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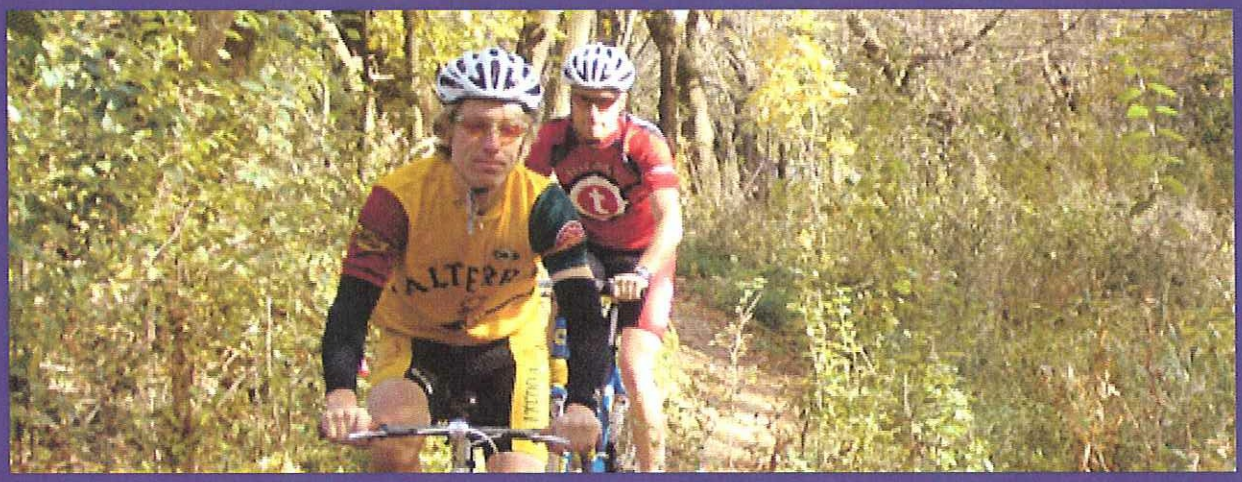
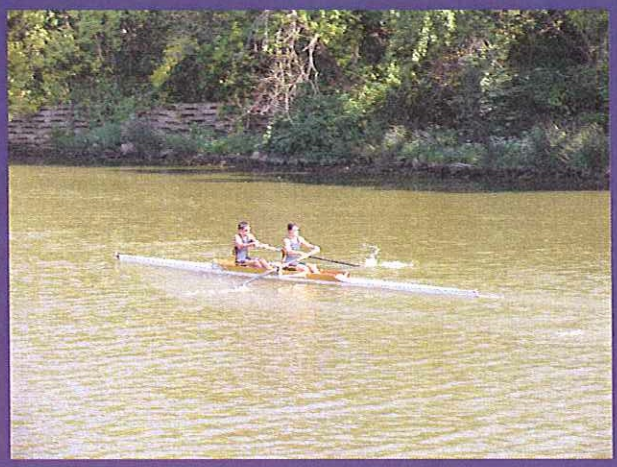
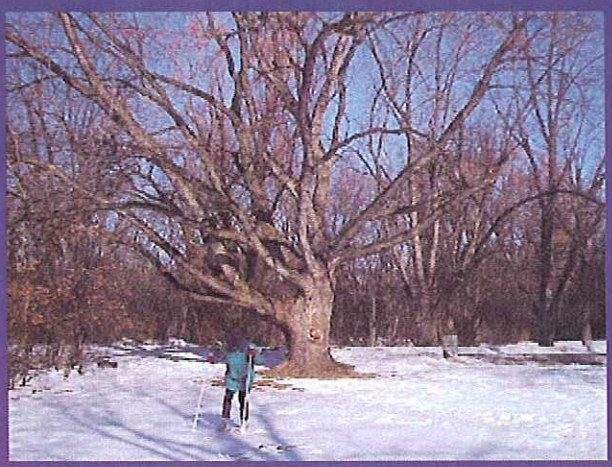
TRAILS NETWORK PLAN







Milwaukee County Dept. of Parks, Recreation, and Culture

Milwaukee County Trails Network Plan
2007

Milwaukee County Dept. of Parks, Recreation, and Culture
9480 Watertown Plank Road
Wauwatosa, WI 53226
www.countyparks.com

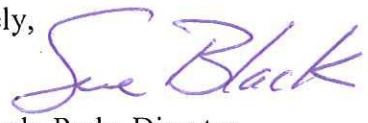
Foreword

Welcome to the trails of the Milwaukee County Parks System! I always say that I like parks, but I love trails. The residents and visitors of Milwaukee County have many trails to be proud of. The 108-mile Oak Leaf Recreation Trail encompasses the whole county and is very popular with bicyclists, in-line skaters, runners, walkers, and hikers. The Alpha Mountain Bike Trail, which opened in 2004, provides mountain bike riding in the Whitnall Park and Crystal Ridge area. The Seven Bridges Hiking Trail in Grant Park is a beautiful environmental corridor that is steeped in rich history with 1930's CCC crews. The trails at Jacobus Park and the Wehr Nature Center provide an educational experience with interpretive signs detailing the local biodiversity.

The following trails plan describes the current trail systems within Milwaukee County. It also details trails that are being developed as well as future proposed trails or initiatives. This plan is a living document and it will be updated every one to two years. The newly formed Milwaukee County Parks Trails Council (2005) will review this plan. It is my goal to make the trails we have even better and continue to develop new trails that will accommodate as many users as possible. There are many opportunities out there to convert abandoned railroad beds and utility corridors into trails. Many of our parks could use designated nature paths or exercise paths.

The environment, economy, and health benefits make the designation and upkeep of our trails an important quality of life issue for all Milwaukee County citizens. Please use this document to learn more about our current successes and the future potential of our trail system and join me in continuing support for this very important element of our Milwaukee County Parks System.

Sincerely,



Sue Black, Parks Director

Milwaukee County Dept. of Parks, Recreation, and Culture

Acknowledgements

Milwaukee County Executive, Scott Walker
Milwaukee County Board of Supervisors
Milwaukee County Parks Director, Sue Black

James Keegan, Chief of Planning, Policy, and Development
Shawn Schmidt, Partnership and Policy Development Manager (Former)
Chuck Ward, Chief of Operations
Greg High, Director of Architecture and Engineering Section (DPW)
Karl Stave, Resident Contract Manager of Architecture and Engineering Section (DPW)

Planning Division Staff
Kevin Haley, Landscape Architect
Mike Raap, Landscape Architect
Jim Ciha, Landscape Architect
Laurie Albano, Landscape Architect
Bill Waldron, Natural Resource Specialist
Paul Kortebein, Natural Areas Manager
Guy Smith, Deputy Regional Manager
Angelina D'Amico, Office Assistant

The Bicycle Federation of Wisconsin
Metro Mountain Bikers
Milwaukee County Trails Council

Trail Network Plan Subcommittee:
Marty Weigel
Jack Hirt
Guy Smith

Executive Summary

The Milwaukee County Department of Parks, Recreation, and Culture has had a longstanding tradition of providing a wide variety of recreational, educational, and environmental opportunities for its residents and visitors. Trail development and infrastructure is no exception to this tradition. In recent years, there has been an increased emphasis and effort on improving and expanding the trails program. The Milwaukee County Trail Network Plan will serve as a tool to continue this legacy into the future.

This plan provides a glimpse of the existing trail inventory within the Milwaukee County Emerald necklace of parks, parkways, and urban waterways. The plan goes on to state the goals and objectives to improve and maintain the current trail infrastructure. The corridor types and selection guidelines for future trail development are outlined within the plan as well. Text within the document, as well as the Trail Network Map, describe the future development of bike trails, hiking trails, snowmobile trails, multiple use trails, and so on. By creating such a plan, the Parks Department can move ahead and systematically plan, create, and expand the multi-faceted trail system countywide.

It will become obvious that the importance of the intergovernmental cooperation is imperative. The tireless and tremendous efforts of other partners such as non-profit organizations, private businesses, and volunteers are also paramount to the success of this plan and to the trails program in general.

Please note that this plan is not intended to be final, rather it is a living document. This plan will be updated every few years to provide for completed projects, for future development, and for future trends and demand.

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Introduction

In 2005, the Milwaukee County Board of Supervisors and County Executive Scott Walker appointed **The Milwaukee County Trails Council** to act as an advisory committee to the Department of Parks, Recreation, and Culture for long-term planning, policy recommendations, and identifying user needs. Membership of the council includes representatives from Wisconsin Department of Transportation, Department of Natural Resources, City of Milwaukee, the Bicycle Federation of Wisconsin, Metro Mountain Bikers, Milwaukee County Parks, The Park People, National Park Service, Milwaukee County Office for Persons with Disabilities, County Board, citizen volunteers, and others. For a complete list of officers and council members refer to Appendix B. All Trails Council meetings are open to the public. Typically, meetings are held once every two months.

One of the first tasks assigned to the Council was to facilitate the creation of a planning document for all of Milwaukee County Park's trails. The following document contains information necessary for improvement and maintenance of all trails to satisfy the needs of the increasing number of users.

Background

The *Milwaukee County Trails Network Plan* clearly states Milwaukee County Park System's responsibilities and mission in providing, maintaining, and creating trails. Milwaukee County works closely with Federal Land Management Agencies such as the National Park Service, the Wisconsin Department of Natural Resources, the Wisconsin Department of Transportation, the City of Milwaukee, and 18 other municipalities within the Milwaukee County.

The Milwaukee County Park System trails network includes the Oak Leaf Trail, which is a paved multiple use trail. The trail consists of 52 miles of paved off-road paths, 31 miles of parkway drives, and on municipal streets. These 25 miles of trail on the municipal streets are intended to be relocated to off-road paths in the near future. The Oak Leaf Trail currently connects to Waukesha County, and it is the intent for this Park System to connect to the Ozaukee County Interurban Trail and to connect to Racine County.

Other county trails of interest include the Seven Bridges Trail in Grant Park. In the early 1900's, Fredrick C. Wulff, the first Superintendent of Horticulture for the Park System, developed paths, which served as the foundation of the Seven Bridges Trail. In the 1930's over 200 Civilian Conservation Corps (CCC) workers constructed retaining walls, created stone paths, and stone staircases. After several years the trails began to decline, however in 1995-96, five young members of the Wisconsin Conservation Corps, trained by Park Maintenance staff, reconstructed damaged parts of the trail. This crew rebuilt staircases and 6 bridges, added railings and signs, and remodeled the overnight lodge. In

2006, the Milwaukee Conservation Leadership Corps began restoration of ravines within the trail system.

Milwaukee County Parks also have a series of fitness stations. These stations are located along trails in the following parks: Greenfield, Lake, Hoyt, Pulaski-Milwaukee, Veterans, Warnimont, and West Milwaukee.

The Alpha Mountain-Bike Trail provides a 3-mile stretch of single-track trail from the Winter Sports area of Whitnall Park and connects to the Crystal Ridge area of the Root River Parkway.

Another trail of interest is the Oak Leaf Birding Trail. This trail follows along the Oak Leaf Trail and is host to over 35 prime birding locations in the Milwaukee County Parks and Parkways.

Currently, there are approximately 30 official nature and hiking trails within Milwaukee County Parks. There are hundreds of miles of trails within our Park System that have not been mapped or officially designated. It is one goal of this plan to map, designate, re-route when necessary, and provide adequate signage for these trails. It is also desirable to create more trail connections for the Oak Leaf Trail System.

Purpose

This plan identifies the countywide network of trails and provides guidance to the Milwaukee County Park System leadership and staff for effectively using its funding sources for land acquisition and development. Maps in this plan detail the potential trail network within the park system and the tables provide information on trails segments.

The Milwaukee County Trails Network Plan:

- Identifies trail corridors for potential development including active and inactive rail lines, utility corridors, natural features, and other linear trails.

- Provides guidance for the County Parks and other entities for trail development and funding future land acquisitions.

- Develops budget guidelines for creating a sustainable maintenance plan.

- Builds on partnerships between Milwaukee County and various state, federal, and local units of government, nonprofit organizations, and volunteer groups.

- Encourages partners to consider connections between recreational trails and roadway routes to provide a comprehensive and seamless system for bicyclists traveling from home to employment, commercial, and recreational facilities.

- Solicited public input via meetings and a survey including questions specific for identifying user needs. A copy of the survey and full results can be found in Appendix F.

What is a Trail?

A trail within the Milwaukee County Parks Department can include everything from a 10 foot wide paved multi-use path to a 1-foot wide footpath in the woods. The Parks Department attempts to accommodate as many different users as possible including bicyclists, runners, hikers, walkers, birders, mountain bikers, cross country skiers, snowmobilers, paddlers, and people with disabilities. Milwaukee County Parks will comply with all the American Disabilities Act (ADA) requirements and with the American Association of State Highway and Transportation Officials Standards (AASHTO).

Trails are generally located within a corridor. Corridors are a tract of land that forms a passageway from one place to another. Trail corridors may link existing trails, public lands, harbor modes of transportation, utilities, natural features, and connect our communities together. Trail segment locations within these corridors will change over time, as some opportunities arise, others may be lost and changes in land use may influence trail segments. For example, it is unlikely that all the railroad corridors identified in this plan will ever be abandoned or available for trail use. It will be necessary to continually review and update the plan. If one corridor becomes available, another similar or parallel corridor may no longer be necessary and can be removed from an updated version of this plan. Due to the uncertainty of future rail abandonment it is important to list all corridors that could link to the countywide network.

Trails permitted through current Milwaukee County policy included in this plan are all non-motorized use with snowmobiles being the only exception. Since many trails are not suitable for every use, certain designations are made.

Relationship to Other Plans

State and Municipal Plans

This plan focuses primarily on the Milwaukee County Park System, however we recognize the planning activities of the DNR, SEWRPC, the City of Milwaukee, WisDOT, and municipalities in developing trail systems. We look to all of these agencies in providing citizens the opportunities to recreate and commute safely.

The Milwaukee County Park and Open Space Place Plan from 1992 is now being reviewed and updated. Trails are one of the many topics addressed. The Park and Open Space plan shall refer to the Trails Network Plan for guidance on developing trails.

The Benefits of Trails

Environmental and Aesthetic Benefits

Today, with environmental and health concerns at an all time high, it becomes apparent why trails are so vital. Many of our trail corridors provide habitat for wildlife and plants. Trails allow access to individuals of all backgrounds and income levels to enjoy nature, get some exercise, and even contribute to spiritual and mental health. Many trail users commute to work on bicycle, thereby improving the air quality.

Economic Benefits

Trail users will frequent bike shops, athletic stores, restaurants, taverns, and many other businesses especially near trails. Those businesses that cater to the various trail users will benefit. Local hotels, gas stations, and other businesses will benefit from tourists visiting the area to recreate on nearby trails and parks. The presence of trails often increases the value of properties adjacent to the corridors especially residential neighborhoods. Quality of life is an increasingly important factor in attracting and retaining businesses in a community, and trails are important contributors to the quality of life. Corporations bring jobs to communities and help support other businesses. Additionally, health improvement due to outdoor exercise can help control medical costs.

Social Benefits

Trails can create a sense of community and pride. In many cases trails can provide opportunities for multiple uses. Trails serve as a connection between parkways, communities, natural areas, and businesses. A well-planned trail provides a real sense of continuity and community.

Health Benefits

Trails provide pleasant places for people to walk run, bicycle, ski, skate, or do other exercises, all of which help control weight, blood pressure and cholesterol levels, builds strength and endurance, and help prevent osteoporosis, diabetes and depression.

Transportation Benefits

The addition of trails to the current transportation systems will increase accessibility for limited access locations. This can aid in commuting, transportation, emergency response, and overall recreation. According to the survey 46% of respondents use Milwaukee County Trails more than 40 times per year for commuting purposes. Commuter trails were identified by 46% of users as extremely important to expand.

Goals and Objectives

The following goals and objectives are general ideas that this plan hopes to use in guiding future trails implementation.

Goal : Develop a comprehensive, high-quality transportation and recreation trail system in Milwaukee County.

Objective: Encourage and support the development of trail/route facilities, both on- and off-street, including new and existing trails, designated bike routes, and the public road system that serves to connect communities and destinations throughout the county.

Objective: Ensure that facilities are well-built and maintained to appropriate standards to accommodate attractive, safe, and efficient travel and recreation.

Objective: Support the development of recreational and transportation trails, and where appropriate, trailheads, signage, parking, visitor amenities, sanitation, and other facilities as necessary.

Objective: Ensure trail facilities are built and maintained using low-impact, low-maintenance design while ensuring safe use.

Objective: Accommodate the mobility-impaired by using universal design guidelines where practicable.

Goal : Evaluate existing and potential corridors

Objective: Identify existing rail corridors with a high potential for abandonment and connectivity.

Objective: Identify existing utility corridors with good connectivity to other trails or significant destinations.

Objective: Identify "Natural Feature" corridors tied to rivers and other scenic landscape patterns, including major topographic features.

Objective: Enhance linkages to existing historical sites, tourist attractions, and other significant features.

Goal : Expand funding and partnering opportunities to improve trail development and maintenance.

Objective: Continue to access grant opportunities by federal and state agencies and explore other possible funding sources.

Objective: Provide staffing, operations funding, and maintenance improvements, 65% of those surveyed strongly agreed with this objective.

Objective: Develop a plan to secure long-term, permanent funding.

Goal: Promote public awareness, support, and enjoyment of trails, facilities, and opportunities.

Objective: Encourage volunteerism, partnerships, and collaboration in developing, enhancing, and maintaining trails and facilities. Nearly 70% of those surveyed answered yes that they were interested in volunteering to help maintain trails.

Objective: Produce trails maps and information in the form of brochures, kiosks, websites, signs, etc.

Corridor Types

When selecting locations to build any type of trail certain criteria should be used to aid in the feasibility of trail development. When considering the cost of land acquisition, the landscape, and overall elevation change; corridors consisting of flat, linear, and single ownership land are ideal. Keep in mind that certain corridors are more suitable than others for certain trail types.

Rail Corridors

It is imperative that Milwaukee County partners with the DNR and WisDOT when dealing with potential rail acquisition. In many cases the DNR has 180 days in which to act *if and when* a rail line is abandoned. Identifying corridors for potential trail development enables the DNR to act more quickly by shortening the process for land acquisition approval. It is desirable for the DNR to acquire these abandoned rail corridors with intent of Milwaukee County to develop, maintain, and manage the trail.

Some trails are created under the "interim trail use" authority. Once rail line abandonment is approved, the federal or state Surface Transportation Board can allow the railroad to negotiate with a public agency for conversion of the corridor for trail use. This process allows the possibility of reversion of the trail back to rail use. The Surface Transportation Board assigns interim use of the corridor to qualified public or private agency if that agency agrees to manage the trail and cover all associated expenses, including taxes and liability.

Another option can be the "rails-with-trails" approach. This involves constructing a multipurpose public pathway beside an active rail line, within the same corridor, designed for safety of all users and acceptable to the railroad.

Utility Corridors

Utility corridors can provide excellent off-road opportunities. Milwaukee County already utilizes some utility corridors and is also considering other potential trail segments along these corridors.

Connectors: Roads or Easements

This plan identifies potential connectors or links to abandoned rail corridors that would be made via road or easement. Whether the DNR, Milwaukee County or another government entity purchases a rail corridor requiring a connector and Milwaukee County gains control of this property, Milwaukee County will take the proper steps to make these connections. Often this requires planning and negotiations with local governments or private citizens to allow a road crossing or easement.

Natural Features Trail Corridors

A natural features trail corridor is a naturally occurring corridor such as along a river or is related to a landscape or major topographic feature.

Water Trails

Milwaukee County Park System is proud to be part of the Milwaukee County Urban Water Trail Project. This project is focusing on providing access, signage, and information for the public on the three rivers of the Milwaukee estuary as well as access to Lake Michigan. There are many people who utilize these waterways, however appropriate signage, safety information, and water access is drastically needed.

There are many partners in supporting Milwaukee's water trails: Friends of Milwaukee's Rivers, the National Park Service, DNR, Menomonee Valley Partners, Milwaukee County Park System, concerned citizens, and many more.

Maps were published in the summer of 2005. Trail signs have been posted along the rivers at launch sites, portage sites, and take out sites.

Trail Types

Existing Trail Inventory

The Oak Leaf Trail (OLT), Hank Aaron State Trail (HAST), Beer Line Trail, and the planned South Side Trail demonstrate that the Milwaukee trail network is growing. In addition to adding new trails, it is important to maintain and improve existing trails. Trail

counts occurred on the OLT at Cupertino Park, where 39,225 users were counted over the course of a month and at Brady Street, where 8647 were counted over a week (projected monthly count: 34,588).

Paved Multi-Use Trail
Example: Oak Leaf Recreational Trail (formerly the 76 Trail)

The Oak Leaf Trail is the gem of the Milwaukee County Park System. Users will be drawn to the pastoral beauty of remote trail segments, and accompanied by bikers, skaters, runners, and walkers leaving the bustle of everyday life behind.

This trail features 108 miles of multiple loops through all the major parkways and parks in the system. Loops are composed of 52 miles of paved off-road paths, 31 miles of parkway drives, and 25 miles of municipal streets.

Birding Trail
Example: Oak Leaf Birding Trail

Milwaukee County is home to over 100 bird species, from the common House Sparrow to the Peregrine Falcon; however, more than 150 other bird species pass through the county during their spring and autumn migrations. That means you might view over 250 species of birds without ever leaving Milwaukee County.

The Oak Leaf Birding Trail guides birders to the prime birding locations in the Milwaukee County Parks. The birding trail is not a continuous hiking trail winding through the woods, but a road map that allows you to follow the birding locations along the Oak Leaf from one park or parkway to another.

The Oak Leaf Trail is part of a regional system of trails that include Milwaukee County, the surrounding counties, the City of Milwaukee, local municipalities, and the Wisconsin State Park System.

Mountain Bike Trails
Example: Alpha Mountain-Bike Trail - Whitnall Park/Crystal Ridge

This is Milwaukee County's first mountain bike trail. Three miles of single-track trail from the Winter Sports Area of Whitnall Park now connect to the Crystal Ridge area of the Root River Parkway. This single-track trail has been christened the Alpha Trail in hopes that there will be more mountain-bike trails developed.

The trail is operated in cooperation with the Metro Mountain Bikers (MMB). The trail was designed with the help of the International Mountain Bike Association and the Trail Care Specialist Service. Volunteers of the MMB constructed the 3-mile trail. In order to accommodate beginner mountain bikers, the trail only has a few steep or rocky segments.

The trailhead, at 6740 S. 92 St., is at the toboggan hill in Whitnall Park's Winter Sports Area (northeast of the golf course). MMB has purchased and installed trail signage on

the trail. An official map was completed in the summer of 2006. These maps will be posted at trailhead kiosks and are available online at **www.countyparks.com**.

Cross Country Ski Trails
Examples: Brown Deer Park and Whitnall Park

Brown Deer Park provides 3 loops of groomed trails for a total of 5.25 miles. Whitnall Park provides 4 loops of groomed trails for a total of 5.5 miles. In the past the Milwaukee County Park System provided up to six locations for groomed cross-country ski trails. Future plans call for increased cross-country ski opportunities.

Equestrian Trails
Example: Whitnall Park

Parking is available in the winter sports area. Whitnall provides approximately 2.5 miles of unmaintained equestrian trail.

Example: Oak Creek
In the City of Oak Creek there is a short segment of the Oak Leaf Trail that accommodates equestrian riders to connect into the Conservancy Trail just across the Milwaukee County border into Racine County.

Hiking/Nature Trails

There are at least 30 designated hiking or nature trails within the Milwaukee County Parks Department. The trails/natural areas crew has been mapping these trails since 2004. There are many 'volunteer' or unofficial trails that have developed through the years in most of our parks and parkways.

New maps have been created for Wehr Nature Center's trails, the Seven Bridges Trail, Grobschmidt Park Trails, and are available online at **www.countyparks.com** or at the Parks Administration building at 9480 Watertown Plank Road, Wauwatosa, Wisconsin.

Example: Jacobus Park Nature Trails: National Recreation Trail Designation 2006

Work began in spring 2003 with the rebuilding of two sections of trail as interpretive nature trails, publication of new trail guides, native plant restoration, and scheduling of nature education programming. Native Plant restoration was supervised by the county land manager, using plant material of local genotype and species historically associated with the park.

Interpretive signs for the nature trails were installed.

Grants Received:

-$15,000 Jacobus Park Neighborhood Association and $15,000 matching grant from the State of Wisconsin Department of Natural Resources for Phase I Nature Trail Restoration.
-$37,536 Community Development Block Grant from the City of Wauwatosa for the restoration of a self-guided nature trail and the east end of the park.

Snowmobile Trails
Example: Rolling Dice Riders Snowmobile Trail

There are 12.6 miles of snowmobile trails within the City of Franklin (Milwaukee County) and segments of the trails are contained within Milwaukee County Parkland. These snowmobile trails are designed, built, and maintained by the Rolling Dice Snowmobile Club and connect to trails leading to a 25,000-mile statewide system.

Funding was provided by the DNR trail aids program and the Rolling Dice Snowmobile Club.

Urban Water Trails
Example: Milwaukee Urban Water Trail

Milwaukee County residents and visitors alike are lucky to have portions of the Milwaukee, Menomonee, and Kinnickinnic Rivers to paddle canoes and kayaks. These Rivers comprise the Milwaukee Urban Water Trail, which provides access to more than 25 miles of paddling. At this time the majority of launch sites, portage areas, etc. are available along the Milwaukee River. Efforts are being made by the Friends of Milwaukee's Rivers to expand public access on the Menomonee and Kinnickinnic Rivers.

Access sites are marked along the trail route and maps are also available from the Friends of Milwaukee's Rivers. River conditions, the PDF version of the map, and additional information is available at www.mkeriverkeeper.org.

Proposed Trail Corridors

Geographic Information Systems (GIS) technology, field inspections, and local knowledge were employed to identify suitable areas for future trail development in Milwaukee County. The goal was to identify strips of land (corridors) that meet the geographic criteria for trail development. These criteria include: linear shape, continuity of ownership, existing structures, connectivity with other trails, and sufficient width. The following is a list of corridors with detailed explanations and reasoning for their selection to be included in this plan.

Countywide Proposed Trail Corridors
(Please refer to Milwaukee County Trail System Map)

1. Kohl Park Connector (OLT)
This segment would connect from the Village of Brown Deer trail west into A.C. Hanson Park and then continue northwest into Kohl Park, one of Milwaukee County's newest acquired parcels of parkland. This Oak Leaf Trail segment not only serves as a valuable connection, but also will provide improved access into Kohl Park, which currently has little access for area residents.

2. Little Menomonee River North (OLT)
This segment of trail will connect to the Kohl Park Connector and will link to the existing Oak Leaf Trail segment to the south along the Little Menomonee River and Parkway.

3. Northwest Loop (OLT)
This segment will connect Dretzka Park, which has been considered a long-time OLT starting point, south to Granville Dog Park along the Menomonee River Corridor. This segment will then head east to connect into the existing OLT along the Little Menomonee River Corridor. In addition to connecting local residents to local trails, it also would provide better access to the Menomonee Falls off-street trail system connecting just west of the Dog Park.

4. West Allis Cross Town Connector
This segment of trail is a City of West Allis initiative and it is important to mention in this plan. This will be an east-west trail spanning 5 miles across the City of West Allis. This trail will provide a link between Milwaukee and Madison via the Hank Aaron State Trail, the Waukesha County New Berlin Trail, and the Glacial Drumlin Trail. This trail also makes an important connection to the Oak Leaf Trail.

5. We Energies East/West Connection (OLT)
This segment would span across the entire county as a valuable East/West connection. The trail would be adjacent to or on 3 park properties.

6. Franklin Connector (OLT)
This proposed trail would create a loop connecting into the current Oak Leaf Trail, which traverses through Whitnall Park, and would connect to trails proposed by the City of Franklin.

7. Ryan Creek Corridor (OLT)
This proposed trail would be along the Ryan Creek corridor and creates a great connection into the proposed Franklin Trail System as well as preserving a valuable environmental corridor.

8. Root River Rainbow Airport (OLT)
This trail segment would begin at the entrance of the Milwaukee County Sports complex, continues south along the Root River Corridor near the Racine County line, and is near the former Rainbow Airport.

9. Root River County Line (OLT)

This segment connects the southernmost and central part of the County with the Oak Leaf Trail. It connects into the Root River Parkway, near the old Rainbow Airport, and continues where the Root River Rainbow Airport segment leaves ends.

10. Connector into Bender Park (OLT)
The trail would connect from the north shore into the We Energies corridor and into Bender Park. The trail would continue through the park greatly increasing access to this parcel of parkland.

11. Racine Connector (OLT)
This trail segment would extend the Oak Leaf Trail from Bender Park down to the Racine County Line connecting to existing Racine County trails.

12. Hoan Bridge Alternative
This trail segment would take bicyclists off the Oak Leaf Trail section on Russel Ave., which is constricted and congested, and instead would put them directly on to lands managed by the Port Authority, WDNR, and WisDOT. This alternative route would provide a much-needed off-road connection to the current off-road Oak Leaf trail that ends at the north end of Cupertino Park. The route would be positioned along the Naval Reserve fence would minimize the impact on green space. It would then connect with the existing Oak Leaf Trail at the curve in Bay Street near Wrought Washer Manufacturing.

From a historical perspective, this trail segment would traverse the former grounds of the Bay View Rolling Mills. The trail would also touch on the interesting industrial functions of the Port, and could direct tourists, cyclists included, on a side trip to view freighters at dock. This would provide added value to Port lands and the Bay View area in general.

13. Estabrook to Brown Deer RR/Utility Corridor
This section of rail spans from Hampton Avenue northwest to West Brown Deer Road. This segment of railroad corridor would conveniently connect the Oak Leaf Trail into the section of We Energies' corridor that will eventually connect into the Ozaukee County Interurban Trail.

14. Lincoln Creek Extension
Extending the OLT west along Lincoln Creek would service more County residents and develop underutilized parkland.

15. Noyes Park Corridor
Trail development adjacent to the unnamed drainage creeks would provide more resident access to the OLT and connect the OLT to the currently unconnected Noyes Park.

16. Wilson Creek
This corridor consists of open grassy land that abuts Wilson Creek. The creek runs from Wilson Park as it extends north and intersects with the Kinnickinnic River/Jackson Park.

This corridor could serve as another connection from a county park to the OLT, as well as, connection between the existing OLT and the WE-Energies East-West Connector included in this study and proposed for OLT Development.

17. Kinnickinnic River – East
The corridor consists of the publicly owned ROW surrounding the Kinnickinnic River as it runs from Manitoba St, north to Pulaski Park at 16th St, and then East to 6th Street. Currently, along much of the corridor, there are dilapidated walking paths on both sides of the river as well as pedestrian bridges connecting neighborhood streets. Development of this corridor would result in a key off-street bicycle trail connection from the planned South Side Trail to the OLT.

18. Hank Aaron State Trail, existing and proposed
The Hank Aaron State Trail (HAST) exists in completion from 43rd Street east to 6th Street. A proposed trail extension from 43rd Street west to the County line is slated for development along the recently State purchased abandoned rail line.

19. The North Menomonee River Valley Connections
The connection corridor consists of an area from 68th St. east to 41st St. along the Menomonee River. This corridor is being studied for possible bicycle and pedestrian connections across the Menomonee River and the active Canadian Pacific Railway. The Milwaukee Metropolitan Sewage District (MMSD) has a new Flood Management for Western Milwaukee plan. From details reported by Milwaukee's Department of Community Development and Bicycle and Pedestrian coordinator, MMSD will be purchasing all land between the railroad tracks and the Menomonee River from N 60th St. to the active north/south running railroad tracks (about 42nd St.). With the addition of this land becoming a greenway, the City of Milwaukee should work with MMSD to develop trails and connections across the railroad tracks and river.

Proposed Soft Multiple-Use Trails
As shown on the Trail Network Plan Map, there are three soft-multiple use corridors suitable for several trail uses. These proposed trails would be along the Little Menomonee and Menomonee River Corridors, along the Milwaukee River Corridor, and along Sheridan, Warnimont, and Grant Parks on the shore of Lake Michigan, as well as within the County Grounds area. These trails could provide opportunities for hiking, skiing, mountain biking, birding, running, and walking.

Proposed Snowmobile Trail
The Milwaukee County Trail Network Plan shows a proposed snowmobile trail that essentially creates and east-west connector from the Root River Parkway near 60th Street and continues along the Root River Corridor and terminates just past County Line Road and State Highway 32.

Recently Completed Multiuse Trail Projects

St. Francis Connector Project (completed 2005)

This proposed trail is located in the City of St. Francis. This segment connects with Bay View Park's paved trail and continues along the lakefront on Park Shore Condominium property and ultimately connects into Sheridan Park. The design effort for this trail began in early 2004. The location and size of the segment was resolved in June 2004. Construction of the trail was completed in June 2005. Restoration of turf occurred in Spring 2006

Oak Leaf-Drexel to 68th St. at Anderson Lake (Completed Fall 2006)

A $1,000,000 project that was funded by a $800,000 grant, $100,000 by JOLT (concerned citizens and businesses), and $100,000 supplied by Milwaukee County. This trail adds 2.1 miles to the Oak Leaf Trail and runs from Drexel Road to Loomis Road. The trail was completed from Drexel to just shy of Loomis road in fall 2006.
The final alignment from 68th St./Anderson Lake to Loomis Road is in the planning stage and should be constructed in 2007. The purpose of this project is to move the current trail off of South 68th Street to increase bicycle and pedestrian safety.

Oak Leaf- South Shore Segment (Completed 2006)

This bike trail section was replaced, due to damage from high lake levels in 1985-87. This restoration began on the north end and extends to the point where the path exits the lakefront and returns to the top of the bluff in Bay View Park.

Trail Development Details

Design Guidelines
For trails to serve the recreation and transportation needs of Milwaukee County residents, safety must be the first priority in trail design. Further, adults often cite perception of danger and fear of traffic as reasons that they do not bicycle more. By increasing the trail network and designing for the safety of bicyclists, walkers, joggers, and children, Milwaukee County will increase general trail usage.

The AASHTO Guide for the Development of Bicycle Facilities and the Wisconsin Bicycle Facility Design Handbook (WBFDH) present current bicycle facilities design standards. WisDOT's own guidelines are based on the AASHTO guide. Meeting the design guidelines of this and other local, state, and federal bicycle publications will ensure that trails in Milwaukee will safely serve the population for years to come.
Guidelines from AASHTO and the Wisconsin Bicycle Facility Design Handbook should be

considered minimum standards. Many municipalities routinely exceed the recommendations to provide a more enjoyable and safe bicycling experience. Below are the primary minimum trail design guidelines, culled from the Pedestrian and Bicycle Information Center and the WBFDH.

Trail facilities, like other transportation facilities, often require a high level of engineering. Summaries of important design guidelines and examples of common best practices cited in the City of Milwaukee's *Off-street Bikeway Study,* authored by the Bicycle Federation of Wisconsin, can be found in Appendix C. In addition references for the U.S. Forest Service's Trail Construction and Maintenance Notebook and IMBA's Trail Solutions guide can be found in Appendix A.

Construction and Maintenance

Construction Costs

The cost of new trail construction is difficult to generalize because of the many variables that are involved. Trail surface, width, location, needed structures, signage, and amenities all affect total construction cost. While it was difficult to find a national average construction cost, the Rails to Trails Conservancy provides a construction cost range from $40,000 per mile for a crushed gravel surface trail to more than $150,000 per mile for an asphalt trail, and more than $200,000 per mile for a concrete trail. Geographic location is also a big factor in cost. Costs of labor and materials vary greatly across the country. For a detailed estimate of construction refer to Appendix D.

It is important to note that the above estimates include only base construction costs. No trail amenities, signage, bridges, etc. are included. For a more realistic trail construction estimate that does include trail amenities, bridges, signage and drainage issues, four summaries with data from Milwaukee County and the City of Milwaukee are provided here:

- Honey Creek Parkway Construction of bike trail from Portland Ave to 70th St, not including bridge construction, is $149,206 per mile for 10 foot wide asphalt trail
- Root River, from 60th St. under Hwy 100 to Rainbow Airport, not including boardwalk is $301,014 per mile for 10 foot wide asphalt trail*
- South Side Trail (a.k.a. Kinnickinnic River Bicycle Trail) for base construction including trail amenities, signage, and drainage issues is $176,470 per mile for a 10 foot wide asphalt trail
- Milwaukee County's estimate for construction of the 6.5 mile Hank Aaron State Trail (West Allis Line) is $224,307 per mile for a 10 foot wide asphalt trail (including retrofit of bridges)

*The major increase in the Root River project is due to drainage culverts and railings

Maintenance Costs

Currently, almost all trails in Milwaukee County are asphalt trails, but with the development of future trail corridors, there is a possibility of more crushed gravel or concrete trails and natural surface trails in the future. Figures for asphalt, crushed gravel, and concrete maintenance costs are included below.

Maintenance of asphalt, concrete, and crushed gravel trails differs due to the different properties of the materials. Periodic maintenance of a crushed gravel trail is greater since it is more susceptible to adverse weather conditions such as rainstorms and run-off. Heavy amounts of water running on the trail can cause ruts to form and soften the trail as a whole. More use on a soft trail will cause greater damage to the overall smooth surface and require grading. One advantage to a crushed gravel trail is that it is not affected much by the freeze/thaw cycle that exists in the Milwaukee area. Although asphalt and concrete trails are generally not affected by rain and water erosion, freeze/thaw cycles can cause buckling, creating potholes and cracks which can be dangerous and costly to repair.

Regardless of trail surface type, there are many other factors that can affect cost of maintenance. The main factor affecting cost is the difference in agencies that maintain and operate trails. Each agency will have different labor costs, access to different machinery and equipment, and may or may not have a volunteer base to offer assistance.

Maintenance and operation costs can also have a broad definition. For the purpose of this report, maintenance and operation costs will be classified as routine maintenance. Routine maintenance can be defined as maintenance that is needed to keep the trail operating in a safe and usable condition, not involving major trail development for reconstruction. Below is a list of routine maintenance activities:

- Yearly facility evaluation to determine the need for minor repairs
- Removing encroaching vegetation
- Mowing
- Map/signage updates
- Trash removal/litter clean-up
- Flood or rain damage repair: silt clean up, culvert clean out, etc.
- Patching, minor regrading, or concrete panel replacement
- Planting, pruning, and general landscaping

** snowplowing is also a routine maintenance activity but will be broken out into a separate cost listed below.

Research was conducted to determine annual per mile maintenance costs for off-street trails. Some estimates found were specific to a trail surface type and others were not.

Interestingly, maintenance and operation costs are very similar whether a surface is crushed gravel or asphalt. Due to the low amount of concrete bike trails, a routine maintenance figure could not be found. Below is a list of maintenance costs from various sources:

$1,500 per mile provided in the Iowa Trails 2000 plan by the Iowa Department of Transportation (includes a mixture of different trail surfaces)

$2,525 per mile summarized by the Milwaukee County Park System (all asphalt paths)

$1,200 per mile (as an absolute minimal cost) in the Rail Trail Maintenance & Operation Manual provided by the Rails–to–Trails Conservancy.

$2,077 per mile for government run trails provided in the Rail Trail Maintenance & Operation Manual provided by the Rails–to–Trails Conservancy.

$2,042.06 per mile of unpaved trail in the Trail Cost Model – Draft by the Wisconsin Department of Natural Resources.

Snow removal costs range from $24.13/mile on the Glacial Drumlin Trail – E to $154.13/mile on the Red Cedar State Trail. Although snow removal does occur on portions of Milwaukee County's Oak Leaf Trail, no cost estimate could be separated out.

Recent Milwaukee County Parks Trail Maintenance Estimate:

Services performed on bike trails, park pathways, and walks. These services include general forestry work, asphalt repair, landscaping, construction, and drainage work.

Forestry: Approximately 16 weeks were spent conducting forestry operations. This involves primarily trimming back encroaching vegetation and removing storm-damaged material. The cost estimate for this is **$150,000.**

Landscaping: This type of work is generally associated with site restoration needed in conjunction with the installation of new trails and paths. The cost estimate for this work is **$110,000.**

Construction and Asphalt: The volume of this type of work can vary greatly from year to year. In 2004, approximately 2 weeks of labor was devoted to this. We installed drainage, repaired asphalt, and repaired washouts. The cost of this work was approximately **$20,000.**

The approximate total is $280,000.

Funding, maintenance needs, and staff levels may vary annually so the above estimate does not remain the same year to year. A maintenance plan and budget need to be

created to implement in the future. With trail user counts increasing it is important for the proper maintenance to be performed to ensure trail user safety.

Funding

With current budget constraints it is difficult to keep up with the increased demand for trail development and maintenance. The growing trail user population may choose to support elected officials' efforts to increase funding.

Several avenues for trail construction and development exist in both the public and private sectors. Grant opportunities are available and projects need to be reviewed on a case-by-case basis for eligibility. Smaller grants can become available from foundations or the private sector and bigger grant amounts can be available from the state and federal governments. A summary of government related grants taken from the City of Milwaukee's Off-Street Bikeway study authored by The Bicycle Federation of Wisconsin can be found in Appendix E.

Fundraising from private sources is another option. The Friends of Milwaukee County's Trails has been established through The Park People to serve as a non-profit organization to receive donations for specific projects. The governing body of the Friends group determines how the money gets distributed, but it is the group's mission to use funds for improvement of all trails in Milwaukee County.

In addition to fundraising, other options may need to be explored to ensure a permanent funding source. For example, other park and trail systems have trail user fee programs.

Conclusion

The purpose of this Trails Network plan is to summarize the long-term goals and needs for trail development and maintenance within the Milwaukee County Parks Department. The proposed trail corridors mentioned within this plan help to clarify the priority of trail construction, acquisition, maintenance, etc. Grants and private funding are becoming increasingly important for trail development and maintenance. It is imperative that Milwaukee County Parks maximize their relationships among the various levels of government as well as Friends Groups, volunteers, scout troops, and local businesses.

The intent of this plan too, is to provide the general public with as many options as possible to access trails and parks within Milwaukee County. It is also important that all trail uses are recognized such as biking, running, hiking, in-line skating, snowmobiling, skiing, and so on.
Although this plan is thorough it should not be considered the final draft. This plan should be updated every couple of years to account for trail improvements as well as changing trends.

Appendix A

Resources:

American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*, 1999.

Iowa Trails 2000 Plan, Iowa Department of Transportation
http://www.iowabikes.com/trails/

Manual on Uniform Traffic Control Devices (FHWA) mutcd.fhwa.dot.gov/.

Milwaukee Off-Street Bikeway Study: Milwaukee's Best Opportunities for Trail Expansion, Bicycle Federation of Wisconsin.

SEWRPC *Regional Bicycle and Pedestrian System 2020 Plan for SE WI*
www.sewrpc.org/transportation/amendmentbikeped.asp

Trail Construction and Maintenance Notebook, 1999. United States Department of Agriculture, Forest Service.

Trail Solutions: IMBA's Guide to Building Sweet Singletrack, 2004. International Mountain Bicycling Association.

Wisconsin Bicycle Facility Design Handbook (WisDOT)
www.dot.state.wi.us/projects/bikes.htm

Wisconsin DOT Major Sources of Funding for Bicycle & Pedestrian Projects
www.dot.wi.gov/localgov/docs/potential-funding.pdf

Appendix B

Milwaukee County Trails Council – Members and Organizations

Jack Hirt, Bicycle Federation of Wisconsin
Tom Schwan, Citizen Appointee
Dave Schlabowske, City of Milwaukee Dept. of Public Works
Marty Weigel, Metro Mountain Bikers
Chris Kegel, Citizen Appointee
Frank Furdek and Jill Mrotek, Wisconsin Dept. of Transportation
Melissa Cook, Wisconsin Dept. of Natural Resources
Angie Tornes, National Park Service and Wisconsin Walks
Sup. Mark Borkowski, Milwaukee County Board of Supervisors
Bridget Bannon, Office for Persons with Disabilities
Paul Kortebein, Milwaukee County Parks
Guy Smith, Milwaukee County Parks
Jim Goulee, The Park People
Sue Black, Milwaukee County Parks

Jim Marks and Bill Gross, Rolling Dice Snowmobile Club

Appendix C

Design Guidelines

Intersections

Shared use paths function best when they are in their own right of way. Paths along former railroad corridors or canals work well because they are likely to have fewer intersections with roadways, and may even be completely grade separated from roadway intersections (i.e. they cross roadways on underpasses or overpasses). By contrast, paths that have frequent intersections with roadways and/or driveways usually require path users to stop or yield at every crossing, and every crossing creates potential conflicts with turning traffic. Intersections are particularly dangerous for bicyclists since this is where most bicyclist/motorist crashes occur. Thus, a primary goal of bicycle trail design is to minimize the number of at-grade intersections.

The Wisconsin Department of Transportation has not, at this time, developed a warrant process for judging the necessity of urban or suburban grade separated crossings. It does offer the following guidance and graphic on general urban or suburban crossing situations and the general character of the solutions:

- *Crossing low-volume streets* requires little more than basic improvements – stop or yield signs, warning signs, and pavement markings
- *Crossing medium-volume streets* may combine signs and markings with median refuges;
- *Crossing high-volume streets* may require a signalized intersection and/or a median refuge

Crossing very-high volume streets will likely require a grade separation; freeways do require one.

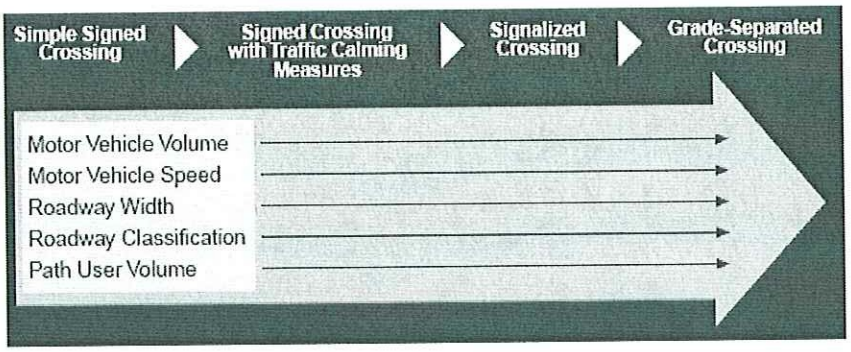


Figure 17 Factors on Crossing Design

The Idaho Department of Transportation bicycle and pedestrian planning manual provides a "suggested analysis of separated multiuse pathways" that recommends on-

street facilities, rather than shared use paths, when more than 8 street crossings per mile are present. The guidance also recommends proceeding with extreme caution and perhaps switching to on-street bicycle lanes when there are between 5 and 8 crossings per mile, and with one to four crossings per mile the manual encourages the designer to use special care to treat potential conflicts. An additional tool is the side-path suitability algorithm developed by Ed Barsotti of the League of Illinois Bicyclists.

Width and Clearance

10 feet or 3 meters is the recommended minimum width for a two-way, shared use path on a separate right of way. It is essential to remember that trail width can be affected by poor maintenance as demonstrated on parts of the OLT running in the northwest side of the city along the Little Menomonee River Parkway. According to the WBFDH, if potential use is high enough, width can be increased up to 14'.

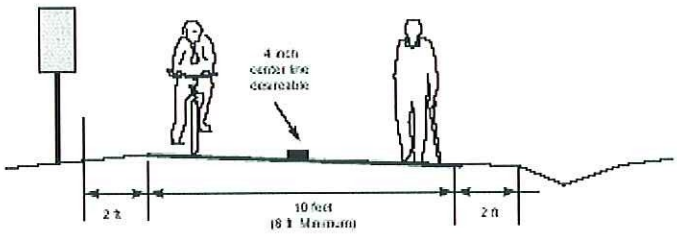


Figure 18 Typical AASHTO Recommended Bicycle and Pedestrian Shared Use Path Cross Section

Other critical measurements include:

- 8 feet (2.4m) may be used where bicycle traffic is expected to be low at all times, pedestrian use is only occasional, sightlines are good, passing opportunities are provided, and maintenance vehicles will not destroy the edge of the trail
- 12 or even 14 feet is recommended where substantial use by bicycles, joggers, skaters, and pedestrians is expected and where grades are steep
- 2 feet of graded area should be maintained adjacent to both sides of the path
- 3 feet of clear distance should be maintained between the edge of the trail and trees, poles, walls, fences, guardrails, or other lateral obstructions
- 8 feet of vertical clearance to obstructions should be maintained; rising to 10 feet in tunnels and where maintenance and emergency vehicles must operate
- Horizontal and vertical alignment etc

The design of a shared use path should take into account the likely speed of users, and the ability of bicyclists to turn corners without falling over, skidding, or hitting their pedal on the ground as they lean over. The AASHTO Guide for the Design of Bicycle Facilities has a number of tables and equations to help designers meet the tolerances of a bicyclist based on the following key design speeds:

- 20 miles per hour (30 km/h) minimum design speed
- 30 miles per hour (50 km/h) should be used where downgrades exceed 4 percent

- 15 miles per hour (25 km/h) should be used on unpaved paths where bicyclists tend to ride more slowly (and cannot stop as fast without skidding or sliding on a loose surface)

Grade

Another critical factor in trail design is the grade or slope of the path. Generally, grades greater than 5 percent (one feet of climbing for every 20 feet traveled forward) are undesirable as they are hard for bicyclists to climb and may cause riders to travel downhill at a speed where they cannot control their bicycles. However, recognizing that trails cannot always remain flat, the WBFDH offers the following suggested lengths for certain grades:

Grade	*Maximum Recommended Length*	
Percent	*ft*	*(m)*
5-6	800	(240)
7	400	(120)
8	300	(90)
9	200	(60)
10	100	(30)
≥11	50	(15)

Note: Min. design speed for grades = 30mph (50km/h).

(after AASHTO Guide for the Development of Bicycle Facilities, 1999)

Table 2 Suggested Grade Limits for Shared Use Trails

And, suggestions are offered for ways to mitigate the impact of steeper slopes, such as:

- 4-6 feet of additional width to the trail to allow sufficient space for a cyclist to dismount and walk their bicycle without blocking the trail, or to allow cyclists to pass each other
- alerting cyclists to the approaching grade with appropriate signs and markings posting a recommended descent speed or grade
- exceeding the usual minimum stopping sight distances to allow for the higher speeds
- exceeding the usual minimum thresholds for providing recovery areas, railings etc
- using a series of short switchbacks to contain the speed of descending riders

W7-5

Sight Distances

The ability of a cyclist to stop or slow down to avoid a collision or crash is affected by many things. The rider must have time to identify a potential problem and react accordingly, which means that they must be able to see approaching intersections or corners in plenty of time even when they are traveling at the design speed of the trail. The bicycle itself must be able to be stopped or brought under control in time, which is affected by the braking ability of the bike, the surface material (a loose surface requires

greater stopping distance), and the weather (wet conditions require greater stopping distances than dry). Once again, the AASHTO Guide and state/local manuals have tables and charts to enable the designer to calculate the appropriate sight distances in a range of situations.

Drainage

In response to a message about trail maintenance posted recently to an e-mail listserve, one trail manager identified the three most important issues as drainage, drainage, and drainage. Poor drainage can ruin a good trail. The AASHTO Guide recommends a minimum cross slope of 2 percent – and the need to make trails accessible to people using wheelchairs argues against a cross slope greater than 3 percent – to provide adequate drainage. The North Avenue OLT underpass is an example of poor drainage (Figure 19). The development of the Kenilworth building includes a new trail access point.

igure 19 Ponding on the OLT at North Ave

Other considerations to ensure adequate drainage include: slope the trail in one direction rather than having a crown in the middle of the trail, ensure a smooth surface to prevent ponding and ice formation, place a ditch on the upside of a trail constructed on the side of a hill, place drainage grates and utility covers etc./ out of the travel path of bicyclists, and preserve natural ground cover adjacent to the trail to inhibit erosion

Surface

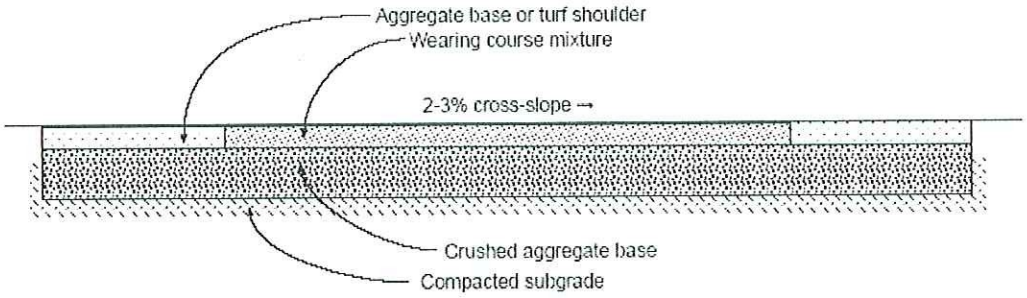
Another important consideration in trail design is the type of surface that will be provided. A hard surface, such as cement or asphalt, will generally see cyclists operating at a faster speed than a soft surface, but may not be as popular with joggers and is more expensive to install. The table summarizes the advantages and disadvantages of each material.

Factors such as weather conditions and soil types can affect the three main material choices of asphalt, concrete, or crushed rock. Asphalt or concrete is necessary for trails to meet urban transportation needs. While most trails, including the OLT are asphalt, some locations use concrete. Denver and Colorado Springs have mostly concrete trails. The Ohio Department of Transportation Manual 2005 includes the following recommendations on concrete use:

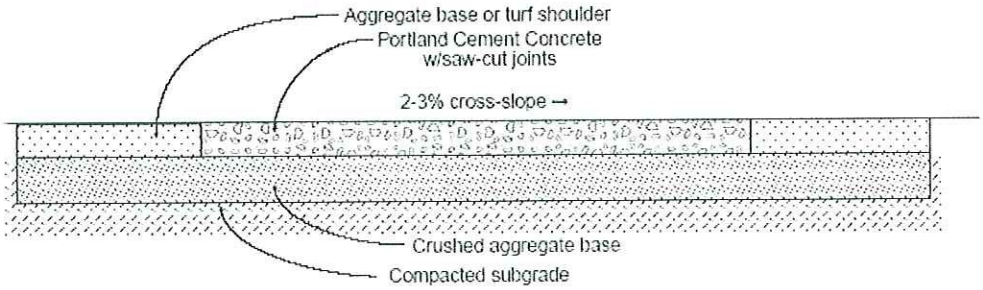
- Use concrete where trail will flood annually
- Use concrete on the 25 feet leading into and out of a street crossing. Pavement change is part of warning trail users of entering street. The bollards, detectable warning, etc work better in concrete.

Surface Material	*Advantages*	*Disadvantages*
Soil cement	Uses natural materials, more durable than native soils, smoother surface, low cost.	Surface wears unevenly, not a stable all-weather surface, erodes, difficult to achieve correct mix.
Crushed aggregate	Soft but firm surface, natural material, moderate cost (varies regionally), smooth surface, accommodates multiple use.	Surface can rut or erode with heavy rainfall, regular maintenance to keep consistent surface, replenishing stones may be a long-term expense, not for steep slopes.
Asphalt	Hard surface, supports most types of use, all weather, does not erode, accommodates most users simultaneously, low maintenance.	High installation cost, costly to repair, not a natural surface, freeze/thaw can crack surface, heavy construction vehicles need access.
Concrete	Hardest surface, easy to form to site conditions, supports multiple use, lowest maintenance, resists freeze/thaw, best cold weather surface.	High installation cost, joints must be sawn for smooth ride, costly to repair, not natural looking, construction vehicles will need access to the trail corridor.
Native soil	Natural material, lowest cost, low maintenance, can be altered for future improvements, easiest for volunteers to build and maintain.	Dusty, ruts when wet, not an all-weather surface, can be uneven and bumpy, limited use, inappropriate for bicycles and wheelchairs.
Recycled materials	Good use of recyclable materials, surface can vary depending on materials.	High purchase and installation cost, life expectancy unknown.

Asphalt Cross Section



Concrete Cross Section



• Figure 20 Pavement cross-sections with slope

Structures

One of the great advantages and unique features of trails along former railroad corridors is that they often have grade separated intersections with the highway system, and have bridges to carry them over river or stream valleys. However, not all corridors have this asset and structures of all kinds are needed to carry trail users under or over obstacles such as streets, highways, rivers, freeways etc. The critical dimensions to use in designing underpasses, bridges, and tunnels, include:

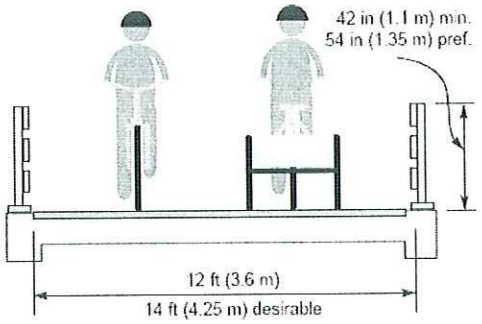
- The minimum width of the trail (usually 10 feet) should be maintained through the structure
- The clear distance of one to two feet on either side of the trail surface should also be maintained through
- the structure – otherwise, riders will tend to ride in the center of the trail to stay away from the wall or railing of the structure
- An overhead clearance of 10 feet (8 feet with good horizontal and vertical clearance, good sightlines etc) should be maintained through an underpass or tunnel

Retrofitting old bridges

In many cases, a structure that can no longer serve motor vehicle traffic may be quite adequate for path use. Some bridges have been retrofitted in place, while others have been disassembled and moved to a new site. Some designers have even used old railroad flat cars as bridges over small channels.

In general, retrofitted bridges will provide more than adequate clearances and support for a path structure, although a structural analysis should be done. Some modifications to the decking, as well as new railings and additional pedestrian-level lighting, may be appropriate.

- Railings, fences, or barriers on both sides of a path on a structure should be at least 42 inches (1.1m) high, and where they are higher than this a rub rail should be provided at the approximate handlebar height of 42 inches
- To meet the Americans with Disabilities Act Accessibility Guidelines (ADAAG), ramps should have a maximum running slope of 8.3%
- Clearances should allow for maintenance and emergency vehicles, as should the strength of the bridge (live loading)



• Figure 21 Bridge dimensions

Obstacles such as major highways or rivers are hard to overcome and present the designer with many challenges. However, unless obstacles are overcome, trails have limited value, safety, and use. Among the issues to consider when determining whether an overpass or an underpass would be more appropriate:

Lighting

Shared use paths in urban and suburban areas often serve travel needs both day and night. Fixed source lighting improves visibility along trails and at intersections, and is critical for lighting tunnels and underpasses. There are a number of factors to consider when planning lighting for trails including illumination levels, luminaire design, luminaire placement, and security. The AASHTO guide recommends using average maintained illumination levels of between 5 and 22 lux. The WBFDH contains a very detailed discussion of illumination levels, a summary is provided below.

Luminaire Design: Typical pole mounted roadway lights are a poor choice for illuminating narrow paths. Standard Type II horizontal lamps create spill light off the path, and require excess wattage and/or more frequent placement to maintain uniformity. If pole mounted lights are specified, Type I horizontal lamps should be used.

Luminaire Placement: Uniformity of illumination is particularly important for shared-use paths. Bicyclists moving between "hot spots" from poorly placed luminaires may be unable to see in the interspersed shadows. Providing some overlap allows for a more constant visual environment, and can help prevent crashes.

Bollards: Lights mounted below eye level can also be used for illuminating shared-use paths. More frequent spacing, combined with lower wattage bulbs, can meet recommended levels of luminance and uniformity while reducing operating costs. When choosing these fixtures, select a type that eliminates glare, since bicyclists' eye level will be just above these lights. These fixtures should be placed at least 2 ft (0.6 m) from the path edge.

Security: The ability to recognize individuals and threats to security must also be considered when designing path lighting. Good security begins with recommended levels of illumination and uniformity, but also requires consideration of bulb type and light color. For example, low-pressure sodium bulbs, while energy efficient, provide poor color rendition and compromise the viewer's ability to recognize faces. Paths through high-risk areas may require additional area lighting to provide the user with a wider view for threat detection. Where special security problems exist, higher illumination levels may be considered. Luminaires and standards should be at a scale appropriate for a pedestrian (i.e., no taller than 15 ft (4.5 m).

Note: Wisconsin State Statutes require front bicycle lights to be visible from at least 500 ft. There is no requirement for lights to illuminate the path and objects in front of a bicyclist. Many new bicycle lights are good at providing efficient lighting visible from long distances, but are relatively poor at illuminating the bicyclist's path.

Motorized Use of Paths

In some locations, shared use paths may be mistaken for motor vehicle roads or may suffer from illegal or unauthorized motorized use. At intersections with roadways, therefore, the path should be clearly signed, marked and/or designed to discourage or prevent unauthorized motorized access. Particularly in the urban environment, all terrain vehicle use is incompatible with multiuse trails for bicyclists and pedestrians. On the Oak Leaf Trail all motorized vehicles are prohibited except authorized park personnel or emergency vehicles. A variety of alternatives exist to discourage non-motorized use are presented in the WBFDH and summarized below:

- *Signing and Marking:* signing and marking are common elements. The most common is the R5-3 No Motor Vehicles sign. Other elements include the W11-1 Bicycle Warning sign, marked crosswalks, D11-1 Bike Route signs with M7-5 directional arrows, and Bike Xing pavement markings.

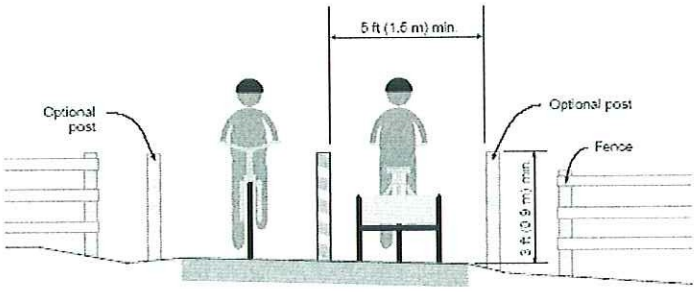
- *Tight Returns or Curb Ramps:* Simple design features can also help discourage motorists from turning on to a path. For example, curbed entrances with tight return radii of 5 ft (1.5 m) can make path entrances less attractive to drivers. Similarly, curb ramps can discourage motorists. With the latter, it is important to make the transition between the roadway and the ramp smooth with gentle slopes on each side of the gutter pan.

- *Medians*: A raised median with a cut-through can also help discourage motorists from turning into a shared use path.

- *Splitting the Trail in Two:* Split a ten-foot trail into two five foot approaches to an intersection, with a planted triangle between them. Low plantings can be placed in the median to discourage drivers from entering but allowing emergency vehicles to enter. This option may increase maintenance costs.

- *Plantings:* An additional measure to discourage motorists is low plantings on either side of the entrance. Low-growing shrubs that attain heights of 2 ft or so can visually narrow the path entrance and make motorists hesitate to try it. Fences that extend from the path area to the property line can also be used.

- *Bollards*: Probably the most common device is the bollard, often lockable, collapsible or removable to allow for authorized access to the trail. However, WBFDH recommends bollards only "as a last resort". Great care should be used in locating the bollard to ensure that they are visible, allow trail users through, and are not placed so as to channel both directions of trail users towards the same point in the trail. If bollards are to be used, they should be retroreflective, brightly colored, illuminated, and have pavement markings around them. On a ten-foot trail, one bollard should be used in the center of the trail (Fig 23). If more than one bollard is necessary, there should be five feet between them.



Signing, Marking, and Way Finding

Adequate signing and marking are essential on shared use paths, just as they are on streets and highways. Trail users need to know about potential conflicts, regulatory information, destinations, cross streets etc. For example, the Beer Line Trail is routed on the western sidewalk along Commerce Street. Currently, there is no signage alerting bicyclists and pedestrians to share the sidewalk (Figure 24). Bicycle route or share the sidewalk signage should be installed because it is illegal for adults to bicycle on the sidewalk EXCEPT when signage indicates otherwise. With the recent proliferation of dwelling units along Commerce, the potential for conflicts is increasing and should be addressed before a crash occurs. The Manual on Uniform Traffic Control Devices (MUTCD) provides some minimum traffic control measures that should be applied, and proposed revisions to the bicycle chapter of the Manual will offer a much greater range of options. The WBFDH goes into great detail on sign placement and design but also encourages restraint and consideration of the MUTCD.

• Figure 24 Shared sidewalk

Striping: a yellow centerline stripe is recommended where trails are busy, where sight distances are restricted, and on unlighted trails where nighttime riding is expected. The line should be dashed when adequate passing sight distance exists, and solid when no passing is recommended. A solid white line may be used to separate pedestrians from bicycle traffic, and solid white edge stripes may also be useful where nighttime riding is expected. Care should be exercised when choosing pavement-marking materials. Products that are skid-resistant are preferred and essential at locations where bicyclists are leaning, turning, or stopping.

Warning Signs: a range of warning signs can be used to inform users that recommended design criteria cannot be met, for example curve radii or grades.

Informational Way Finding Signs: trail users need to know where they are, where they are going, what cross streets they are crossing, distance to destinations, and what services are available close to the trail. The WBFDH has information on the appropriate signs to use in these instances. Although not in the MUTCD or WBFDH, many trails post signs encouraging uniform trail user etiquette (e.g. give audible signal when passing). For way finding, simply posting a "bike route" sign is not enough. Trails users must know their location and the trail destination to be able to effectively use the trail for transportation trips.

Intersection Markings and Signs: pavement marking and signs at intersections should channel users to cross at clearly defined locations and indicate that crossing traffic is to be expected. Similar, but perhaps smaller, devices than those used on roadways (stop and yield signs, stop bars etc) should be used on trails as appropriate.

The AASHTO Guide and WBFDH note that in addition to traditional warning signs in advance of intersections, motorists can be alerted to the presence of a trail crossing through flashing warning lights, zebra-style or colored pavement crosswalks, raised crosswalks, signals, and neck-downs/curb-bulbs.

In addition to the aforementioned design considerations, the provision of landscaping, trail amenities, access points, public art, and bicycle parking should also be carefully considered.

Best Practices

The following examples of trail construction serve as examples of best practices for different situations. They are included to serve as inspiration for any future trail development that might occur as a result of this study. Many of these examples take advantage of special circumstances that may not occur in most trail corridors. They may have an extremely wide ROW, use existing bridges or simply run through extremely high use corridors. Still, they set the bar for other trails in many ways and serve as ideal trails with excellent amenities that could be emulated in Milwaukee.

Rails WITH Trails

More and more trails are being built alongside active rail lines. For example, a trail in Carboro, NC does not have a fence between the active rail line and the trail despite the relatively narrow ROW (Figure 25). It does have trees and utility poles, which serve as a natural barrier. Also note the pedestrian portion of the trail is trackside. This might make it less likely that cyclists would hit the utility poles or ride over the grass and into

• Figure 25 Trail along active rail line without a fence
Photo credit: Arthur Ross

the tracks. It does, however, place the cyclist closer than desirable to the fence. The directional lane assignment sign is also innovative and non-standard.

• Figure 26 No barrier between trails users and an active rail line on the Blackhawk Trail in Madison, WI. Photo Credit: Arthur Ross

• Figure 27 Wherever possible, the Minneapolis Greenway separates pedestrian and bicycle traffic

Appendix D

**Descriptions detailing thickness and width are based on proper design guidelines.

Base Construction Costs for a 10 foot wide, granular surfaced, non-motorized multiuse trail		
Activity	Description	Cost per mile
Clearing & Grubbing	Initial clearing for trail way	$2,900
Grading	Includes grading for a 14 foot wide trail bed	$3,600
Granular Surface	3 inch think surface, usually crushed gravel or limestone	$18,090
General Landscaping	Base landscaping such as seeding/mulching	$27,200
Construction Contingency	10% of total costs	$7,029
Total Construction Costs		$51,790
Administration	6% of total construction cost	$3,107
Planning	2% of total construction cost	$1,036
Design/Engineering	10% of total construction cost	$5,179
Field Inspection	2% of total construction cost	$1,036
Total Costs		$62,148

Base Construction Costs for a 10 foot wide, asphalt surfaced, non-motorized multiuse trail		
Activity	Description	Cost per mile
Clearing & Grubbing	Initial clearing for trail way	$2,900
Grading	Includes grading for a 14 foot wide trail bed	$3,600
Aggregate Base	4 inches thick needed for hard surface	$18,500
Asphalt Surface	3 inch think surface	$66,000
General Landscaping	Base landscaping such as seeding/mulching	$27,200
Construction Contingency	10% of total costs	$11,820
Total Construction Costs		$130,020
Administration	6% of total construction cost	$7,801
Planning	2% of total construction cost	$2,600
Design/Engineering	10% of total construction cost	$13,002
Field Inspection	2% of total construction cost	$2,600
Total Costs		$ 156,023

Base Construction Costs for a 10 foot wide, concrete surfaced, non-motorized multiuse trail		
Activity	Description	Cost per mile
Clearing & Grubbing	Initial clearing for trail way	$2,900
Grading	Includes grading for a 14 foot wide trail bed	$3,600
Aggregate Base	4 inches thick needed for hard surface	$18,500
Concrete Surface	5 inch think surface	$115,700
General Landscaping	Base landscaping such as seeding/mulching	$27,200
Construction Contingency	10% of total costs	$16,790
Total Construction Costs		$184,690
Administration	6% of total construction cost	$11,081
Planning	2% of total construction cost	$3,639
Design/Engineering	10% of total construction cost	$18,694
Field Inspection	2% of total construction cost	$3,639
Total Costs		$ 221,743

Iowa Trails 2000, by the Iowa Department of Transportation, summarizes trail construction cost estimates.

- Estimated cost for non-motorized multiuse trails (single treadway), granular surface, 10-foot width- $67,000 per mile
- Estimated cost for non-motorized multiuse trails (single treadway), asphalt surface, 10-foot width- $106,700
- Estimated cost for non-motorized multiuse trails (single treadway), concrete surface, 10-foot width - $189,200

Appendix E

Summary of government related funding sources:

Transportation Enhancement Program

Transportation enhancements (TE) are transportation-related activities that are designed to strengthen the cultural, aesthetic and environmental aspects of transportation systems. The transportation enhancements program provides for the implementation of a variety of non-traditional projects, with examples ranging from the restoration of historic transportation facilities, to bike and pedestrian facilities, to landscaping and scenic beautification, and to the mitigation of water pollution from highway runoff. Transportation enhancements are part of the Statewide Multi-modal Improvement Program (SMIP). Most of the requests and projects awarded in Wisconsin have been for bicycle facilities. Examples of bicycle projects include multiuse trails (in greenways, former rail trails, etc.), paved shoulders, bike lanes, bicycle route signage, bicycle parking, overpasses/underpasses/bridges, and sidewalks. Transportation enhancement activities must relate to surface transportation. Federal regulations restrict the use of funds on trails that allow motorized users, except snowmobiles. TEA 21 expanded the definition of transportation enhancements eligibility to specifically include the provision of safety and educational activities for pedestrians and bicyclists, which had not been clearly eligible under ISTEA.
Contact: WisDOT District Bike & Ped Coordinators

Surface Transportation Program – Discretionary

The Surface Transportation Program – Discretionary provides grants primarily to local governments, transit or transportation commissions, etc. in areas with a population of greater than 5,000 for projects that promote non-highway use or supplement existing transportation activities. Priority is given to projects that promote alternatives to single-occupancy vehicle trips. These funds also come from the SMIP. Funding has gone evenly to transit and bicycle/pedestrian projects in past years. However, in the last two budgets, no money has been appropriated for this program. Nearly every bicycle project eligible under the Transportation Enhancement program is also eligible for this program, unless the project will clearly not reduce single-occupant vehicle trips. Unlike the Transportation Enhancement program, bicycle and pedestrian planning is eligible.
Contact: WisDOT District Bike & Ped Coordinators, or John Duffe, 608-264-8723

Congestion Mitigation and Air Quality Program (CMAQ)

The primary purpose of the Congestion Mitigation and Air Quality (CMAQ) Improvement Program is to fund projects and programs that reduce travel and/or emissions in areas that have failed to meet air quality standards for ozone, carbon monoxide (CO), and small particulate matter. Bicycle and pedestrian projects are eligible for CMAQ if they reduce the number of vehicle trips and miles traveled. Almost all bicycle projects eligible for Transportation Enhancements and STP-D are likely to be eligible (see examples above), but a higher burden of proof that the project will reduce air

pollution will be required. CMAQ is NOT a statewide program, only bicycle projects in Milwaukee, Kenosha, Racine, Ozaukee, Waukesha, Washington, Sheboygan, Kewaunee, Manitowoc, and Door Counties are eligible.
Contact: Anita Pusch (262-548-8789) with District 2 or Cindy O'Connor (920-492-5679) with District 3.

Hazard Elimination Program

Bicycle and pedestrian projects are now eligible for this program. This program focuses on projects intended for locations that should have a documented history of previous crashes.
Contact WisDOT District coordinators first for more details.
Contact: Chuck Thiede at 608-266-3341 is the statewide coordinator.

Surface Transportation Urban Funds

Metropolitan areas receive an allocation of funds annually. These funds can be used on a variety improvement projects including bicycle and pedestrian projects. Most of the Metropolitan Planning Organizations (MPOs) that administer this program have been using these funds to integrate bicycle and pedestrian projects as larger street reconstruction projects are taken on.
Contact MPOs for more information.

Incidental Improvements

Bicycle and pedestrian projects are broadly eligible for funding from most of the major federal-aid programs. One of the most cost-effective ways of accommodating bicycle and pedestrian accommodations is to incorporate them as part of larger reconstruction, new construction and some repaving projects. Generally, the same source of funding can be used for the bicycle and pedestrian accommodation as is used for the larger highway improvement, if the bike/ped accommodation is "incidental" in scope and cost to the overall project. Overall, most bicycle and pedestrian accommodations within the state are made as incidental improvements.

Recreational Trails Funding Sources

The following information was culled from the Wisconsin Department of Transportation website. Funding for the Recreational Trails Program (RTP) is provided through federal gas excise taxes paid on fuel used by off-highway vehicles. Towns, villages, cities, counties, tribal governing bodies, school districts, state agencies, federal agencies and incorporated organizations are eligible to receive reimbursement for development and maintenance of recreational trails and trail-related facilities for both motorized and non-motorized recreational trail uses. Eligible sponsors may be reimbursed for up to 50 percent of the total project costs.
Eligible projects include:

- Maintenance and restoration of existing trails
- Development and rehabilitation of trailside and trailhead facilities and trail linkages

- Construction of new trails (with certain restrictions on Federal lands)
- Acquisition of easement or property for trails
- Projects are ranked in order of funding priority
- Rehabilitation of existing trails
- Trail maintenance
- Trail development
- Trail acquisition

Regional DNR staff reviews and ranks eligible projects. Projects are then ranked in a statewide priority listing. The highest-ranking projects will be funded to the extent that funds are available.

Following you will find general program information for programs that provide up to 50% funding assistance to acquire land or conservation easements and develop facilities for outdoor recreation purposes – the Stewardship Local Assistance Grant Programs, the Federal Land & Water Conservation Fund Program, and the Federal Recreation Trails Program. Any project application submitted will be considered for each of the following programs that it is eligible for.

Under the Knowles-Nelson Stewardship Local Assistance Grant Program, the following programs provide 50% funding assistance to acquire land and easements and develop trails, facilities, etc. for nature-based outdoor recreation purposes.

Urban Green Space Grants (UGS)

Helps to buy land or easements in urban or urbanizing areas to preserve the scenic and ecological values of natural open spaces for outdoor recreation, including non-commercial gardening. Applicants compete for funds on a statewide basis. $1.6 million available.

Urban Rivers Grants (UR)

Helps to buy land or easements on or adjacent to rivers flowing through urban or urbanizing areas to preserve or restore the scenic and environmental values of river ways for outdoor recreation. Includes shoreline enhancements such as development of public recreation facilities or habitat restoration that serve public recreation or resource conservation purposes. The Urban Rivers Program has a cap per applicant based on 20% of the total funds allocated to the program each fiscal year. Applicants compete for funds on a statewide basis. $1.6 million

Acquisition of Development Rights Grants (ADR)

Helps to buy development rights (easements) for the protection of natural, agricultural, or forestry values, that would enhance outdoor recreation. Applicants compete for funds on a statewide basis. $800,000.

Land and Water Conservation Fund (LWCF)

At the time of printing, the federal appropriation had not been confirmed. Congress is currently reviewing several budget options that will have a significant effect on the LWCF appropriation ranging from increasing funding to no funding at all. Provides 50% funding assistance for the acquisition and development of public outdoor recreation areas and facilities. Similar to the Stewardship ADLP program above except that active outdoor recreation facilities are eligible for grant assistance and school districts may be eligible project sponsors. Applicants compete for funds on a statewide basis. Approx. $250,000.

Recreational Trails Act (RTA)

Provides 50% funding assistance for the development and maintenance of recreational trails and trail related facilities for both motorized and non-motorized recreational trail uses. Applicants compete for funds on a statewide basis. Approx. $900,000-$1 million.

These programs are administered by the Wisconsin Department of Natural Resources. The Stewardship Advisory Council with representatives from local units of government and nonprofit conservation organizations (NCO's) advises the department on matters relating to the Stewardship program. Similarly the State Trails Council advises the department on matters relating to the Recreational Trails Program. The National Park Service plays the major role in working with the Department on the Land & Water Conservation Fund Program and the Department of Transportation plays a role with the Recreational Trails Program. Key components of the programs are cooperation and partnership between the Wisconsin Department of Natural Resources, the federal government, local units of government, and NCOs. The programs recognize the important role each partner plays in meeting the conservation and recreation needs of Wisconsin residents and is designed to assist groups working to meet those needs. The application deadline for all of the programs is May 1 each year. Complete applications should be submitted to the regional Community Services Specialist (CSS) on, or be postmarked by, May 1.

Homeland Security Grants

The U.S. Department of Homeland Security provides grant funding for states and local municipalities for the prevention of terrorist attacks and for potential disasters. Certain trail projects may be eligible for these funds because of the transportation connectedness of trails from community to community. Additional information regarding the grant program can be found online at www.ojp.usdoj.gov/odp/grants.hsgp.htm.

Appendix F

Question # 13: Please list any other comments or concerns.

Public comments survey:

"I am a wheelchair user who lives near a County Park and would love to see more trail accessibility for the disabled."

"We need to return to thinking about the common good; trails are for all, the commonwealth and need to be supported by all namely taxes. Much of Western Europe has learned the lesson and we must follow. We must not be afraid to collect the taxes needed to improve the public infrastructure. Trails improve communication between people and thus improve community."

"The people of Milwaukee County don't realize how good our parks and trails are. I didn't either until I did a little traveling around the country. I haven't seen anything like the Oak Leaf Trail anywhere else. As good as things are, they can still be better. Continued improvement of the Oak Leaf Trail and more mountain bike trails would rank high on my personal list. MORE DOG PARKS AND/OR FRIENDLY AREAS IN EXISTING PARKS!!! That would help with some of the waterfowl problems as well! And how the heck did we manage to lose an international event like Xterra?? Let's do whatever it takes to get it back!!! The Riverwest Trail Run and Alterra Ride the River events were a nice way to both use and support the trails. More events like that would be great. How about a Milwaukee County trail running series? Keep up all the good work. It's appreciated.

"Thanks much for all the work that has gone into this project so far. Please contact me for help with future needs."

"Would love to see more off-street trails with continuous connection between trails systems."

"Enjoy all the parks in the Story Hill Neighborhood, (Doyne, Jacobus, HAST, Mitchell Blvd, VA, new HAST west of VA, ...ride the Oak Leaf with group 50+ at least once a year, otherwise ride it most weekends from spring to fall. Thanks."

"Under-funding of trails."

"I am extremely concerned about the current condition of the parkway stretches of the Oak Leaf Trail. Sections in Greenfield Park, for example, have become dangerous for road cyclists (ruts parallel to tires)."

"Parks are the county's no one asset."

"Concern Re: Locating Oak Leaf Trail off road between 5th 100 and Burleigh St. Conversation of Hartung Quarry and current multi uses along Menomonee River

Parkway create large need for off road trail blind curves on road create dangerous mix-vehicle traffic users."

"Plow trails before paths in parks."

"After seeing the map of proposed trail development, I would like to suggest that the Milwaukee River proposed multi-use trail be extended to Port Washington Road. It is all public land on the east/north side of the river from Capitol on. If the trails are ever improved south of Capitol there will be increased traffic on the Northern section also. Seems foolish not to include the area for possible development."

"Oak Leaf Trail expansion in Kohl Park."

"I live just outside Milwaukee County and participate in several activities in and around Milwaukee that I enjoy commuting too. The trails and parkways provide an excellent way to get to these activities, but due to the low traffic demand of these roads, they are often over-looked for roadway maintenance making the ride rather bumpy. Providing the trails is important, but maintaining them should also be a main issue. Thank you kindly."

"I am a strong proponent of maintaining the county parks and not necessarily their expansion. I think our parks are a priceless asset and natural attraction in our community, and I would like to continue using them for many years to come, however, I currently see a decline in their maintenance which I believe is due to budget cuts. Very unfortunate."

"Great job with the bike trails!! I don't think bikes should be allowed in the woods by Ross Lodge. I think the wide trail to Anderson Lake will change it from pristine to trashed with eroded shore. Please include training for x-c ski trail groomer operator. Whitnall Park's trail this year and the last two have been terrible. This year is slightly better. Park management is difficult to locate/contact. There is an old trail system heading East to 76th street. It would be nice to see this groomed again. I don't think it is fair advertising to call it a Milwaukee bird trail when it only includes county owned properties. I bird watch. If I were to tell someone where to bird watch in Milwaukee County the best spots would not be in county parks. Ignorable Philosophical rant: Remember we need areas that are undeveloped. If you build something people will use it and if you survey them they will be happy. However, there are others that used it in its undeveloped state and they will be gone. Thanks for this chance to comment."

"I think the most important item to attend to is maintaining and repairing current trails. Some parts of the Oak Leaf Trail are just plain dangerous. The pot holes have become craters and it is difficult to ride."

"Trails for snowmobiling are important but it seems that it would be quite difficult to have a safe and desirable trail in Milwaukee County. Mountain biking,

hiking, cross country skiing, birding, and the like are easily maintained trails and do not need the considerations that a motor driven vehicle would require. I speak from experience here; as far as the mountain biking community is concerned...you will not find a more enthusiastic group that is willing to volunteer to assist in all types of trail construction and maintenance."

"For the past year I have been involved with the Metro Mountain Bikers Club. Since joining I have seen how much has been accomplished so far by this group and I have been involved in current projects and look forward to the future goals. Mountain biking in Milwaukee County is a great way to participate in a healthy activity while also fostering family togetherness. Tourism can be promoted to benefit local businesses and communities throughout the majority of the year. I have also used the local golf courses for cross-country skiing when snow conditions cooperate. I have noticed Waukesha County provides a more consistent group of groomed trails with some fees to offset this cost. Maybe Milwaukee County could look at this or associate with a user club/business to volunteer time or funding through their membership/clientele.

"The expansion of mountain biking trails is the top priority for myself and most of my friends. It can be done with relative ease and low cost."

"As a bicycle road rider I have found that the roads in the Milwaukee County Parks are for the most part in terrible condition. They are in need of resurfacing."

"Hi, I think you're doing a great job in expanding the trail for everyday traveling. Some of my concerns are all those kids that have to cross HWY 100 on the trail. Cars don't stop for them. This is getting very dangerous. They need lights and signs now. Some child is going to get hurt there. What about the section going east from Greenfield Park? What is the plan for that? It would be nice to get to the stadium. Anyway, you are doing a great job and your forefathers would be proud of you. Thanks a lot."

"WE LOVE, LOVE, LOVE OUR PARKS!! NATURE IS EXTREMELY IMPORTANT FOR MAINTAINING OUR SANITY."

"The bike route that goes along Drexel Ave between 13th and 27th street is very dangerous. The road is one lane each way and there is no shoulder on the road. Something needs to be done to make it safer for bikes."

"In addition to trails, road surfaces are poorly maintained along Menomonee River Parkway and Underwood Parkway in Wauwatosa and Milwaukee. A significant amount of cracks in the roads make road biking extremely rough and dangerous. I caught a crack in November along the Menomonee River Parkway and crashed, which resulted in a nasty break to my collarbone that needed to be surgically repaired."

"I mainly go to the S and N. Kettle Moraine and think they are fantastic. If I didn't live so far away (Illinois) I would volunteer. As soon as I move there in the next year or so, I will! Thank you!"

"I've concerns about personal safety on trails, particularly when cycling or hiking solo."

"It's important to keep snowmobiles and ATV's off hiking and other silent sport trails – to protect the trails and to maintain the silence many of us enjoy in the woods. The park system needs more staff and funds. I can see a big difference in out east side neighborhood in the quality of trails only because of Friends of Lake Park and the Urban Ecology Center and others have done the work. I think the main problem is that the current trails are not being maintained. Expanding trails is a wonderful idea, but first we need to take care of what is there now."

"Excellent trails were part of my decision to move to Milwaukee. I love them!

"I would like more connected off road trails throughout Milwaukee County."

"Many on road sections of the Oak Leaf Trail are in very poor to dangerous conditions and needs to be repaired or relocated to improve the safety of bike riders. Thank you."

"Connecting county parks to trails network is important."

"Something has to be done with the Oak Leaf Trail which runs on Drexel Ave. between 13th and 27th Street. It is very narrow; down to one lane road, and there is no shoulder at all. This road has 2 lanes before it and 2 lanes after 27th street. This stretch of road itself is very bad because it is full of holes and is all cracked up. Thank you."

"There needs to be improved monitoring of trails. Particularly, of unleashed dogs or dogs with very long leashes that are essentially free to wander. Trails need to be designed with adequate widths to accommodate multiple usages safely. The trails across busy highways, especially, need to be completed to provide adequate bike and pedestrian safety".

"I would like a telephone number posted at the parks and at the Oak Leaf Trail that I could use to call help and report users of the trails not obeying laws and park rules. For example people walking their dogs with out leashes or leashes that are 6' long blocking the bike trails."

"The Oak Leaf Trail along Underwood Creek east of 115th Street has a drainage problem. A spring flows across the trail. The trail floods for 4 months a year and ices during freezing temperatures. I have crashed on the ice when it was covered with water and I did not know it was there. Since the creek is next to the trail, the drainage

problem could be fixed easily with about 75feet of drain tile placed adjacent to the path and discharging to the creek. This really needs attention. This is my normal commuting route but I avoid it in cold weather because of the danger."

"One thing that has concerned me is that I see plenty of development of the park system as far as trails for biking, walking open areas etc. I would like to see a greater emphasis placed on wildlife habitat and maintaining it for the benefit of wildlife and not always putting human usage first. There are plenty of open areas... we don't need more. Case in point is at Grant Park at public area 2. This area has been a great birding area for many years and within the last month or so a crew has come in and completely denuded the understudy vegetation in the area. I understand there was some exotics there but there were also many native plants and now everything is just gone. I don't see any reason for that and the excuse I got from the crew working there was safety reasons...that aren't valid reasons at all. That was a very important area for migrant and resident birds and it's completely gone. There are plenty of areas for "people" I think its important to maintain areas for wildlife also. Also...why post dog, 'Dogs Must be on a Leash' signs, if it is never enforced? I've been out many times where people are running multiple dogs all over the park with no leashes. It would be nice to see that enforced... at least with people that can't control their dogs. Thanks."

"Snowmobile trails are wholly inappropriate for Milwaukee County and expansion should not be considered. Instead, please concentrate on issues that affect more than a tiny fraction of county residents, like controlling the invasive exotic plants."

"The Oak Leaf Trail between 13th and 27th streets on Drexel Avenue is hazardous to bicyclists. It is narrow, busy, and has NO shoulder. It needs to be widened with a shoulder, or, reroute the trail to a safer road for everyone."

"I would absolutely favor funding maintenance of existing paved bike trails. They need maintenance. I am less in favor of adding more pavement. I would prefer money to be spent maintaining existing pavement, including parkway roads to spending money on new pavement. I like to hike along the natural pathways in the county park system. I would prefer that they not be developed into mountain bike trails, at least not everywhere. Some aspects of the planned expansions look OK, but I believe we need to leave some areas in a more natural condition."

"The county has done a good job these last two years of maintaining the trails that we have. The snow plowing on a regular basis is particularly appreciated, however, there are many areas where trails should be added for the safety of both the running/walking public and vehicles. An example of this is the Menomonee River Parkway, North of Swan Blvd. People on foot here routinely dodge cars in order to run or walk. The improvements made 5 or 6 years ago south of Swan Blvd have increased use of this trail by many times over! I do think that as long as bikes and foot traffic share the same trial that it needs to be clear which side of the trail should

be used for which activity. For example, should runners use the left side against bike traffic and subject themselves to verbal abuse by bikers or the right side with traffic and risk being run over by a speeding commuter? There also needs to be some requirements or expectations that vehicles will warn people on foot. Some communities currently require a bell or a verbal warning."

"I'm concerned about the effects of mountain biking on the natural resources especially along the Milwaukee and Menomonee Rivers. If these trails are going to be designated then they should be relocated in many places to protect the banks of the river. There are also conflicting use issues—I've been nearly ran over by mountain bikes on at least a dozen occasions. In some areas the trails are barely wide enough to get out of the way without falling down the slope. These issues need to be dealt with. We also need to clearly demarcate put-ins and take-outs for watercraft along the Menomonee."

"Dog owners need to keep their dog under control at all times on a 3 foot leash if the dog needs to run they should move faster and not use a 20 foot leash. Signs reminding people that they are not the only ones using the trails and not to block it and stay to the side so other users can pass. Not using the path 3 wide with headphones on. When put new asphalt paths in make them wider."

"I think there also needs to be skill zones where children and novice riders can develop their riding abilities in an area that is maintained properly easy for them to access and others varying degree of difficulty, especially in areas of higher youth concentration (east side of Wauwatosa near south side.)"

"Trails ho!"

"Off road trails are my preference. Skiers, hikers, equestrians and bikers can share use and maintenance. The proposed extensions and connectors to the Oak Leaf Trail look great. Taking bike traffic off of the roads will improve safety as well as the enjoyment of the users and automobile traffic flow."

"I am strongly in favor of increasing/enhancing road and off road biking opportunities in Milwaukee County. By their nature the biking trails also become trails for hikers, birders, and other trail users. I believe that this plan is a good start for improving the entire county trail system."

"I do not support the expansion of the mountain bike trails. There are enough trial systems already in existence. Please redirect the funds into existing projects. The current Oak Leaf Trail needs priority up-grade including increased signage."

"The trails are good enough the way they are. Keep out! Spend the money maintaining the existing trail system. We don't need the county getting involved in the trail building."

"I actually live in the Honey Creek Parkway. Yes, it is nice, but what I find most disappointing is the roads through a majority of the parkways are awful. Driving the roads with my car is terrible. Riding my bicycle on them is even worse; potholes so big you can lose a bike tire in them. Attention needs to be on the roads where the trails currently exist."

"My top Oak Leaf Trail desires: Better maintenance, correct drainage issues – more signs to mark the trail – new trail construction should concentrate on connecting to other trail systems (like to the Brown Deer/Ozaukee Interurban, or to the Franklin/Muskego trail system, or to the MRK trail) and on taking more of the main OLT loop off municipal streets. (The 68th Street off-road trail is a great example.)"

"Primary mode of recreation/travel is bicycling. Mainly road for commuting and exercise. Multiuse paths are ok, but more dangerous than the streets and the streets are not anywhere near as safe as they could be. Bicycling is still the Rodney Dangerfield of vehicular transport. The lack of open bathroom facilities in public parks for a good portion of the year is deplorable. My friends and I ride almost year round (20 or above and dry roads are the parameters) throughout Milwaukee County and are deeply saddened by the lack of funding for the park system."

"Would like to see trail links with Racine, Ozaukee, and Washington County as well as a route over the Hoan Bridge connecting the Oak Leaf Trail along the lake near the Lake Express Terminal."

"I have had many pleasurable experiences while using the trail system. I think there needs to be more trash and dog waste receptacles throughout the trails."

Public comments via email:

02/11/2007

"One possible route not included in the plan is the old North Shore Line from Racine County to the airport (eastern side). A few sections (10 & 11) and the Oak Leaf Trail follows it a bit northeast of Drexel. But the route is still open and used by WE Energies. There are some breaks because of unbridged water courses."

03/11/2007

"New trail construction should be a high priority. I would rather see existing trails become relatively run-down, but yet get new trail miles. (Obviously there's a point where maintenance or reconstruction needs to be done) My reasoning is that the bigger the trail network, the more people that will have easy access to a trail. The more users for the overall system, the more political will there will be to satiate those user's demands for funding. Personally I want both maintenance and

expansion, but with finite funding, I think it will be better in the long-term if there are more trails.

Replacement of existing on-road municipal street trails with off-road trails should be as high of a priority as off-road trails in new corridors. The on-road segments of the OLT are not really trails to the casual cyclist, so adding a parallel off-road trail will add just as many trail users as a new off-road trail in a new corridor. Dedicated cyclists won't be gained, but they are already using the trails, no matter how close they are to a trail.

Guide signs should be a high priority. I'm talking about the 12" x 18" (or so) brown OLT signs. Casual cyclists will be very put-off if they can't follow a trail.

The needs of casual cyclists should be placed ahead of dedicated cyclists. Dedicated cyclists will use the trails and be cyclists no matter what you do. They are also a small part of the population. But casual cyclists can be a potentially huge part of the population. The more trail users you can get, the more political will there will be for trail funding.

Is there coordination being done with North-South I-94 Corridor Study (http://www.dot.wisconsin.gov/projects/d2/i94/index.htm) being done now? My concern is the Root River Crossing of I-94 at the county line. WisDOT needs to know to put trail facilities under those bridges.

I don't think Trail 11 is in the right spot. The MRK Trail in Racine is being reconstructed on an alternate route, north of six-mile road. I think it is going around the Oak Creek Power Plant.

Connections to neighboring trail systems should be prioritized highly. In particular Trail 6 and the connection to the Ozaukee Interurban Trail have the potential for an influx of users.

I would like to see Trail 6 rerouted slightly. Why not use the Rawson Road underpass of Highway 100 for a trail crossing? That would eliminate potential *vehicle/cyclist conflicts. And once you're east of Highway 100, just put the trail in the Whitnall Golf Course. I'm sure there's room to put a* trail in there somewhere to get *to the OLT.*

Once Trail 8 and 9 are completed, Trail 7 will be real nice to have.

Trails 4 and 18 are going to be great when they're done. Fortunately they're both in the process of becoming trails.

Trail 5 has great potential. It would be nice to have an off-road trail span the entire width of the county.

I don't have any good solutions, but the 84th Street segment of the E-W OLT is terrible. Riding from the Honey Creek Parkway to Lincoln Ave is unpleasant for dedicated cyclists, and nearly impossible or extremely discouraged for casual cyclists.

Trail 12 would be great. That part of the OLT has lots of traffic and is difficult to follow for unfamiliar riders. It would be nice to have two of the jewels of the OLT (Grant Park to Bay View Park; Downtown/Lake Loop/Estrabrook) connected by a comfortable trail.

Try to partner with Scout troops to get informational kiosks built along the trails.

The guide signs should have the name of the trail on it as well. e.g. 'Lake Loop, Main Loop, Lincoln Parkway Spur, E-W Connector.

One additional trail concept I see is from the end of new North Shore RR Trail in Oak Creek north to Trail 5. The trail could take Manitoba, then have an off-road path paralleling Howell to just north of Rawson, where it could traverse the MATC campus and end up at the south end of the corridor shown west of Mitchell Airport, between 13th and the RR tracks.

Thanks for taking the time to read my comments. I hope the new plan helps the Milwaukee County trail system to be the best it can be."

Wednesday, April 18, 2007

Results Summary

Show All Pages and Questions

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Total: 110
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Status: Enabled
Reports: Summary and Detail

1. Untitled Page

1. Which activities do you participate in and how many times a year? (answer only the activities that apply)

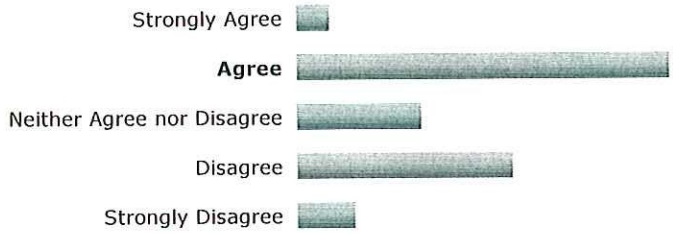
	0-10	11-20	21-30	31-40	40+	Respondent Total
Mountain biking	36% (25)	10% (7)	7% (5)	6% (4)	**41% (28)**	**69**
On-road biking	10% (10)	11% (12)	14% (15)	4% (4)	**61% (64)**	**105**
Hiking	26% (24)	**30% (28)**	16% (15)	5% (5)	22% (20)	**92**
Equestrain	**100% (36)**	0% (0)	0% (0)	0% (0)	0% (0)	**36**
Cross Country Skiing	**49% (37)**	31% (23)	15% (11)	1% (1)	5% (4)	**75**
Snowmobiling	**90% (35)**	5% (2)	0% (0)	3% (1)	3% (1)	**39**
Birding	**62% (34)**	11% (6)	9% (5)	2% (1)	16% (9)	**55**
Paddle Sports	**71% (44)**	10% (6)	11% (7)	2% (1)	6% (4)	**62**
Running	**45% (29)**	11% (7)	8% (5)	8% (5)	29% (19)	**65**
Commuting (ie. bike/walk to work)	27% (18)	12% (8)	12% (8)	3% (2)	**46% (31)**	**67**
					Total Respondents	**110**
					(skipped this question)	**0**

2. Milwaukee County trails currently meet my needs.

	Response Percent	Response Total
Strongly Agree	8.3%	9
Agree	**43.1%**	**47**
Neither Agree nor Disagree	16.5%	18
Disagree	32.1%	35
Stongly Disagree	0%	0

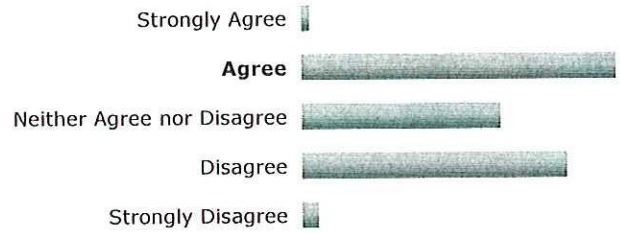
Total Respondents	**109**
(skipped this question)	1

3. Milwaukee County trails are maintained to an acceptable level.



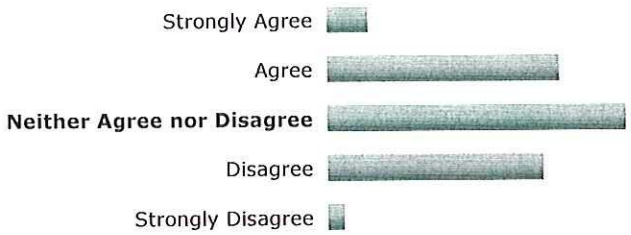
	Response Percent	Response Total
Strongly Agree	4.6%	5
Agree	**45.9%**	**50**
Neither Agree nor Disagree	15.6%	17
Disagree	26.6%	29
Strongly Disagree	7.3%	8
Total Respondents		**109**
(skipped this question)		1

4. Milwaukee County trails are adequately signed (way finding).



	Response Percent	Response Total
Strongly Agree	1.8%	2
Agree	**38.2%**	**42**
Neither Agree nor Disagree	24.5%	27
Disagree	32.7%	36
Strongly Disagree	2.7%	3
Total Respondents		**110**
(skipped this question)		0

5. Rules and allowable trail usuage are clearly posted.



	Response Percent	Response Total
Strongly Agree	5.5%	6
Agree	28.4%	31
Neither Agree nor Disagree	**36.7%**	**40**
Disagree	26.6%	29
Strongly Disagree	2.8%	3
Total Respondents		**109**
(skipped this question)		1

6. Would you support increased funding for developing and maintaining trails?

	Response Percent	Response Total

Strongly Agree	**65.1%**	**71**
Agree	28.4%	31
Neither Agree nor Disagree	1.8%	2
Disagree	0.9%	1
Strongly Disagree	3.7%	4
Total Respondents		**109**
(skipped this question)		1

7. How important do you think it is for expansion of the following trail types?

	Not Important	Somewhat Important	Important	Very Important	Extremely Important	Respondent Total
Snowmobile	**82% (79)**	11% (11)	3% (3)	1% (1)	2% (2)	**96**
Paddle Sport	18% (17)	30% (29)	**32% (31)**	11% (11)	9% (9)	**97**
Oak Leaf Trail System	1% (1)	1% (1)	16% (17)	35% (36)	**47% (49)**	**104**
Mountain Bike Trails	14% (14)	21% (20)	13% (13)	19% (18)	**33% (32)**	**97**
Cross Country Ski trails	7% (7)	19% (19)	**36% (36)**	20% (20)	17% (17)	**99**
Birding Trails	22% (22)	28% (28)	**33% (33)**	11% (11)	7% (7)	**100**
Commuter Trails	5% (5)	3% (3)	17% (18)	29% (31)	**46% (49)**	**106**
Hiking Trails	7% (7)	7% (7)	28% (29)	**38% (39)**	21% (22)	**104**
					Total Respondents	**110**
					(skipped this question)	0

8. Where do you currently live?

	Response Percent	Response Total
Milwaukee County	**84.5%**	**93**
Wisconsin (outside of Milwaukee County)	13.6%	15
The United States (outside Wisconsin)	1.8%	2
Outside the United States	0%	0
Total Respondents		**110**
(skipped this question)		0

9. What is your age?

	Response Percent	Response Total
0-17 years old	0%	0
18-29 years old	11.8%	13
30-39 years old	20.9%	23

40-49 years old	30.9%	34
50+ years old	**36.4%**	**40**
	Total Respondents	**110**
	(skipped this question)	0

10. What is your sex?

	Response Percent	Response Total
Male	**72.7%**	**80**
Female	27.3%	30
	Total Respondents	**110**
	(skipped this question)	0

11. Are you interested in volunteering to help maintain trails?

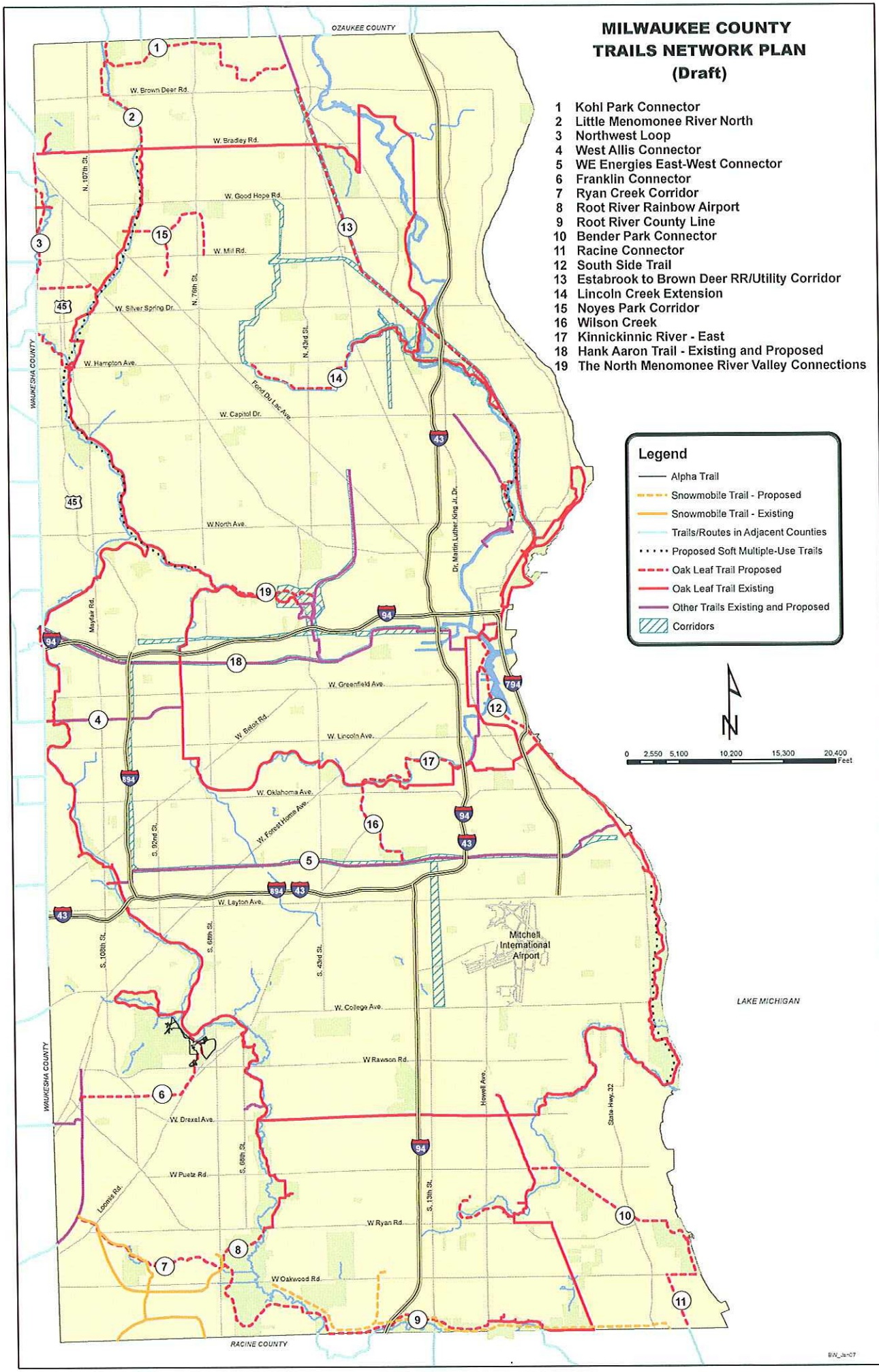
	Response Percent	Response Total
yes	**69.6%**	**71**
no	30.4%	31
	Total Respondents	**102**
	(skipped this question)	8

12. List your contact information (optional).

View	**Total Respondents**	**49**
	(skipped this question)	61

13. Please list any other comments or concerns. Thank you!

View	**Total Respondents**	**56**
	(skipped this question)	54


MILWAUKEE COUNTY
TRAILS NETWORK PLAN
(Draft)
1 Kohl Park Connector
2 Little Menomonee River North
3 Northwest Loop
4 West Allis Connector
5 WE Energies East-West Connector
6 Franklin Connector
7 Ryan Creek Corridor
8 Root River Rainbow Airport
9 Root River County Line
10 Bender Park Connector
11 Racine Connector
12 South Side Trail
13 Estabrook to Brown Deer RR/Utility Corridor
14 Lincoln Creek Extension
15 Noyes Park Corridor
16 Wilson Creek
17 Kinnickinnic River - East
18 Hank Aaron Trail - Existing and Proposed
19 The North Menomonee River Valley Connections
Legend
Alpha Trail
Snowmobile Trail - Proposed
Snowmobile Trail - Existing
Trails/Routes in Adjacent Counties
Proposed Soft Multiple-Use Trails
Oak Leaf Trail Proposed
Oak Leaf Trail Existing
Other Trails Existing and Proposed
Corridors
0 2,550 5,100 10,200 15,300 20,400 Feet
OZAUKEE COUNTY
WAUKESHA COUNTY
RACINE COUNTY
LAKE MICHIGAN
Mitchell International Airport
W. Brown Deer Rd.
W. Bradley Rd.
W. Good Hope Rd.
W. Mill Rd.
W. Silver Spring Dr.
W. Hampton Ave.
W. Capitol Dr.
W North Ave.
W. Greenfield Ave.
W. Lincoln Ave.
W. Oklahoma Ave.
W. Forest Home Ave.
W. Layton Ave.
W. College Ave.
W Rawson Rd.
W. Drexel Ave.
W Puetz Rd.
W Ryan Rd.
W Oakwood Rd.
N. 107th St.
N. 76th St.
N. 43rd St.
Fond Du Lac Ave.
Dr. Martin Luther King Jr. Dr.
Mayfair Rd.
W. Beloit Rd.
S. 92nd St.
S. 108th St.
S. 68th St.
S. 43rd St.
Howell Ave.
State Hwy 32
Loomis Rd.
S. 13th St.
45
43
94
894
794