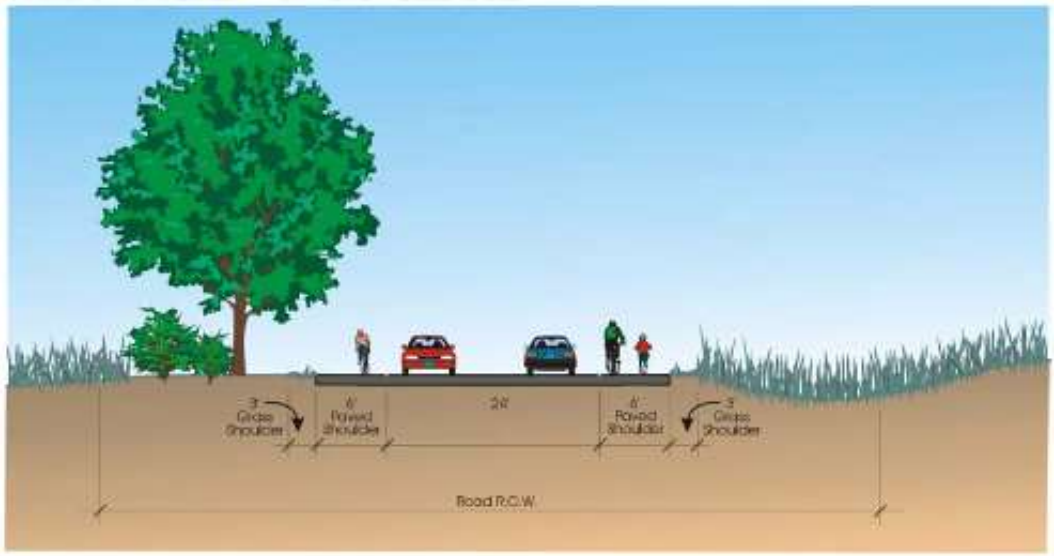


MINIMUM WIDTHS FOR BICYCLE LANES

ROAD TYPE	MINIMUM BIKE LANE WIDTH
No curb/gutter – No parking	5 feet
No curb/gutter – Parking allowed	5 feet
With curb/gutter – No parking	5 feet
With curb and gutter – Parking allowed	5 feet

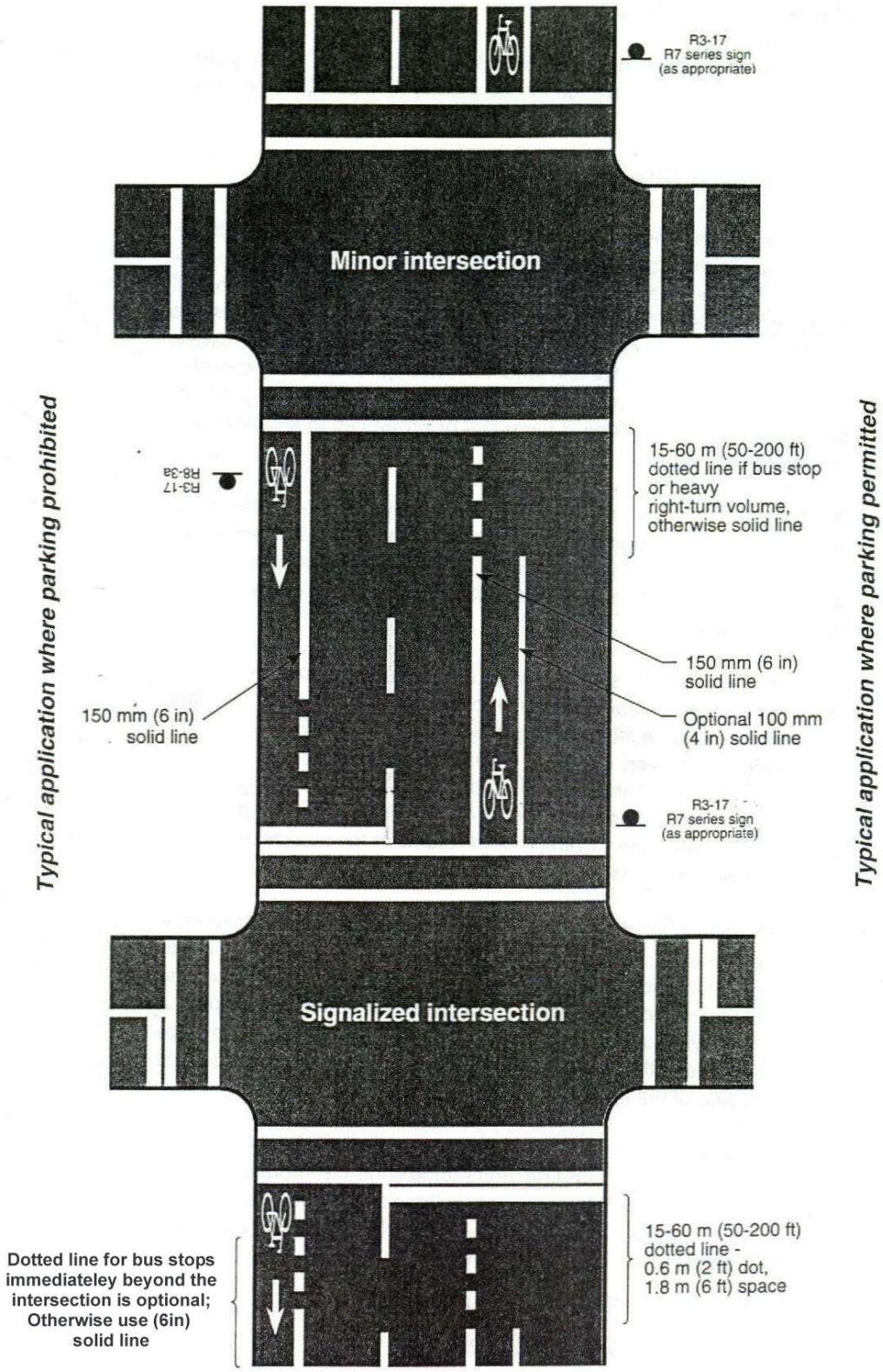
MINIMUM WIDTHS FOR SHOULDER BIKEWAY

Average Daily Traffic	**< 400**	**400-2,000**	**> 2,000**
Width	**5’**	**6’**	**8’**

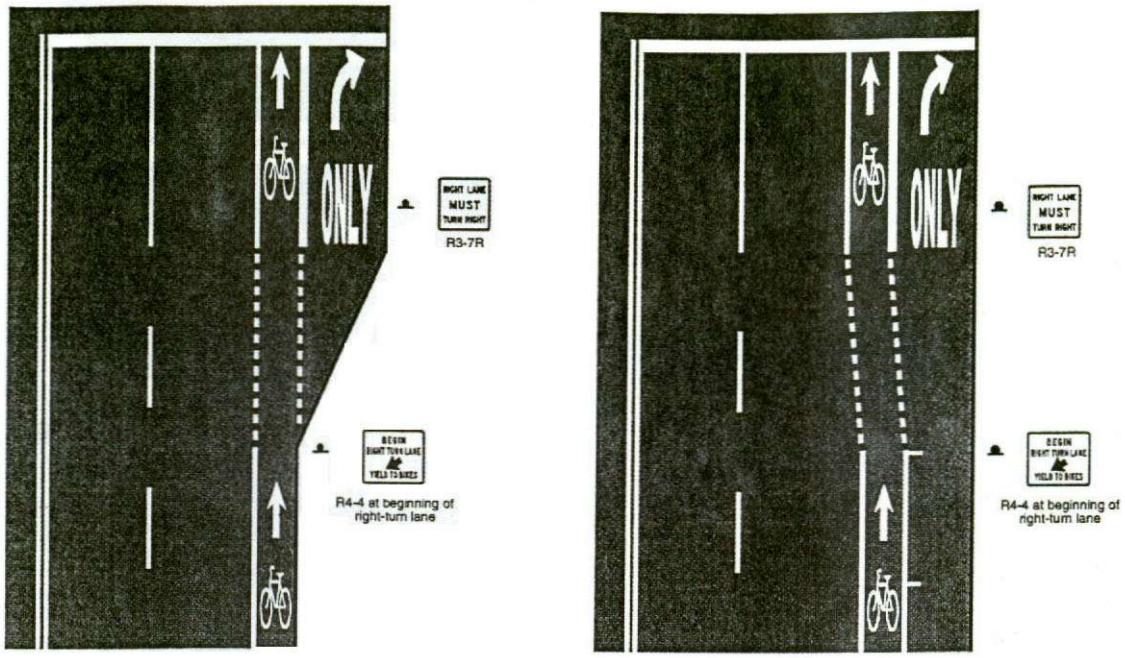


Noteworthy standards

- Bike lanes should be one-way facilities and carry bike traffic in the same direction as motor vehicles.
- Bike lanes should be delineated from motor vehicle travel lanes with a minimum 6-inch solid white line.
- If there is a parking lane an additional 4-inch solid white line can be placed between the parking lane and bike lane.
- Drainage grates should be bicycle safe.
- Raised pavement markings and raised barriers should not be used to delineate bicycle lanes.
- Never place bike lane between parking lane and the curb
    - Bike lanes between parking lane and curb can create obstacles for bicyclist from opening car doors and poor visibility at intersections and driveways and they prohibit bicyclists from making left turns
- Bike lanes are officially designated to create an exclusive or preferential travel lane for bicyclists with the following markings:
    - An 8 inches white stripe; and
    - Bicycle symbol and directional arrow stencils. Where a bike lane is next to parking, parking should be defined by parking space markings or a solid 4 inches stripe. Optional NO PARKING signs (R7-9 and R7-9a) may be installed if problems with parked cars occur; in many jurisdictions, painting curbs yellow indicates that parking is prohibited. Where the bike lane ends, sign OBW1-9 may be used where cyclists enter the motor vehicle travel lanes.
- Stencils should be placed after most intersections; this alerts drivers and bicyclists entering the roadway of the exclusive nature of the bike lanes. Stencils should be placed after every intersection where a parking lane is placed between the bike lane and the curb.
- A normal 4 inches wide fog line stripe is used on shoulder bikeways.



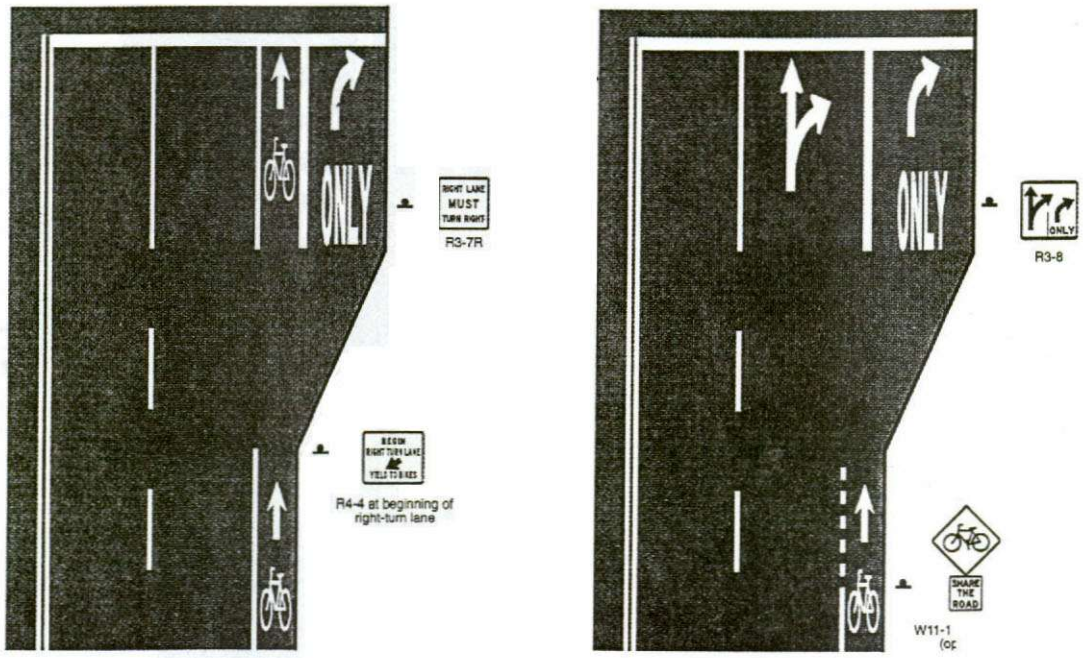
Typical Pavement Markings for Bike Lane On Two-way Street



a. Right-turn-only lane

b. Parking lane into right-turn-only lane

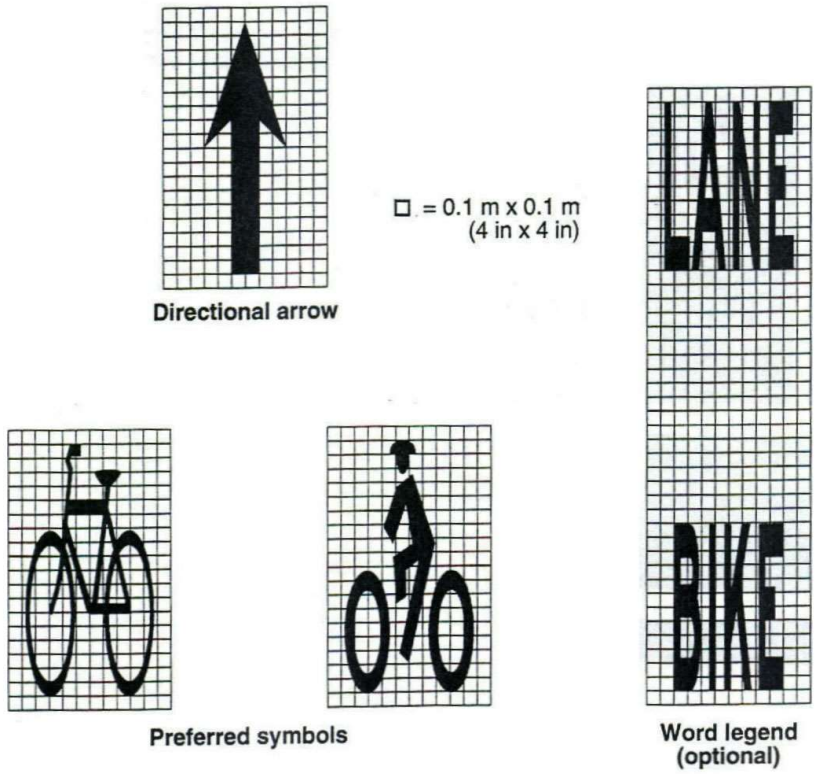
NOTE: The dotted lines in cases "a" and "b" are optional (see case "c".)



c. Right-turn-only lane

d. Optional right/straight and right-turn-only l

Bike Lanes Approaching Right-Turn-Only Lanes

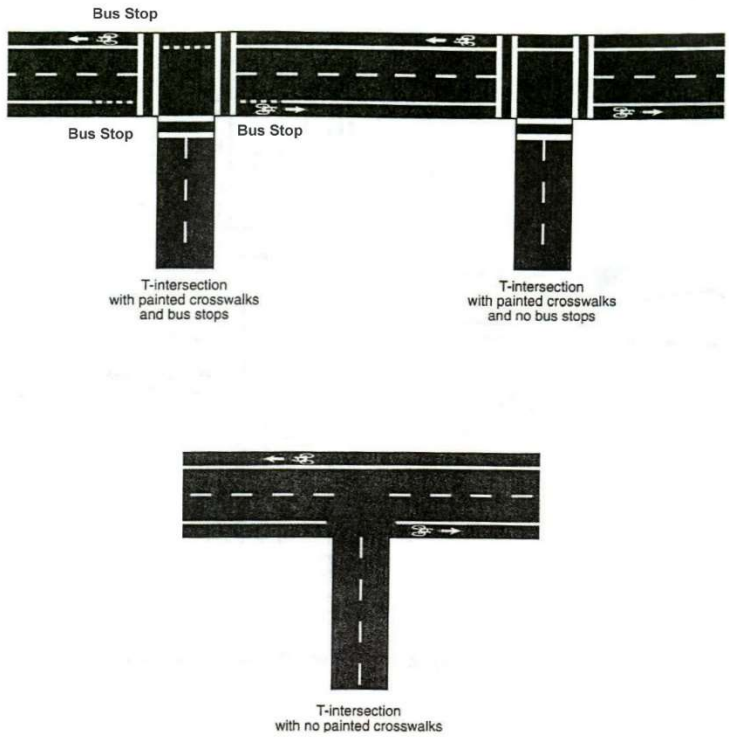


Typical Bike lane Symbols

Street Crossings

Bike lanes should be striped to a marked crosswalk or a point where turning vehicles would normally cross them. Bike lanes are not normally striped through intersections; however, it may be appropriate to do so where extra guidance is needed; in this case, they may be marked with 8 inches wide dotted lines, to guide bicyclists through a long undefined area or to alert turning motorists of the presence of bicycle traffic.

Trails should cross public streets at intersections, in the same place a crosswalk would normally be placed. If there is no intersection within 200 feet of the proposed trail crossing, an at-grade trail crossing, including median break, may be considered. The City will make the determination as to whether a trail crossing a roadway can be safely achieved. Traffic volumes, times of day, travel speed, sight lines to and at the intersection, and problems unique to the crossing or intersections will be used in making the determination. Where an intersection with pedestrian crossing exists within 200 feet of where a trail is proposed, pavement, barriers, and landscape features with appropriate signage will be installed to guide trail users to the intersection. Where an intersection with pedestrian crossing exists within 200 feet of where a trail is proposed, pavement, barriers, and landscape features with appropriate signage will be installed to guide trail users to the intersection.



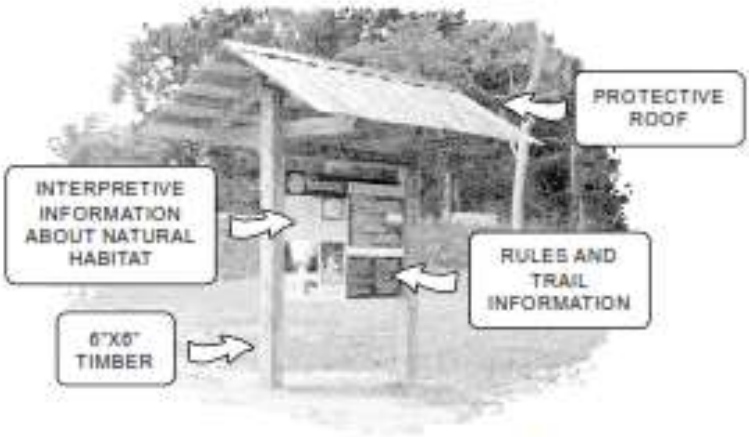
Typical Bike lane Stiping at T-intersections

Trailheads

Trailheads should occur where roads intersect trails and a suitable pull-out or curb cut can be attained, especially in rural areas. Some trailheads may consist of little more than a safe parking space or two, and appropriate signage which may include the length and trail difficulty.

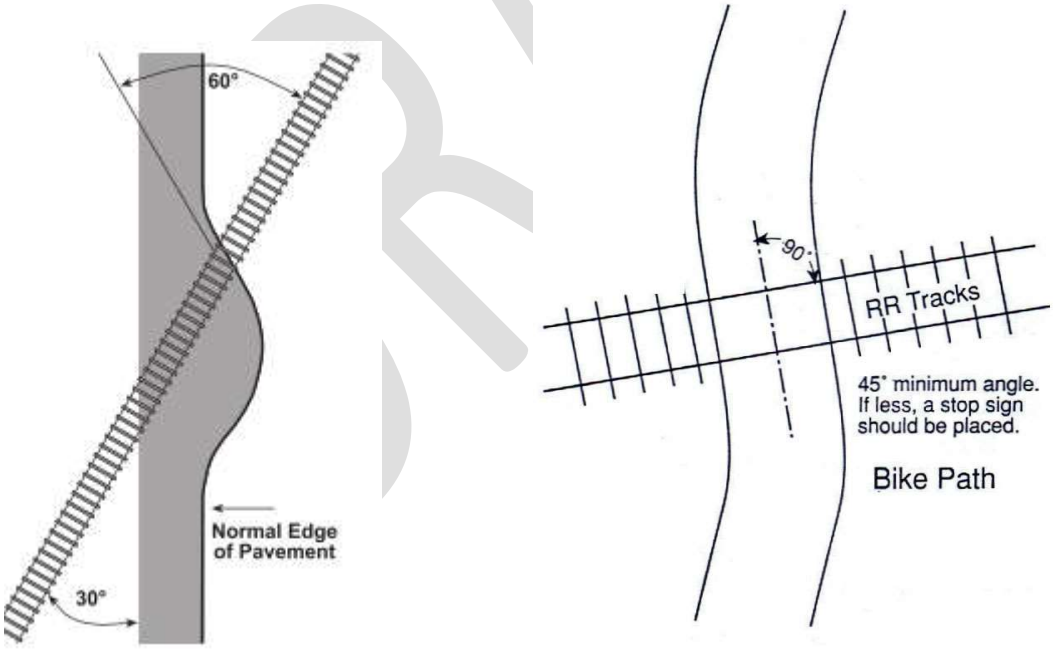
Important trailheads should include the following information on the trail sign: a map of the trail, destination and distances, permitted uses, regulations and rules including but not limited to keeping dogs on a leash, no smoking, high fire danger, and how to handle emergencies, information on hazards in the area, trail conditions, trail difficulty, hours of use, and access for the disabled. The sign may also contain interpretive information. In addition to information about mileage, the sign may include information such as whether it is a loop trail or shaded trail. Trailhead signage should generally be designed as shown below.

Where greater use is expected, additional improvements can be provided**.** In addition to automobile parking, a staging area may provide horse trailer and bicycle parking, restrooms, trash receptacles, drinking fountains, trailhead signs and maps.



TYPICAL TRAILHEAD SIGN

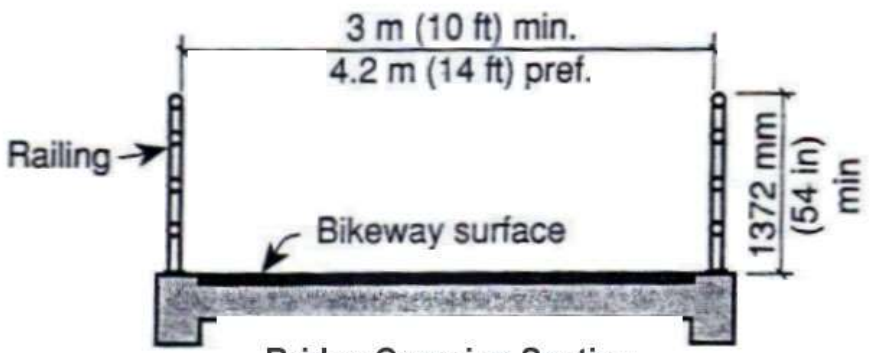
Railroad Crossing Angle The risk of a fall is kept to a minimum where the roadway (or bikeway portion of the roadway) crosses the tracks at 90°. If the skew angle is less than 45°, an additional paved shoulder of sufficient width should be provided to permit the bicyclist to cross the track at a safer angle. Special attention should be given to the bikeway alignment to improve the angle of approach, preferably to 60° or greater, so cyclists can avoid catching their wheels in the flange and losing their balance.



Trail Railroad Crossing

Bridges – If it is impossible to provide an independent bicycle bridge, one option is to retrofit a bicycle path on one side of an existing highway bridge. This should be done where:

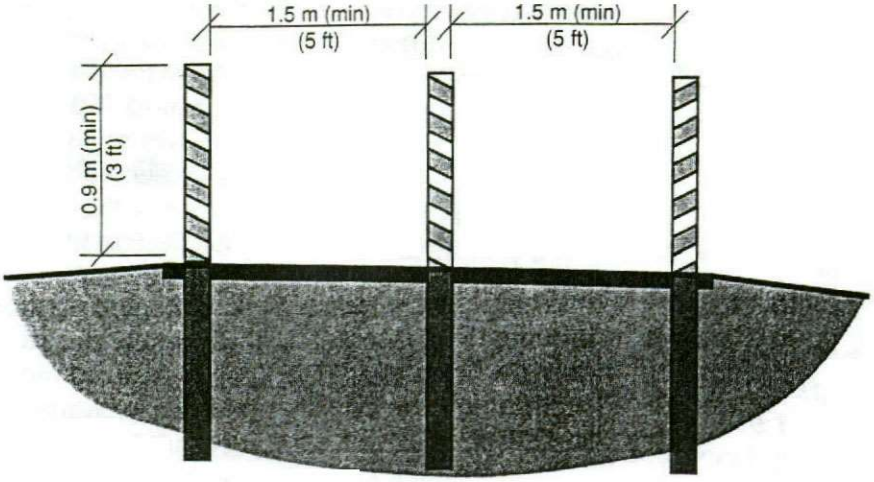
- The bridge facility will connect to a trail at both ends;
- Sufficient width exists on one side of the bridge or can be obtained by either widening or restriping lanes;
- Provisions are made to physically separate bicycle traffic from motor vehicle traffic.



Bridge Crossing Section

Undercrossings - should be 14 feet wide or more. The standard overhead clearance of under-crossings is 10 feet; an 8-foot minimum may be allowable with good horizontal and vertical clearance, so users approaching the structure can see through to the other end. Undercrossings should be visually open for users' personal security and comfort. Illumination is needed in areas of poor visibility, when the undercrossing is long and for nighttime comfort.

Motor Vehicle Barriers – Trails may need some form of physical barrier at road intersections to prevent unauthorized motor vehicles from using the facilities. Posts or bollards should be set back beyond the clear zone on the crossing road or be of a breakaway design. The post should be permanently reflectorized for nighttime visibility and painted a bright color for improved daytime visibility.



Reflectorized post barrier used to keep vehicles off trails

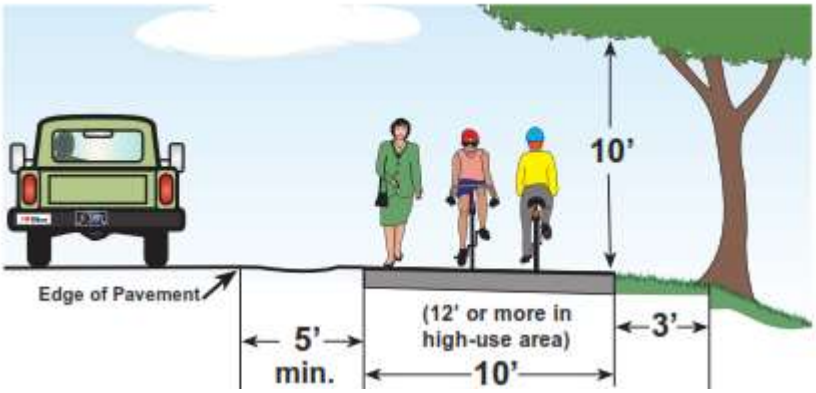
<u>Multi-use Trails</u>

Multi-use trails are facilities on exclusive right-of-way or easement land with minimal cross flow by motor vehicles. Shared use paths are sometimes referred to as trails. Users are non-motorized and may include but are not limited to bicyclists, walkers, roller skaters, wheelchair users, and pedestrians, to including – walkers, runners, people with baby strollers, people walking dogs, etc.

Multi-use trails can serve a variety of purposes. They can provide users with a shortcut through a residential neighborhood, or they can provide an enjoyable recreational opportunity. Shared use paths can be located along rivers, lakes, active and inactive railroad and utility and street rights-of-way.

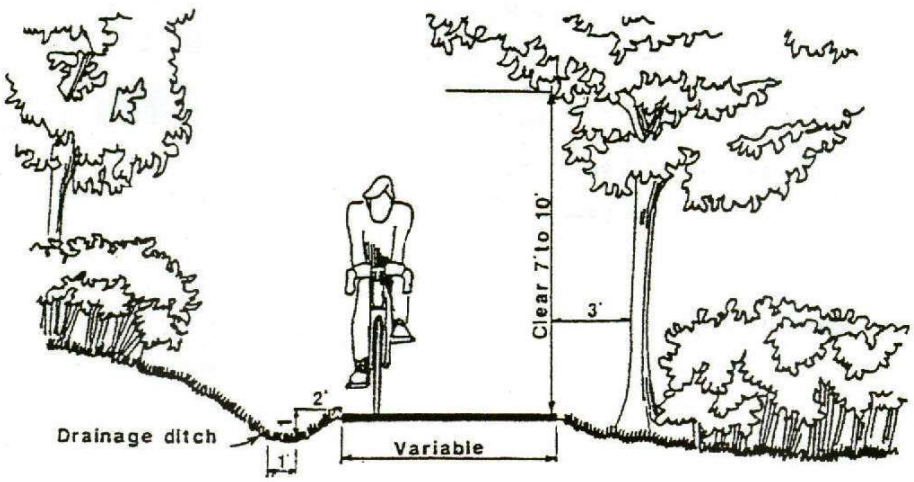
Multi-use trails should be thought of as a complementary system of off-road transportation routes for bicyclists and others that serve as a necessary extension to the roadway network. Multi-use trails should not be used to preclude on-road bicycle facilities, but rather to supplement a system of on-road bike lanes, paved shoulders and widened sidewalks.

Suggested Shared use Path Dimensions



Recommended paved width for two-directional shared use path is **10 feet**.

- A reduced width of 8 feet can be adequate if.
  - Bicycle traffic is expected to be low;
  - Pedestrian use of the facility is not expected to be more than occasional;
  - There will be good horizontal and vertical alignment providing safe and frequent passing opportunities.
- Clearing – Any vegetation, except grasses, should be cleared a minimum of 3' from the edge of the trail surfacing. Overhead clearance should be maintained for a 10'minimum. All dead branches and trunks should be removed from above the trail. All vegetation, including roots, on the sub grade should be removed.
- Drainage – Drainage should be handled to prevent washouts, and to avoid ground saturation beneath the trail. The trail should be sloped to provide runoff, and ditches should be provided where necessary. Underdrains may be necessary in very wet places to prevent frost action with resultant heaving.

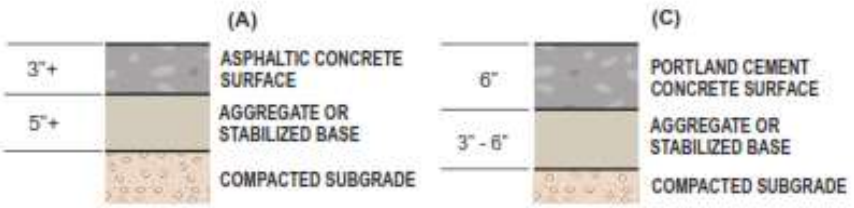


Typical Section Showing Clearing and Drainage

- Bases - Bases and subbases need to be adequately prepared to protect the surface. Removal of topsoil, stumps and roots and compaction of subgrade will normally be adequate. In wet or otherwise poor conditions, crushed stone or slag may be necessary for stability. General specifications for sidewalks, light-duty roads or driveways will generally be applicable

- Pavement Sections - Multi-use paths should be designed with sufficient structural depth for the subgrade soil type and to support maintenance and emergency vehicles. A good rule of thumb is to use the typical pavement section recommended for local streets in a given environment. The pavement structures below 7-6 are just examples; each path must be individually designed to meet the local geological and meteorological conditions.

Sample Pavement Designs



- Grades – Grades on shared use paths should be kept to a minimum, especially on long inclines. Grades greater than 5 percent are desirable because the ascents are difficult for many bicyclists to climb. On some shared use paths, where terrain dictates, designers may need to exceed the 5 percent grade recommendation for some short sections. As a general guide, the following grade restrictions and grade lengths are suggested. Signage should be provided that alerts users to maximum percent of grade.

5-6%	for up to 800 feet
7%	for up to 400 feet
8%	for up to 300 feet
9%	for up to 200 feet
10%	for up to 100 feet
11+%	for up to 50 feet

- Site Distances – The sight distance to any hazard or potential hazard must be a minimum of 50 feet at 10 mph that allow four seconds to react to any obstacle or hazard. If this sight distance cannot be provided, warning signs must be posted.

Sidewalk Trail

A wide sidewalk along a street is considered as a type of trail but should be specifically identified separately, as the intersection conflicts create a potentially dangerous situation for the bicyclist and pedestrian. Sidewalk trails are typically 8- to 10-foot-wide sidewalks that will provide accommodations for bicyclists on the sidewalk. This facility can be safe when the roadway has significant volumes and speed, very little additional outside lane width, and very few intersection cross streets and driveways. Because drivers have difficultly seeing bicyclists on the sidewalk, this option is considered a last resort.

Design Considerations

Sidewalk Trails should comply with American Association of Street and Highway Transportation Officials (AASHTO) standards, the Uniform Federal Accessibility Standards, and the Americans with Disabilities Act Accessibility Guidelines.

Surface:

Asphalt provides an excellent surface when new and is somewhat less expensive than concrete. Concrete provides a more durable, longer-lived surface, particularly in climates with freeze-thaw cycles, and can be replaced panel by panel if necessary.

A stable subbase is critical to the durability of both materials. This is especially important around drainageways, where stream banks tend to slough off and produce serious cracking and deterioration.

Sidewalk

All sidewalks are to be a minimum of 4 feet wide and shall be constructed in accordance with City specifications and ADA standards. No sidewalk should be located closer than three feet to either the edge of pavement or curbline of any street unless otherwise approved by the City Administrator.

Signage

As new trails are completed, signs should be installed along the major corridors of the trail system with information on direction, safety and trail policy. Specific locations of signs will be evaluated on a case-by-case basis during the initial trail design.

Minor access points along a trail should have signs that provide general information, such as mileage, directions and warning signs. Trail signs may also include small scale location maps and the city logo. All signs should be designed and built with high quality materials that will be vandal resistant and weatherproof. All signs should be consistent through the city-wide trail system and complement the existing sign system.

Appropriate warning signs should be installed to detail hazards, limited sight distance or where the slope exceeds the recommended standard or where the trail width or vertical clearance is less than the recommended standard. Signs identifying private property should be installed to ensure that the trail user does not trespass on private property.

- Warning signs indicating to motorists that bicyclists and pedestrians should be anticipated and to cyclists/pedestrians that motor vehicles may be encountered should be installed on the approaches to point of potential conflict and at high activity areas. Included are:
    - Points where a trail crosses a roadway, driveway or sidewalk.
    - At trail starts and terminations or transition areas involving potential conflict movements.
    - At intense activity areas such as the vicinity of parks, schools, recreational facilities and community centers.
- Motorist directed warning signs on urban streets should be place at least a half block in advance of the conflict point, and in all circumstances, such signing whether directed to motorists or cyclists should be placed sufficiently in advance of the conflict point to permit appropriate perception and reaction. Additional cyclist-directed warning signs might be installed as required to warn cyclists of the specific hazardous conditions.
- Pavement markings at a crossing should accomplish two things: Channel path users to cross at a clearly defined location and provide a clear message to motorists that this particular section of the road must be shared with other users.
- For the path user, stop signs, stop bar pavement markings, yield signs; caution signs or other devises should be used as applicable.
- For the roadway user, a clear message must be presented in a location where the user will see it. i.e., bicycle crossing sign, pedestrian crossing sign, “Zebra-style” or colorized pavement crosswalks.
- The effective viewing distance of shared path signs is between 20 and 150 feet and effective text size is 3 to 6 inches.
- Trail stop signs should measure 18 x 18 inches, yield signs should be 24 x 24 inches, and regulatory signs should be 12 by 18 inches, as required by the MUTCD.
- Place post mounted signs at least 2 feet off the trail.
- Signs should be raised between 4 and 5 feet off the ground.
- Place non-traffic-oriented signs, such as information boards at least 4 feet off the sides of the path.
- For a bicyclist traveling 20 mph, the viewing distance for stop signs should be between 100 and 125 feet.

- To prepare riders or pedestrians, warning signs should be placed 125 to 150 feet in both directions from the conditions they address. Where the path intersects with roads, stop signs should be visible from at least 200 feet.

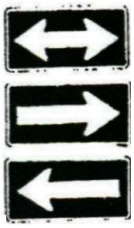
MOTOR VEHICLE DIRECTED AND WARNING SIGNS

Black on Yellow Background

BIKE ROUTE DESIGNATION SIGNS (White on green Background)

Message Plates

To be mounted above the official marker to designate the beginning and ending if the bike route, and to trailblaze that bikeway.



Directional Plates

To be mounted below the official market to guide cyclists along the bikeway and to trailblaze the bikeway.

Typical bikeway Signing

CYCLIST DIRECTED WARNING SIGNS
(Black on yellow background)

Typical Bikeway Signing

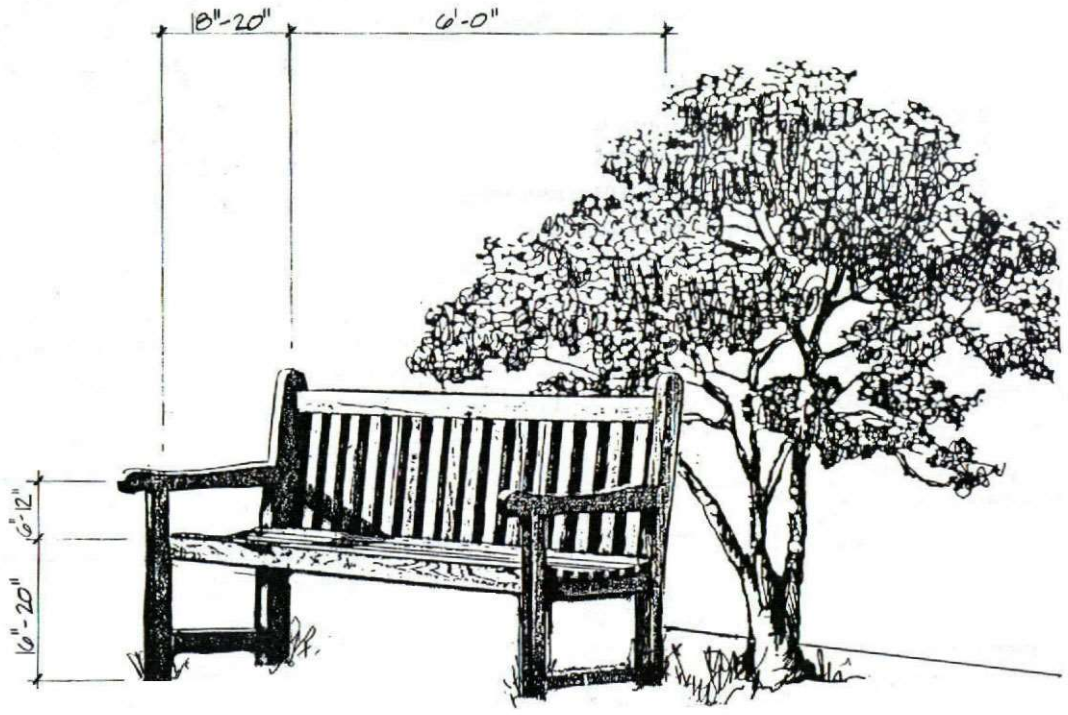
Trail Support Facilities

Trail support facilities are important part of the public investment in trails. Bicycle racks, rest stations with drinking water, lighting, automobile parking, and directional guidance should be designed into trails projects.

The types of facilities a specific trail will need – and their placement along the trail, depend on several factors: the setting and proposed uses of the trail, the trail's intensity of use, the level of servicing or maintenance that the facilities need, and the utility or infrastructure requirements of the facilities.

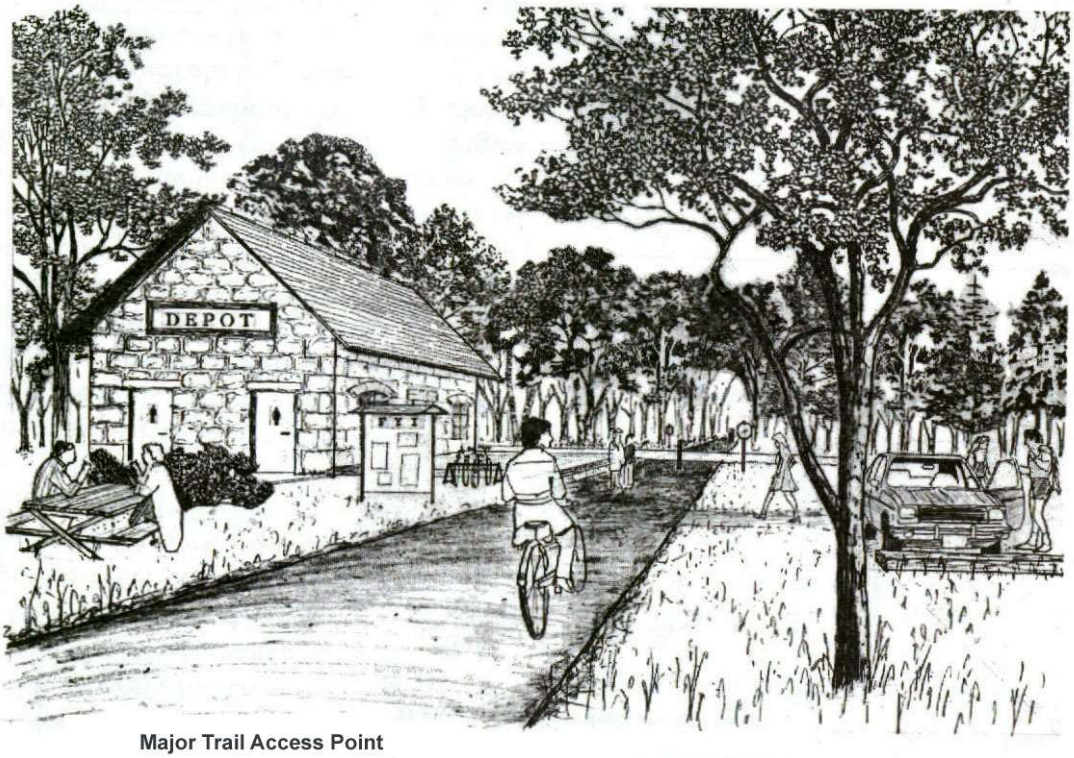
It is best if trail amenities can be grouped together. Grouping makes them recognizable from a distance and saves space along the trails edge. Clustering complex features such as restrooms, drinking fountains, and telephones also minimize construction costs.

It is prudent to consider minor and major "rest stops." Minor ones include sitting areas, shade shelters, picnic areas, and informational or interpretive signs. These facilities are the least complicated to locate and accommodate.



Bench dimensions.

Major rest-stop facilities will likely include restrooms, a drinking fountain, a phone, a recycling drop-off point and possibly even vending machines. Major rest stops should be located near more heavily used access points.



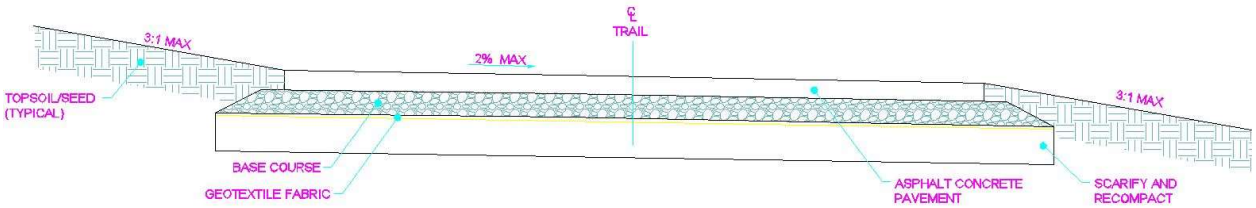
Major Trail Access Point

Regarding the lighting of trails, cost is probably the biggest perceived barrier to the implementation of lighting on trails. Since funding for bicycle and pedestrian improvements is limited and funding specifically for trails can be even harder to obtain, it was determined that the plan would not include a recommendation to provide lighting of trails.

Appendix D
Cost Estimate Template

Preliminary Construction Cost Summary per 100 LF for Bike Trail Projects

Job Description:	
Job No:	
Date:	*September 12, 2012*



Input Information

Trail Information			**Unit Costs**		
Trail Length	*100*	feet	Hot Mix Asphalt	*$85.00*	per Ton
Trail Width [1]	*10*	feet	P.C.C. Pavement	*$5.50*	per SF
Hot-Mix Asphalt Depth	*4*	inches	Base Course	*$13.00*	per Ton
P.C.C. Pavement Depth	*0*	inches	Unclassified Excavation	*$5.00*	per CY
Base Course\Cusion Depth	*4*	inches	Undercut Backfill [2]	*$10.00*	per Ton
Undercut Depth	*0*	inches	Scarify and Recompact	*$3.00*	per SY
Scarify and Recompact	*1*	(No=0; Yes=1)	Geotextile Fabric	*$3.50*	per SY
Geotextile Fabric	*1*	(No=0; Yes=1)		*$0.00*	per SF
	0	(No=0; Yes=1)		*$0.00*	per LF
	0	(No=0; Yes=1)		*$0.00*	per LF
	0	(No=0; Yes=1)		*$0.00*	per LF
	0	(No=0; Yes=1)		*$0.00*	per Each
				$0.00	per Each
				$0.00	per Each
				$0.00	per Each

Output Information

Cost Breakdown

	Quantity	Unit	Cost
Mobilization	1	Lump Sum	$300
Hot-Mix Asphalt	25	Ton	$2,125
P.C.C. Pavement	0	SF	$0
Base Course	30	Ton	$400
Unclassified Excavation	30	CY	$200
Undercut Backfill	0	Ton	$0
Scarify and Recompact	133	SY	$399
Geotextile Fabric	133	SY	$500

Cost Summary	$3,924
x 5% [3]	$200
	$4,124

Additional Items

Opinion of Engineer Probable Cost Estimate =	**$4,124**
Probable Costs per Lineal Foot =	$41.24
Probable Costs per Square Foot =	$4.12

Notes:

[1] *Trail width can be 8-ft or 10-ft.*

[2] *Undercut backfill material is from an off-site borrow source.*

[3] *The 5% covers items, such as, topsoil placement, traffic control, testing and any other incidentals not broken out separately.*

REFERENCES

North Carolina Bicycle Facilities Planning and Design Guidelines, January 1994.

1995 Oregon Bicycle and Pedestrian Plan, 1995.

Oregon Bicycle and Pedestrian Design Guide, 2011

Goodhue County Transportation Plan 2004 – 2025, June 2004

Implementing Bicycle Improvements at the Local Level, Publication No. FHWA-RD-98-105, US Department of Transportation, September 1998.

Bicycle Plan, City of Sioux Falls, 1994 2023.

Sioux Falls MPO Multi-Use Trail Study, 2011

Trails for the 21st Century: Planning, Design, and Management Manual for Multi-Use Paths, Karen-Lee Ryan, 1993.

Arizona Bicycle Facilities Planning and Design Guidelines, AZDOT, 1998.

Guide for the development of Bicycle Facilities, American Association of State Highway and Transportation Officials, 2012

Urban Bikeway Design Guide, National Association of City Transportation Officials