RECREATION, LIBRARIES AND AUTHORITIES COMMITTEE

11-0552R

RESOLUTION ADOPTING THE PARKS AND RECREATION TRAIL AND BIKEWAY MASTER PLAN.

CITY PROPOSAL:

RESOLVED, that the trail and bikeway master plan is a plan of a comprehensive system of easily accessed and connected trails and bikeways and a plan for conserving key corridors for future sustainable trail and bikeway development.

FURTHER RESOLVED, the trail and bikeway master plan will help Duluth achieve its goal of becoming the top trail destination center in the Midwest.

FURTHER RESOLVED, that the city council finds the following:

(a) It is in the best interest of the city to adopt the trail and bikeway master plan;

(b) The city parks and recreation division along with other city staff, park and recreation commissioners and park planning consultants have developed, reviewed and recommended adoption of this trail and bikeway master plan;

(c) The city parks and recreation division has, after due public notice, conducted public hearings about this trail and bikeway master plan on the following dates: September 14, 2011, September 19, 2011, and September 21, 2011;

(d) The parks and recreation commission, at its October 12, 2011, regular meeting, did recommend, unanimously, to adopt the trail and bikeway master plan, on file with the city clerk as Public Document No. _____.

NOW, THEREFORE, BE IT RESOLVED, that the document on file with the city clerk as Public Document No._____ is adopted as the trail and bikeway master plan for the city of Duluth

Approved:

Department Director

Approved for presentation to council:

Chief Administrative Officer

Approved as to form:

Attorney

Approved:

Auditor

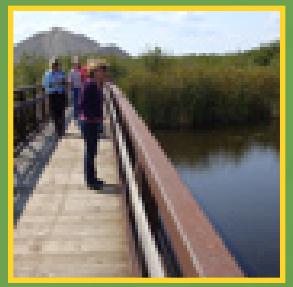
PARKS LP:slw 10/13/2011

STATEMENT OF PURPOSE: This resolution adopts a parks and recreation trail and bikeway master plan for the city. The trail and bikeway master plan is a sub-plan recommended under the city's parks and recreation master plan on file with the city clerk as Public Document No.11-0214-18(b). The adoption of this trail and bikeway master plan is based on the recommendation of the parks and recreation commission. The trails advisory group, consisting of representatives from every known trail user group, worked extensively with city staff and the park planning consultants to develop this plan.

OCTOBER 5, 2011

DULUTH, MINNESOTA

TRAIL AND BIKEWAY PLAN



T.A.C. - Trail Advisory Group

Brett Amundson, Hartley Nature Center
Tom Beery, University of Minnesota Duluth
Candy Barbo/Ed Barbo/Wendee Churchill, Equestrian
Anne Flueckinger, Duluth Cross Country Ski Club
* Judy Gibbs, Parks and Recreation, City of Duluth
James Gittemeier, Metropolitan Interstate Commission
Dick Haney, MIC/Fit City Duluth
Andy Holak, St Louis County Land Use
Hansi Johnson, International Mountain Bike Association
Tom Kasper, Building and Grounds, City of Duluth
Tim Larson, Skyline Preservation Alliance and Lake Superior College
Scott Marshall, Snowmobile clubs and Friends of the Lakewalk
Dwight Morrison/ Randy Vogt, Wheels on Trails
* Amy Norris, Parks and Recreation, City of Duluth
Cari Pedersen, Engineering, City of Duluth
Cindy Petkac, Planning, City of Duluth
Larry Sampson, Superior Hiking Trail Association
Adam Sundberg, Cyclists of Gitchee Gummi Shores
Eric Viken, Parks and Recreation Commission
* City Staff Liaison

Parks and Recreation Commission:

Thomas Beery
Joel Braun
Karen Erickson
Jacqueline Halberg
Andy Holak
Frank Jewell
Susan Beasy Latto
Patti Nadeau
Judy Seliga Punyko
Kristin Ridgewell
Barb Stark
Eric Viken
Jon C. Welles

Manager of Parks and Recreation:

Kathy Bergen

Mayor, City Council and City Administrator:

Don Ness - Mayor

Jeff Anderson: City Coucilor
Patrick Boyle: City Coucilor
Tony Cuneo: City Councilor
Todd Fedora: City Councilor
Jay Fosle - City Councilor
Sharla Gardner - City Councilor
Jacqueline Halberg - City Councilor
Dan Hartman - City Councilor
Jim Stauber - City Councilor

David Montgomery - City Administrator

CONTACT:

For further information about this Plan contact:

City of Duluth – Parks and Recreation
12 East 4th Street
Duluth MN 55805
218-730-4300

Consultant:

Hoisington Koegler Group, Inc.
123 North Third Street, Suite 100
Minneapolis, Mn 55401
612-338-0800 www.hkgi.com

TABLE OF CONTENTS:

Plan Summary

I. Introduction ..... page 1
- » Unique Setting, Opportunities and Challenges
- » Planning Process
- » Trail and Bikeway Benefits
- » Visions, Goals and Objectives

II. Existing Conditions ..... page 13
- » Existing Trail and Bikeway System
- » Existing Trail Plans

III. Evaluation, Needs and Opportunities ... page 23
- » Key Issues and Opportunities
- » Trail User Needs
- » Volunteer Involvement

IV. Trail and Bikeway Plans ..... page 35
- » Introduction and Approach
- » Trail Plan
- » Bikeway Plan

V. Implementation and Operations ..... page 58
- » Implementation Priorities
- » Funding Sources
- » Management and Maintenance
- » SIgnage and Wayfinding
- » Promotion, Awareness and Marketing
- » Trail and Biking Policy
- » Measuring Progress

Appendix ..... page A-1
- Trail and Bikeway Best Practices
- Best Practices for Sustainable Trails
- Trail Accessibility

Figures
- Trail Evaluation ..... page 31
- Bikeway Evaluation ..... page 33
- Trail Vision Plan ..... page 40
- Trail Plan ..... page 46
  - Trail Plan West ..... page 47
  - Trail Plan Central ..... page 48
  - Trail Plan East ..... page 49
- Bikeway Plan ..... page 53
  - Bikeway Plan West ..... page 54
  - Bikeway Plan Central ..... page 55
  - Bikeway Plan East ..... page 56

"Duluth should be the premier trail city in North America"

- Mayor Don Ness's challenge to the Duluth Trails Advisory Group.

PLAN SUMMARY

This Trail and Bikeway Plan is a guide and framework for the development and management of Duluth's trails and bikeways to create a comprehensive, connected and sustainable system serving residents, businesses and visitors. The Trail and Bikeway Plan builds on and adds additional detail related to trails and bikeways from the "Duluth Comprehensive Land Use Plan" from 2006 and the "Duluth Parks and Recreation Master Plan" from 2010. A series of great trails, varied terrain, exceptional scenery and passionate outdoor-oriented people will allow Duluth to realize its vision of being the premier urban trail center in North America. Duluth's trail and bikeway system has the potential to improve quality of life, foster economic development, preserve and enhance natural resources and enhance community and individual health and enjoyment.

There are challenges to realization of this Vision. Funding for maintenance, ordinance enforcement and construction is tight. The current trail system lacks connections, and there are few safe and convenient on-street bikeways or paved trails. However, the physical assets and community support for trails and nature outweigh the challenges. This Plan builds on existing trail resources and includes exciting plans for new trails, bikeways and trailheads. It will take time, commitment and resources (money and people) to implement this Plan, but the benefits justify the effort. Subsequent site-specific planning and design actions are needed to implement this city-wide plan and to realize the vision of Duluth being the premier trail city in North America.

Highlights of this Plan are:

- **Four differing across the city trail experiences** - the Munger-Lakewalk paved trail, the natural surface Superior Hiking Trail, a more pedestrian and bicycle friendly Skyline Parkway and the Duluth Traverse, a multi-use natural surface trail.

- **New trails in underserved areas** – New trails proposed for the Mall area, the Duluth Heights area and western Duluth, including improvement of the DWP trail and St Paul & Mississippi railbeds.

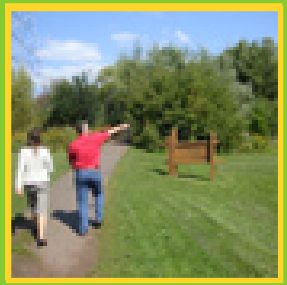
- The improvement and addition of **up and down trail routes** connecting the lakeshore and ridge top. Many of these routes follow stream, park and natural resource corridors.

- **New trailheads and way-finding signage**. To enhance and increase use of existing and planned trails.

- **New on-road bike lanes, bike boulevards and bike routes**. To make the City bicycle friendly.

BAYFRONT FESTIVAL PARK

DULUTH
Trail and Bikeway Plan



CHAPTER 1

Introduction

Duluth attracts outdoor-oriented
people to live, work, play and visit.

INTRODUCTION

This Trail and Bikeway Plan represents a vision and action plan designed to make Duluth the premier trail city in North American for bicyclists, pedestrians, and outdoor enthusiasts. Duluth has a good, but unconnected set of trails that form the backbone of this Plan. The Plan builds on Duluth's assets – terrain, scenic views, nature and passionate committed people. The Plan content is based on community and stakeholder guidance and builds on and brings together the previous plans for trails and bikeways into a cohesive focus and exciting vision for the future.

Unique Setting, Opportunities and Challenges

Duluth, Minnesota is a city of 86,265 people located on the southwest shore of Lake Superior. The City hugs 26 miles of the lake shore and a prominent ridge rises up 800 feet from the lake allowing stupendous views and challenging routes for bicycle or pedestrian movement. Duluth has several existing nationally and regionally important trails and corridors - the Lakewalk, the Superior Hiking Trail, the Munger Trail and others. Skyline Parkway is an extraordinary scenic road and State scenic byway that links parks, green space and neighborhoods. There are also several clusters of existing natural surface trails which provide great year round recreation opportunities for hikers, bikers, skiers and others. Duluth residents and visitors are passionate about trails and are enthusiastic trail users. Many people moved to Duluth to "be close to nature" and trails are a fundamental element of Duluth's quality of life.

Trails are a huge economic and tourism opportunity for Duluth and the surrounding region.

The City of Duluth recently adopted a "Complete Streets" policy which is designed to encourage creation/renovation of streets to consider serving all users - pedestrians, bicycle, transit and vehicles. This policy directive encourages multi-modal use of Duluth's streets and encourages the addition of bike lanes, off road trails, sidewalks and sharrows.

Duluth's Mayor Don Ness stated a goal for Duluth to become the premier trail city in North America. With its terrain, lakefront, views, natural resources, four season climate, existing trails, and passionate people and businesses, the City has many great assets to build on to make that goal a reality.

There are some significant challenges to realizing that goal such as:

- Connecting the trail system.
- Maintaining the trail system.
- Raising awareness and improving access to trails.
- Adding bikeways in a built environment.
- Enforcement of current ordinances regarding tree destruction, illegal off-road motorized use, loose dogs, dumping and litter on bikeways, scenic vistas, parks, trailheads and trails.
- Challenges of terrain, climate and soils.

This Plan recommends actions to address these challenges.

Definitions:

Natural Surface Trails: Unpaved single track trails like the Superior Hiking Trail and Cyclists of the Gitchee Gummee Shores trails.

Gravel Trails: Crushed rock (gravel) trails like Western Waterfront Trail

Paved Trail: Bituminous surface trails like the Lake Walk

Purpose Built Trails: Trails designed and built to sustainably handle a particular or variety of uses, terrain and environmental conditions.

Bike Lane: Striped lanesafor one-way travel on a roadway

Bike Route: Shared motor vehicle and bicycle use and is typically identified with signage.

Sharrows: Pavement marking indicating shared bicycle and automobile traffic. Alerts all users to cyclists, improves wayfinding, helps cyclists position themselves in the roadway.

Bike Boulevard: low traffic street with shared bike – motor vehicle traffic. Street treatments include traffic calming, bike signage and pavement markings. Street has an emphasis on the presence of pedestrians/bicyclists.

Duluth Trails Advisory Group Meeting

Planning Process

This Trails and Bikeway Plan builds on a wealth of previous plans and relies on the wisdom of Duluth residents, stakeholders, officials and staff. A 22 person Trails Advisory Group (TAG) consisting of representatives of the City, St. Louis County, the Duluth-Superior Metropolitan Interstate Council (MIC - the regional planning agency), trail user groups, schools and community members helped shape the content of this Plan. See the inside cover page for a list of the TAG members. In addition to TAG guidance, input was gathered at a trail stakeholder meeting, meetings with trail user groups, interviews, trail and bikeway planning sessions and from the 2009 Duluth Parks and Recreation Community Survey.

The Plan utilized and combines City, MIC, Duluth Area Trails Alliance, FIT City, user group and partner plans and plans from adjoining communities to created a vision for a connected and comprehensive network of trails and bikeways.

Community open house meetings were held in September 2011 to gather public input on the Draft Trail and Bikeway Plan. That input and review by the Duluth Parks and Recreation Commission helped shape the final plan.

Community Open House Meeting

Trail and Bikeway Benefits

Trails and bikeways bring livability, mobility, health, economic and the environmental benefits to Duluth.

Some benefits of a connected trail and sidewalk system for Duluth are:

Popular and cost effective - Trails and sidewalks are usable by all ages and abilities. Trails are one of most desired recreation features. Trails and sidewalks allow self-directed recreation (no staff or programming required).

Promote healthy active living - Trails and sidewalks provide health benefits and exercise while going about

POPULARITY OF BICYCLING AND WALKING

In 2009 50% of Minnesotans, more than 2.6 million people, road a bicycle. Bicycling is big business in Minnesota and provides numerous benefits. Separate reports on the bicycle industry, bicycle-related tourism and trail use by bicyclists show the economic impact to be in excess of $1 billion per year, which is more revenue than hunting and snowmobiling combined. Nationally, bicycling has more participation than hunting or fishing and has the same participation as golf, skiing, and tennis combined.

(5)

HEALTH BENEFITS OF TRAILS

Minnesotans spent $1.3 billion in 2004 on preventable diseases attributable to lack of physical activity ($250/year/person). 63% of Minnesota adults are overweight and 25.3% of adults are obese. Trails can help people be physically active and reduce health care costs.

(6)

daily activities. Trails and sidewalks improve individual and community health and reduce health care costs.

Provide environmental benefits - Allow people to connect with nature. Save energy and reduce emissions.
Encourage economic development - Promote tourism.

Over 50% of Duluth residents indicated great support for a temporary or permanent tax increase for additions to and extension of existing bike/walk trail. Source: 2009 Duluth Parks and Recreation Community Survey (7)

Attract residents and businesses. Increase property values.

Enhance quality of life and community livability - Build sense of community. Foster social interaction. Connect people and neighborhoods.

Increased transportation options and mobility - Commuting, errands, to/from school, options for non-drivers (1/3rd of population), recreation and transportation roles, essential for an efficient transit system.

ECONOMIC BENEFITS FROM TRAILS

A 2007 study by the University of Minnesota Tourism Center analyzed the economic benefits of trail use in Minnesota. The study found that non motorized trail use (walk, hike, run, bike, ski, skate and horse riding) in Minnesota accounts for $2.1 billion a year in economic benefits.

A 2010 study by the University of Massachusetts showed that pedestrian and bicycle infrastructure projects create more jobs that road projects. This is due to the labor intensive nature of pedestrian and bikeway projects vs. the more material focused/ less labor intensive road improvement projects. The study evaluated direct and indirect jobs created $1,000 of spending on the different infrastructure improvements.

Commmunity Economic Benefits

In Minnesota, nearly 1.5 million cyclists, inline skaters, cross country skiers and walkers use city, county and state trails. These trails are a quality of life issue for residents, as well as luring tourists who don't have access to the number and variety of trails as Minnesota does. Other than a quality of life issue, trails are an economic boon to the state, cities and counties as well.

Lanesboro, on the Root River Trail in southeastern Minnesota, is an example of the economic impact a trail can have. Pre- and post-trail Lanesboro, a town of about 800 residents, differ dramatically. Post-trail Lanesboro boasts 12 B&Bs (with year-long waiting lists), eight restaurants, an art gallery, a museum, and a thriving community theater well-off enough to offer housing to its actors. Economically speaking, the Root River Trail has been very, very good for Lanesboro.

Nationally, trail-related expenditures range from less than $1 per day to more than $75 per day, depending on mileage covered. Generally, it has been found a trail can bring at least one million dollars annually to a community, depending on how well the town embraces the trail. For a town like Lanesboro, a trail can mean an annual economic impact of more than five million dollars.

Source: The Economic and Social Benefit of Trails - AmericanTrails.org

Property Benefits

Countless studies show that properties within one mile of a trail corridor, passive park nature area or greenway have a higher property value than similar properties that are located more than one mile from trails or parks. The property value increase from passive parks and trails can be up to 10% for properties close to attractive trails.

Source: The Proximity Principle by John Crompton.

Furthermore, 70% of real estate agents use trails as a selling feature when selling homes near trails. 80.5% of them feel the trail would make it easier to sell. On Seattle's most popular trail, homeowners with properties near, but not adjacent to the trail, sold for an average of 6% more than comparable property elsewhere. Additionally, the U.S. National Park Service notes that increases in property values range from 5 to 32% when adjacent to trails and greenways.

ATTRIBUTES OF A PREMIER TRAIL CITY

- Convenient access and close proximity to trails and bikeways (i.e. a trail or bikeway within walking distance of most schools and residents).
- A connected network of trails and bikeways linking destinations and residents, schools and businesses.
- A variety of trail experiences in terms of terrain, distance, challenge, views, amenities and surfaces (paved and unpaved).
- Trails that are suitable for all ages and abilities.
- Trails available for four season use, including cross-country skiing, snowshoeing, snowmobiling as well as walking, running and biking in the winter.
- Easy access to trails and trailheads and legible, easy to follow trails.
- Loop trails, trails in nature and with scenic views.
- Well maintained safe trails and trailheads. Adequate resources and suitable design to assure a sustainable trail and bikeway system.
- Trails and bikeways integrated into the fabric of the community, including passionate and involved trail supporters, officials and businesses.
- Actions to create complete streets that are usable by pedestrians, bicyclists, people with disabilities and transit as well as vehicles.

VISION, GOALS AND OBJECTIVES

Vision:

To be the premier trail city in North America.

Goals and Objectives:

The goals and objectives of the Duluth Trail and Bikeway Master Plan are to:

1. Create a coordinated and connected system of trails, bikeways and trailheads.

a. Create continuous trail/bikeway connections across the City and "up and down" connections between the waterfront and the ridgeline.

b. Connect neighborhoods to trails and trails to destinations including currently underserved areas.

c. Create loop trail opportunities, where possible.

d. Improve pedestrian and bicycle connection to schools.

e. Coordinate Duluth's trail and bikeway plans with the Duluth Comprehensive Plan, transportation and park plans, County and regional plans and trails and bikeways in adjacent communities.

2. Guide trail and bikeway improvements, maintenance and operations.

a. Include recommendations for trail and bikeway routes, trail and bikeway uses, surface materials, and implementation strategies (priorities, funding options, operations and maintenance).

b. Support implementation of the City's Complete Street's policy through inclusion of pedestrian and bicycle facilities into new roadway projects and existing roadway improvement projects, as appropriate.

c. Improve City-County coordination and cooperation for use of and revenue from tax-forfeited lands.

3. Improve safety and enhance trail and bikeway use.

a. Improve access, awareness and legibility of trails and bikeways with plans for trailhead locations, way-finding signage and access to trail and bikeway maps and information.

b. Improve safety and enhance trail and bikeway user's experience.

c. Improve the accessibility of trails for all through the use of universal design principles.

d. Actively market and promote Duluth's trails and parks.

e. Enhance coordination of trails and bikeways with transit.

4. Create a sustainable system of trails and bikeways.

a. Use sustainable methods for trail and bikeway construction, maintenance, funding and operations.

b. Utilize trails as tools to support local businesses and encourage tourism.

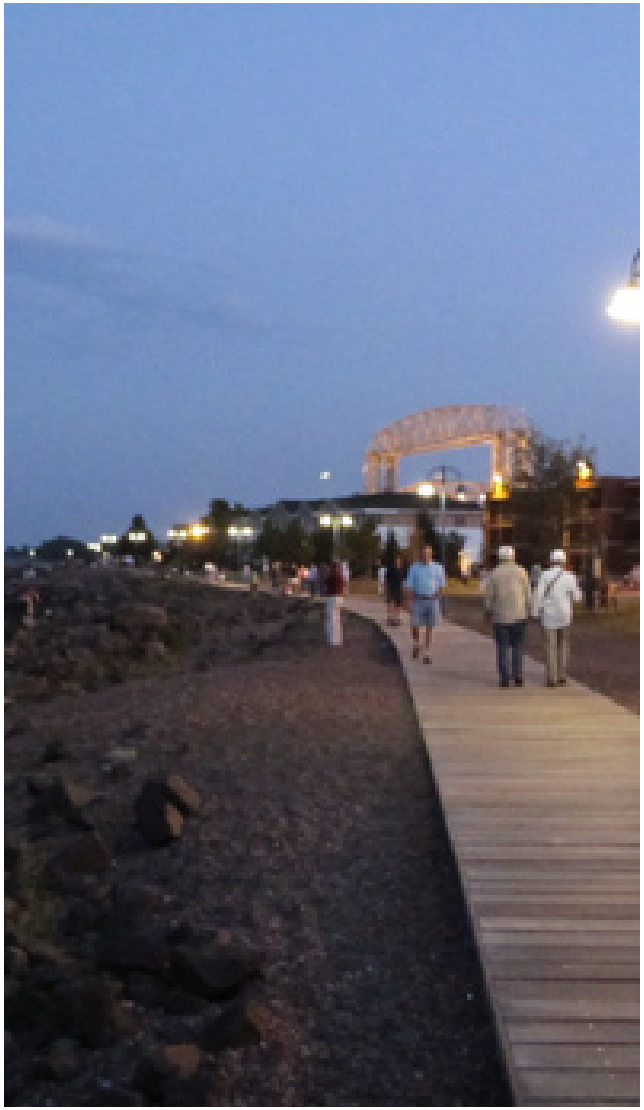
c. Build community support for trail and bikeway improvements.

d. Raise awareness of the benefits of trails and bikeways.

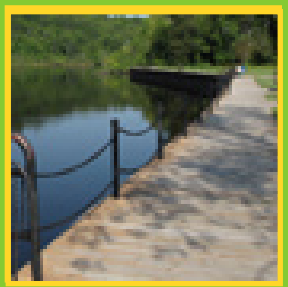
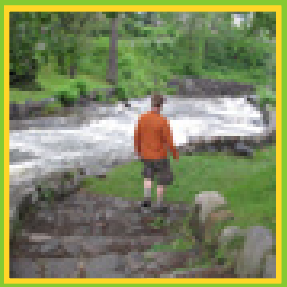
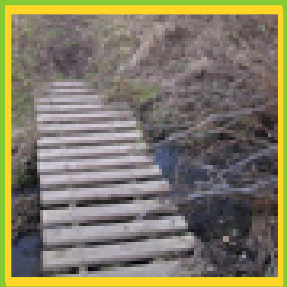
e. Utilize existing trail and bikeway plans, and build on the existing network and resources.

f. Engage stakeholders and the public to define and help implement the trail and bikeway network.

g. Positively influence policies and revenue to enhance trail and bikeway maintenance and construction.



DULUTH
Trail and Bikeway Plan

CHAPTER 2

Existing Conditions

2. EXISTING CONDITONS

Existing Trail and Bikeway System (2011)
Duluth has a range of trails from highly visible and well used trails like the Lakewalk, Munger, and Superior Hiking Trail to local trails that connect neighborhoods to local parks and natural features.

There are over 220 miles of existing trails in Duluth. Of that amount around 80 miles are City managed trails and around 40 miles are managed by other entities such as the Superior Hiking Trail Association and the State of Minnesota. About 100 miles of trails are user created natural surface and are not maintained by any organization.

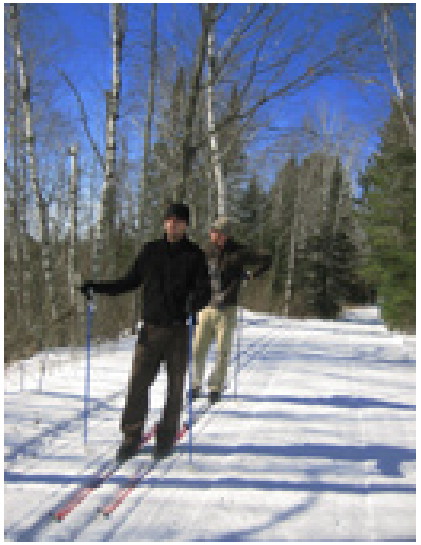
A large part of the Duluth trail experience are publicly accessed trails located on non-city lands such as on school property, State land, private property and on tax forfeited County-owned land. While this Plan focuses primarily on the City system, it seeks to connect city and non-city trails, assure public access to key trails and raise awareness and improve access to all trails as appropriate.

Most trails in Duluth have a natural surface. There are only 16 miles of paved/gravel trails in Duluth (Lakewalk, Munger, and Western Waterfront Trails). There are eight summer recreation trails with a total of 55 miles of hiking trails and 13 miles of multi-use mountain bike trails. There are approximately 13 miles of handicapped accessible trails in Duluth.

There are around 100 miles of winter use trails, consisting of 45 miles of snowmobile trails and 55 miles (89 Km) of cross country ski trails.

In addition to the cross country ski trails Lester golf course is designated for ski-joring (dogs helping to pull cross country skiers).

Duluth has one privately owned trail center called Snowflake Nordic Ski Center that has played an important role in the Duluth cross-country ski community. Snowflake Nordic Center is open to the public with either a purchased daily or season pass. Snowflake has some key advantages over the public trails. Snowflake Nordic Center has a ski chalet complete with changing rooms, restrooms, showers, meeting space and wax rooms. Snowflake also offers four Km of lighted skiing in the evenings. Lester Ski trails are the only other lighted ski area near Duluth and it is located about 20 minutes away from Snowflake making it much less accessible to some parts of Duluth. Snowflake also uses snowmobiles to groom, grooms more frequently, and grooms at optimum times such as at night so their trail conditions are often better than city ski trails especially in low snow conditions. The heavier grooming equipment used by the city is often not useable in low snow conditions because it tends to churn up debris from below the snow. One last advantage is that Snowflake is located up over the ridge near the airport so it often holds snow earlier and longer than the other Duluth ski trails which are closer to the lake and thus warmer. Because of this Snowflake often opens several weeks earlier and closes several weeks after the rest of the Duluth ski trails.



GROOMED CROSS COUNTRY SKI TRAILS

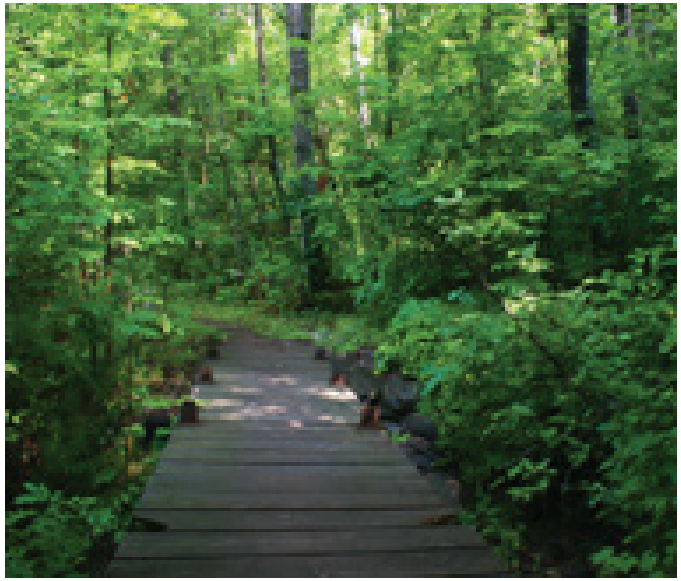
- Magney-Snively Ski Trail – 14K
- Spirit Mountain Nordic Center – 22K
- Piedmont Ski Trails – 5K
- Snowflake Nordic Center – 15K (Private)
- Chester Bowl Ski Trails – 3K
- Bagley Nature Center – 2.7K (University Minnesota - Duluth)
- Hartley Ski Trails – 5K
- Lester Ski Trails – 15K

Duluth has a number of trails that are of importance to the region, state and nation:

The Lakewalk is currently a 7.3 mile long paved multi-use trail that follows the Lake Superior shoreline from Bayfront Park to 26th Avenue East and runs inland and parallel to the lake from 26th Avenue to 60th Avenue East. The Lakewalk is a very popular trail corridor which connects several parks, beaches, neighborhoods, Canal Park and downtown. Plans call for the Lakewalk trail to be extended from 60th Avenue East to Kitchi Gammi Park (Brighton Beach).

Superior Hiking Trail is a 277 mile long natural surface footpath that largely follows the rocky ridgeline above Lake Superior from Duluth to the Canadian border. Thirty-nine miles of the trail pass through the City of Duluth. The trail was built and is maintained by volunteers through the Superior Hiking Trail Association. The trail through Duluth was constructed and will become part of the national long-distance hiking trail, The North Country Trail, which spans from Vermont to North Dakota.

The Willard Munger State Trail is a 63 mile long multiple-use paved trail between Hinckley and Duluth. The Munger Trail within Duluth ends at a trailhead located at Grand Ave. and 75th Ave. West.



While not a true trail or current bikeway, Skyline Parkway is a 25 mile scenic roadway that generally follows the contour of what used to be the beach line of Glacial Lake Duluth for the length of Duluth. Skyline Parkway is used extensively by walkers, runners, bicyclists and other users as well as drivers. The far western section of that Parkway once was used by automobiles, but currently only serves as a rustic trail due to the wash out of the old road bridges.

The Duluth Traverse is a planned multi-use natural surface trail system to span the City. The trail will connect several hubs of multi-use trails from Lester-Amity, Hawk Ridge Nature Reserve, Hartley Park, Central Park, Piedmont Recreation Area, Brewer Park, Spirit Mountain and Mission Creek Park. Currently, 30 miles of the Traverse have been constructed, including the 19 miles planned for construction in 2011. A total of 54 miles of Traverse construction will complete that trail. Additional multi-use mountain bike trails are to be constructed at Mission Creek, Spirit Mountain, Brewer Park and Central Park.

Duluth does not have any striped on-street bike lanes and only a one mile long sharrow (portion of a roadway lane having painted bike and arrow symbols). Duluth has an extensive 50 mile network of signed bike routes. These bike routes are mapped by the MIC and have directional

signage and in some cases the roadways are posted with share the road signs. There are many parts of Duluth that are isolated by busy roads with no shoulders and are difficult to navigate through on bicycle or by walking because of a lack of trails, bikeways or sidewalks. Bicyclists are forced to either take non-bike friendly roads or go out of their way to find a less traffic intense option. Some examples of non-bike friendly areas are Arrowhead Road west of Kenwood and Central Entrance to the mall area.

There are several parks and recreation areas with concentrated grouping of trails that serve hikers, bikers, skiers and other trail users. These include: Fond du Lac Park, Magney Snively Park, Spirit Mountain, Piedmont Recreation Area, Kingsbury Creek, Chester Bowl, Bagley Nature Center (UMD), Hartley Park, Hawk Ridge Nature Reserve, Lester/Amity Park and the junction of the Munger and Western Waterfront Trails. There are also stand-alone trail systems: the Web Woods Walking Trail, Park Point Hiking Trail, Grassy Point Trail and the public Lake Superior College trail.

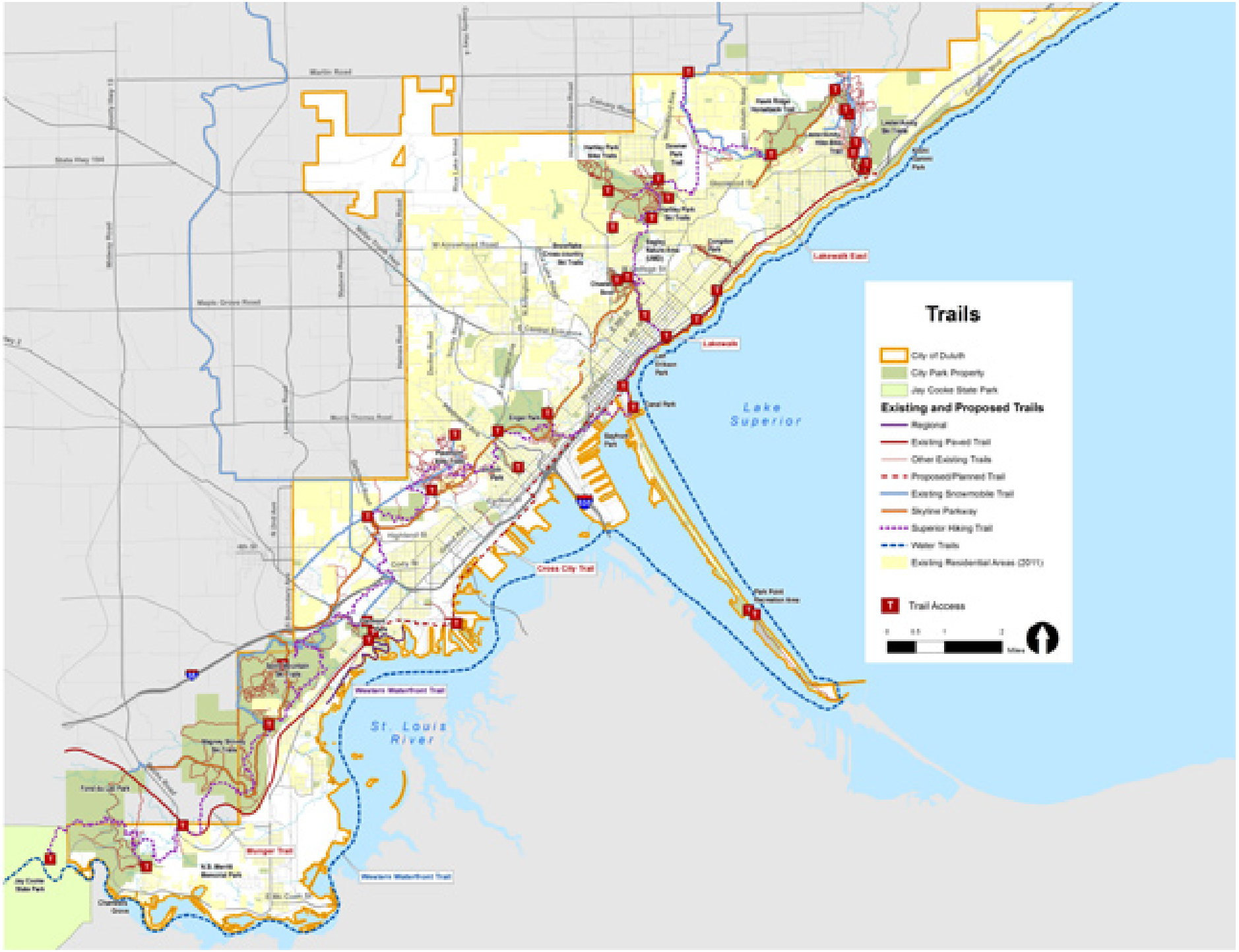
Existing Trail Plans

Significant planned trails in Duluth include the Cross City Trail, the Lakewalk Extension, and the Duluth Traverse Trail. Existing plans for these trails were incorporated into this Trail and Bikeway Plan. Other trail extensions are anticipated although not in the planning phase such as the Western Waterfront Trail expansion.

Skyline Parkway

The Skyline Parkway Corridor Management Plan calls for improvements along Skyline Parkway to make it safer and more usable for pedestrians and bicyclists.

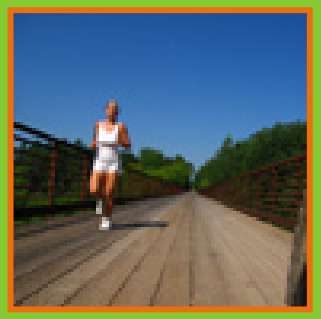
Plans, policies and recommendations from; the Duluth Comprehensive Plan, the Duluth Area Trails Alliance, Wheels on Trails, COGGS, FIT City, the Duluth Cross Country Ski Club, the Duluth Horse Trail Alliance, the Duluth-Superior Metropolitan Interstate Council and surrounding communities helped shape the trail and bikeway plans.


Trails
City of Duluth
City Park Property
Jay Cooke State Park
Existing and Proposed Trails
Regional
Existing Paved Trail
Other Existing Trails
Proposed/Planned Trail
Existing Snowmobile Trail
Skyline Parkway
Superior Hiking Trail
Water Trails
Existing Residential Areas (2011)
Trail Access
Miles
Lake Superior
St. Louis River
Lakewalk East
Lakewalk
Cross City Trail
Western Waterfront Trail
Munger Trail

(19)

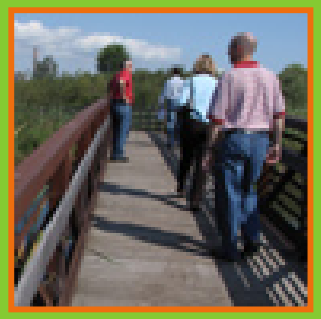
The Good News

- Extensive network of natural surface trails
- Diverse variety of trails



- Trails are well loved
- Trails of national stature and regional significance

- Committed and passionate trail groups & volunteers



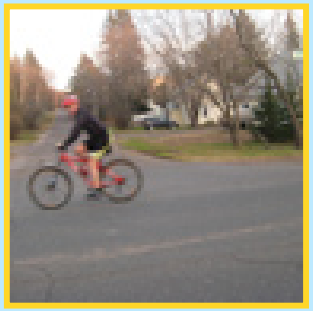
- Excellent natural resources, scenery and terrain

- Skyline parkway has exceptional potential as a pedestrian an bicycle route

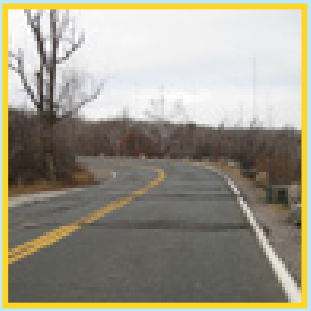
The Bad News

- Lack of a connected trail system. Trail erosion issues and trail signage needed

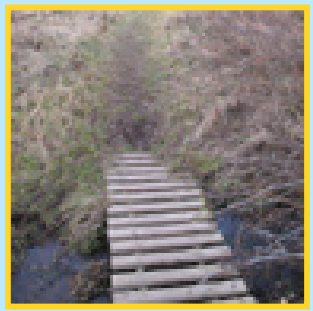
- Lack of safe and connected on-street bikeways
- Trail damage from illegal ATV use



- Skyline Parkway is not well connected to neighborhoods or safe for walkers or bikers

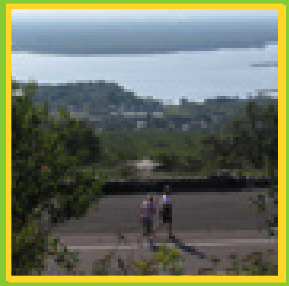


- City resources are needed to maximize benefit of volunteers and partner organizations



- Trail maintenance needs exceed budget and staff resources - resulting in reduced maintenance and upkeep of some trails

DULUTH
Trail and Bikeway Plan



CHAPTER 3

Evaluation, Needs and Opportunites

Trails are the most desired
and well used recreation
feature in Duluth.

3. EVALUATION, NEEDS AND OPPORTUNITIES

Duluth has some great linear trails such as the Lakewalk and Superior Hiking Trail and groupings of natural surface trails (Hartley Park, Lester/Amity Park, Piedmont Recreation Area and others), but lacks a connected system of trails. Beyond the Lakewalk there are very few paved trails in the City. There are many miles of designated bike routes, but few bikeway facilities (such as bike lanes, sharrows, bike boulevards, etc.). In general, Duluth area roadways are not bike friendly and terrain and traffic barriers currently prevent many people from riding.

There is a need for safe facilities for the family and average bicyclist. There are many natural surface trails, but few of these trails were purposefully built to withstand public use. There are erosion issues on some trail sections and a few trails are located in areas of such poor soils (Magney Snively and Mission Creek) that trail maintenance is likely to be a continuous issue. In those areas in particular, it is imperative that illegal motorized ATV use be eliminated.

The steep terrain and existing developed area limits the opportunities to connect the lake front with the ridge top and makes bicycling uphill more challenging. However, there are existing parks, stream corridors and roadways that can be enhanced to create important trail and bikeway connections.

Winter conditions can be challenging to bicycling and walking, but allow for cross country skiing, snowshoeing and snowmobiling. Changing climatic conditions can cause issues for snowmobiling and cross county skiing. Saftey and dumping are issues at trailheads and on some trails. There are opportunities to create a new multi-use regional trail using the abandoned DWP railroad corridor. Skyline Parkway makes an excellent location for future trailheads and can better serve pedestrians and bicyclists.

Key Issues and Opportunities

Connecting the system

- Duluth has many great trails and clusters of natural surface trails, but lacks connections between those trails.
- The terrain which allows views and adds interest and variety to trails also makes it difficult to connect the lake front with the ridge top.
- Connecting existing trails with new routes across the city and up and down the ridge will create a trail system that residents and visitors can enjoy.
- Better trail and bikeway access is need to area schools and colleges.
- The downtown area lacks safe and convenient bikeways.

Actions Needed:

» *Cross-city routes – complete the "missing links" between existing trails to create continuous trails across the length of the City.*

» *Cross-city trail routes are needed along the lakeshore and along the ridge top.*

» *Up and down trail routes are needed between the lakeshore and the ridge top.*

» *Trail connections are needed from the Mall area/Duluth Heights to the ridge top and lakeshore trails.*

» *Better trail and bikeway connections are needed to and from schools and in and out of downtown.*

Maintaining the trail system

- Due to current tight budget conditions, Duluth is challenged to maintain the current trail system. Volunteers have been instrumental in supplementing City efforts to maintain and improve the trail system. Even with that combined effort there is a need for trail and infrastructure improvements and enforcement of current ordinances to protect the current system.
- There are many erosion problems on existing trails. Work is needed to eliminate erosion causes, restore damaged areas, harden the trails to reduce maintenance needs and make them more sustainable.
- The four season climate allows for a wide range of trail uses, but conditions can be challenging. Spring thaw and rainy periods make natural surface trails unusable at times, especially those not purpose built. Fall presents challenges with freeze-thaw cycles that force water upward, expecially in highly organic soils such as in the Magney-Snively area.
- As additional paved trails and bike lanes are added, demand for winter trail plowing will increase.
- Better enforcement of trail use regulations is needed (ATV use, off leash dogs, dumping, etc.)

Actions Needed:

» *Increased resources for trail maintenance.*

» *Identification of specific infrastructure failures and planning for replacements and repairs to prevent further trail deterioration.*

» *Further coordination, recognition and use of trail volunteers is appropriate.*

» *Repair, restoration and in some cases or closure of some trail sections to create a more sustainable system.*

» *More effective methods of communicating information about proper trail use, seasonal trail closures and trail etiquette.*

» *Law enforcement designated to patrol parks, trails, parking areas and scenic overlooks.*

» *Design a tiered approach for trail designation.*

Raising awareness and improving access to trails

- Many existing trails are hard to find, difficult to access and challenging to follow.
- Trailheads are needed to enhance access.
- A system of way finding signage is needed along with trail and bikeway system maps at trailheads, on-line and at key community places.
- Many trails are not handicapped accessible.
- The Duluth Heights and Mall area lack trails and bikeways.
- There is limited local access from the western part of

the City to the Munger Trail and trails in Fond du Lac and Magney Parks.

- Duluth is not capturing the full economic benefits of their trail and park system.

Actions Needed:

» *Add trails in underserved areas.*

» *Add trailheads at key locations.*

» *Add connections to existing trails.*

» *Design and construct a coordinated trail way-finding signage system.*

» *Continue to improve accessibility on existing trails and use ADA and universal design principles for new trails, trailheads and facilities.*

» *Further promote and market Duluth's trails.*

» *Identify accessible trails on maps and on the city web site.*

» *Consider holding an "Economic Benefits of Trails" summit in Duluth.*

Adding bikeways in a built environment

- Duluth has a good network of signed bike routes, but few facilities to make bicycling safer and more convenient.
- There is a lack of bike lanes and paved off street trails.
- The presence of high speed, high traffic roads make bicycling and walking unpleasant and at times unsafe.
- The largely developed status of the City can make retrofitting roads to be more bicycle friendly challenging.
- The City's Complete Streets policy provides positive policy direction to create a network of streets that are safe, attractive and comfortable access and travel for all users (pedestrians, bicyclists, motorists and public transit).

Actions Needed:

» *Add new paved trails as appropriate.*

» *Add bike lanes, sharrows and bike boulevards.*

» *Create a network of Complete Streets.*

» *Add bikeways in downtown and to other key destinations such as schools, neighborhood commercial area and the Mall area.*

Trail User Needs

Hiking/Walking/Running

Better access is needed to the existing network of multi-use trails and to the Superior Hiking Trail. More frequent connections between the lake and the ridge are needed for pedestrians and Skyline Parkway can be made safer for pedestrian use. A connecting corridor in particular is needed to connect Grand Avenue and the Norton Park community with Skyline Parkway and the Magney/Spirit Mountain trail system. Old roads, which were built directly on the fall line, have eroded to the point of being dangerous to users and dump sediment into waterways.

Bicycling

Road Biking

Additional paved trails are needed to serve bicyclists of all ages and abilities. Bike friendly facilities such as bike lanes, sharrows and bike boulevards are needed to serve bike commuters and recreational riders. Skyline Parkwa- can be made safer for bicycle use.

Mountain Biking

There are several very good trails for mountain bike use in Duluth (Piedmont, Hartley, Lester/Amity). The primary needs are a cross city trail route, better trail signage, more beginner/easy trails and a skills course. Beginner trails could be located at Greene Street through to the Kingsbury Creek area with a trail center located at Lake Superior Zoo or at the neighborhood of Raleigh and Polk streets.

Horse trails

There is a need for a horse trail in Duluth along with support facilities (trailer parking, hitching posts, electricity and water). A trail should be a minimum of 10 miles in length to make it worth trailering of the animals. Any trail should connect to the wider area in a regional trail system.

Snowmobile trails

Snowmobile trails are maintained through the Grant-in-aid program funded by the Minnesota DNR. Capital improvements such as culverts, bridges, re-routes etc. are covered under this program. There is a need to determine a corridor and connect the eastern snowmobile trails with the State Trail system near the Sunset Lounge. There are sections of existing snowmobile trails which are highly eroded and almost unusable as summer trails. The erosion is due to summer uses (in some cases due to illegal ATV use), but needs to be repaired/restored. Also, the City should apply for funding for year-round maintenance projects on snowmobile trails to rehabilitate eroded areas and improve trail conditions. Non-winter repairs to snowmobile/joint use trails can be funded by the Minnesota DNR Grant-in-aid program.

Off leash dog trails

Duluth has designated three trail areas for off-leash dog use. In 2007 the Duluth City Council passed an ordinance identifying three areas that could become off-leash dog trail areas. These are Upper Lester/Amity, Central Park and Birchwood Park. In order for these to become a reality, a group who would maintain trails needs to come forward, and the City Clerk's office would need to work through a permit and application process. So far, COGGS have agreed to work with the trails in Upper Lester/Amity and Central Park. No one has yet indicated an interest in trails in the Birchwood Park area. Some of the land in that area was conveyed by the county for recreational use and may revert back to the county if not put into its intended use. It is recommended that the City Clerk's office complete the process for Upper Amity and Central Park. Once there are legal trails for off-leash dogs, the current city ordinance prohibiting off-leash dogs in public should be consistently enforced.

Cross country ski trails

Duluth has many great cross country ski trails. There are cross country ski trails at Magney Snively Park, Piedmont Recreation Area, Spirit Mountain, Hartley Park, Chester Bowl, Amity/Lester and public trails at UMD's Bagley Nature Center and private trails at Snowflake Nordic Center. Nearby Hermantown Keene Creek Recreation Area currently has five Km of groomed trails with five Km more in that city's plans. The primary needs are for more frequent grooming of public trails, better timing of grooming (i.e. at night so the snow can set up better), of lighter grooming equipment better suited for snow conditions, improved trail signage, and warming building/shelters/portable toilets. One option for more frequent grooming is to allow volunteers to groom some trails. The Western Waterfront Trail may be groomed for beginners. Additional beginner trails could be located between Greene Street and Kingsbury Creek with Lake Superior Zoo becoming a trail center. The western side of the city would benefit from a lit ski trail located on a two to five Km loop at Spirit Mountain preferably with access

to a warming shelter. Snowmaking at cross country trail centers would be beneficial because it would guarantee early season skiing and eliminate total dependency on natural snow for skiing. The most likely locations for implementing snowmaking would be at Spirit Mountain and/or in the stadium area of Chester Bowl. The Duluth Cross Country Ski Club (DXC) is working with the City of Duluth on a lease agreement for the Lester Winter Sports Building and with the City and Spirit Mountain on the merging the Spirit Mountain cross country trails into the City/Grant in Aid system and with DXC operating and eventually replacing the Spirit Nordic Chalet.

St. Louis River and Lake Superior Water Trails

Lake and river access is provided on City property at several locations, including Boy Scout Landing, Indian Point Campground, Chambers Grove, Clyde Avenue Boat Access (Munger Landing), Grassy Point Trail, Franklin Park, Lafayette Park, Park Point, Minnesota Point, Rice Point Landing, Brighton Beach/Lester River, Lakewood Pumping Station, Bluebird Landing and Stoney Point. Currently camping is available along the water trail at Fond du Lac and River Place private campgrounds and the City of Duluth's Indian Point Campground.

Accessibility

The Wheels On Trails (WOT) organization of Duluth goal is to broaden the base of camping and trail users to the "non-traditional' populations of people with disabilities and mobility limitations. They advocate for both physical improvements and programming. The Expanded Horizons (EH) program supports events that help make recreational user's first time out more enjoyable. Events include experienced recreation mentors and free refreshments.

The Accessible Trails Evaluation (ATE) program, a modification of the UTAP (Universal Trails Assessment Process), that allows evaluation by evaluators with disabilities, maps the existing trails, recording where the obstacles to accessibility are. This information can be used to guide users to make appropriate decisions about trail use. This information can also set priorities for maintenance/improvement projects to increase the accessibility of these trails.

WOT completed ATE trail evaluation efforts on ten Duluth trails. The trails evaluated included: Bagley Trail, Chester Trail, Congdon Trail, Lester Trail, Lincoln Trail, Mission Trail, Park Point, Grassy Trail, Hartley Trail, Lake Walk Trail and Western Waterfront. According to their evaluation, none of the 10 trails could be classified as "fully" accessible under the ADA guidelines. Their study prompted trail renovations that have since made the trails more accessible.

In Mission Creek, a loop trail along the creek and through a stand of cedars was begun in 2008. As of 2011, there are only 13 miles of accessible trails in Duluth. This plan calls for finishing the Mission Creek trail and upgrading to fully accessible status the WWFT, particularly at Indian Point Campground

It is important to continue to renovate existing trails to make them accessible and to assure that new trails, where possible, are ADA accessible. Snow plowing of paved trails and bikeways is increasingly important to allow winter use and for accessibility.

Trail sustainability and maintenance

Many of Duluth's existing natural surface trails were not purposefully designed or constructed and as such they often suffer from erosion and other maintenance issues. This is particularly true in areas where residential areas

are near trail centers. There is a need to utilize sustainable trail design for all new trails and to harden/stabilize some existing trails. All trail rehabilitation or construction should meet the standards set forth in the MNDNR and IMBA trail guidelines. The same standards will be applied city-wide to all natural surface trails. Trails that do not meet these standards should be evaluated, with prioritization given to speed and amount of deterioration, degradation and environmental effects. If a trail cannot be rehabilitated or relocated, the corridor should be closed and repaired according to standards set forth for such closures.

There is a need to improve ADA accessibility on Duluth's trails and to maintain those accessible trails to meet ADA standards.

ATV's are not allowed on trails, parks or public lands in Duluth. However, there is ATV use on some trails and that use has caused significant erosion and damage to trails. There is a need for greater awareness and enforcement of ATV use laws.

Volunteer Involvement

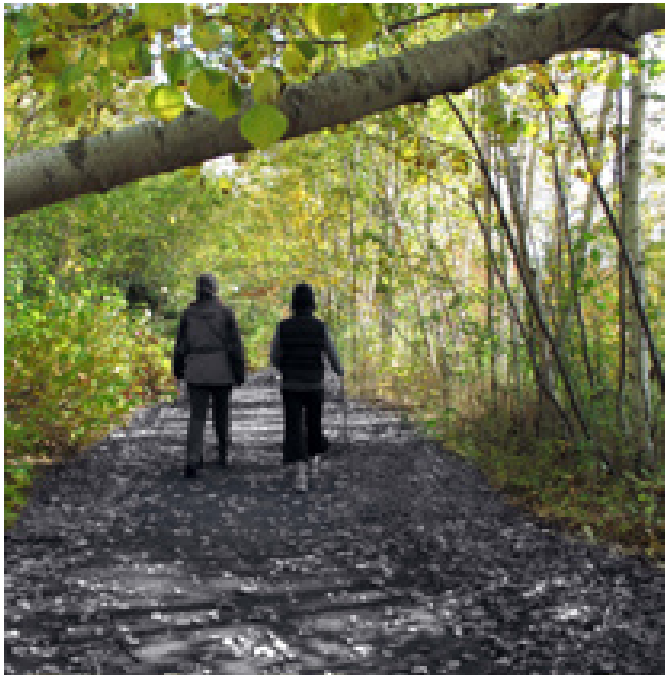
Volunteers are a crucial element in the design, operation, maintenance and improvement of Duluth trails. A variety of very involved trail groups and individuals supplement City efforts and are the lifeblood of the trail system. However, many of those user groups primarily maintain trails that are part of a particular organization's system, such as the SHTA and COGGS. Their volunteer system of individuals adopting a particular section and having routine maintenance sessions is very popular and the City should adopt a similar system for the rest of its trails. Virtually all natural surface trails can be maintained by volunteers, and various aspects of paved trails can be as well. Volunteer groups also should be utilized to seek funding for ongoing maintenance and special projects.

Trail System Evaluation:

- Exceptional volunteer commitment, talent and passion
- Committed city staff, city officials and local organizations
- Trails and nature are very important to residents, visitors and students
- Good base of existing trail plans
- Strong tourism market
- Tremendous resources - terrain, lake, river, views, natural areas, four season climate, etc.
- Great signature trails of statewide importance - Lakewalk, Superior Hiking Trail and the Munger Trail
- Need for greater bicycle and pedestrian connectivity to schools
- Few paved trails or bike lanes
- Lack of trail assurance markers and way-finding signage
- Few and hidden trailheads
- Challenging terrain and climate
- Need for greater accessibility and use of universal design principles
- Some trails on County tax forfeited land
- Challenging to maintain the existing trail system on non purpose built trails
- Need for purposeful - trail hardening - on some natural surface trails
- Some trail use conflicts
- Need for clear trail use and etiquette standards with enforcement techniques
- Erosion issues on some trails

Need for better connections between lakeshore & ridge
Many groupings of existing natural surface trails
Conflict of Trail Use (snowmobile- ski-winter biking, mountain bike-summer biking)
Many informal and local trails
Some areas of the City are underserved by trails
Lack of connections between trail clusters
Complete Federal "standard" shoreline trail from 20th-25th as intended.
Complete Federal "standard" shoreline trail from 20th-25th as intended.
Many groupings of existing natural surface trails
Horse trail users would like trails that connect to the County fairgrounds and campground
Need for better connections between the lakeshore and ridge
Need for more lighted ski trails - JK Loop and new building
Need for connection between the Munger trail and Lakewalk
Erosion issues on some trails
DWP abandoned railroad is an opportunity corridor
Horse Trail Loop(s) desired between Spirit Mountain & Jay Cooke
Need for better trail connections to schools
Large potential of additional waterfront trails
Some areas of the City are underserved by trails
Existing and Proposed Off-Road System
EXISTING OFF ROAD TRAILS
Regional
Existing Paved Trail
Other Existing Trails
Snowmobiles
Multi-Purpose
Hike
Cross-Country Ski
Cross-Country Ski Lighted
POTENTIAL FUTURE TRAILS
Existing Unofficial Trails
Proposed Trail Networks (from City)
Cross-City Trail - Preferred
Proposed Mountain Biking Network (COGDB)
NEIGHBORING TRAILS
Existing
Proposed
Proctor Trail Connector
PARKLAND
City Park Property
Scientific Natural Area
Jay Cooke State Park
OTHER
Universities
Trail Access
Schools (2009-2010)
Duluth Streams
Existing Residential Areas (2010)

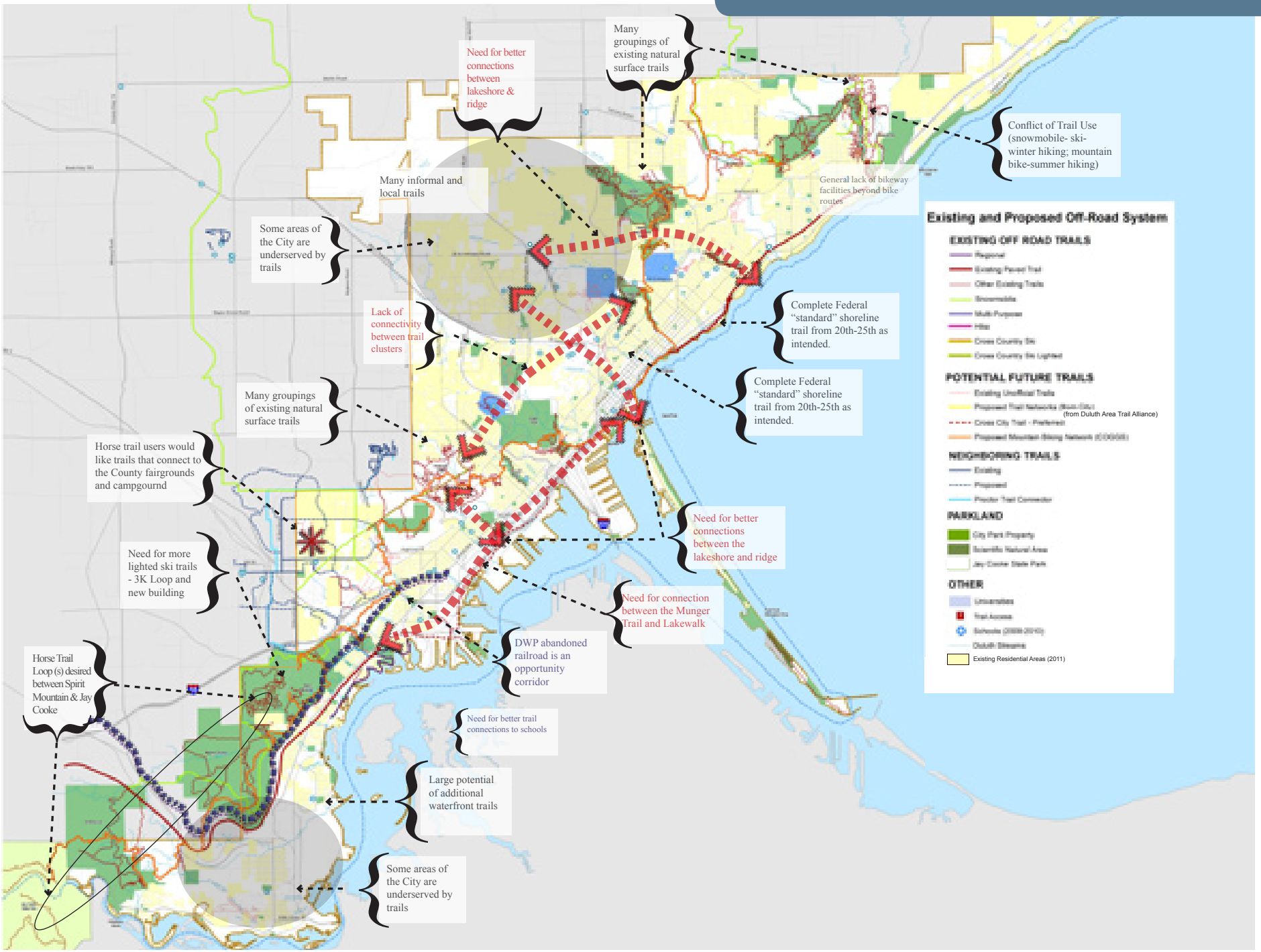
(31)



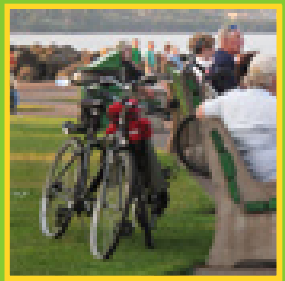
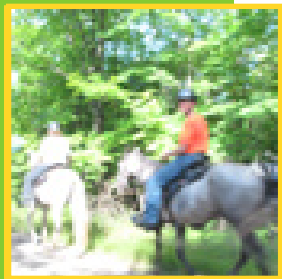
Bikeway System Evaluation:

- A largely bike unfriendly on-road environment
- Good base of existing bike routes
- Strong tourism market
- Tremendous resources - terrain, lake, river, views, natural areas, four season climate, etc.
- Positive Complete Streets policy
- Few paved trails and no bike lanes
- Few and hidden trailheads
- Challenging terrain and climate
- Need for off-street paved trails and on-street bike lanes
- Need for a bikeway advocacy group to promote road biking
- Need for bikeway connections to downtown, schools and commercial areas
- Safe, dedicated bike facilities (lanes, sharrows and bike parking) as needed downtown

BIKEWAY EVALUATION



DULUTH
Trail and Bikeway Plan

CHAPTER 4

Trail and Bikeway Plans

4. TRAIL AND BIKEWAY PLANS

Introduction and Approach

The existing and proposed trail system and bikeway network complement each other, but are shown on separate plan maps for sake of clarity. The Trail Plan covers paved and non-paved off-street trails. The Trail Plan also includes recommended trailhead locations. The Bikeway Plan focuses on on-street bikeways (bike routes, bike lanes, sharrows and bike boulevards). For the most part, the Trail Plan builds on existing and planned trails with the addition of new trails to further connect the system, to provide trails in underserved areas or to provide trails for specific recreation uses. The Duluth Bikeway Plan is based on the MIC Duluth Superior Bike Map which shows existing bike routes in Duluth and Superior, Wisconsin and the FIT City Connecting Duluth: 2010 Comprehensive Bicycle Assessment. The Duluth Bikeway Plan recommends adding additional treatments such as striped bike lanes or sharrow markings to key routes to make on-road bicycling safer and more convenient.

These plans show the existing and proposed systems at a city-wide scale to ensure connectivity and service to neighborhoods and destinations as well as connections to surrounding communities. More detailed and area specific plans will be developed in the future to guide area specific trail and bikeway construction.

TRAIL PLAN

The Trail Plan shows recommended trail routes, surfaces (paved or non-paved) and trailhead locations. The intent is to create a comprehensive connected network of attractive trails and support facilities to serve resident and visitor needs.

Vision Plan

The Trail Vision Plan illustrates the framework for the Trail Plan. The Vision includes; across the city trails, up and down trail connections (lakeshore to ridge top), signature trail parks (clusters of multi-use natural surface trails) and trail centers (regional and local trailheads). A sustainable network of paved and unpaved trails is envisioned that will allow Duluth to be the premier trail city in North America. The recommended cross-city, up and down and specialty trails are described below along with recommended trailhead locations. The Trail Plan maps also show local trail connections and clusters of natural surface multi-use trails not shown on the Trail Vision Plan.

Across the City Trails

Four trail routes are envisioned as trails across the entire city from west to east (Cross City Trail/Lakewalk, the Superior Hiking Trail, the Duluth Traverse and Skyline Parkway). Additionally, the DWP Trail and Western Waterfront Trail would cross the western half of the City.

1. Cross City Trail - Munger Trail to the Lakewalk and the Lakewalk Extension.

The Cross City Trail is a planned paved multi-use trail connection which will connect from the end of Willard Munger State Trail at 75th Avenue West to the west end of the Lakewalk at Canal Park. The goal is to add about seven miles of off road paved trail overall. Where space for an off street trail is currently not available some sections of the Cross City route will utilize on-street bike lanes and existing off street sidewalks. The goal is to add off street trails in these sections when trail easements or routes can be secured.

Lakewalk Extension - The Lakewalk Trail will be extended from 60th Avenue East to Kitchi Gammi Park (Brighton Beach) which in effect will connect the City of Duluth to the State Gitchi Gammi Bicycle Trail along the entire north shore.

The combination of the Munger, Cross City and Lakewalk trails will eventually create a continuous 21 mile long multi-use paved off-road trail corridor the length of Duluth. This trail corridor will be a tremendous asset that will be well used by residents and visitors.

The City should secure an easement through the Hayden property to connect the current Beacon Pointe terminus of the Lakewalk to the Ledges natural surface trail and the current eastward extension of the Lakewalk, upgrading the natural surface trail to a paved trail to the same standards as the rest of the Lakewalk.

2. Superior Hiking Trail

The Superior Hiking Trail (SHT) in Duluth is an existing, mostly natural surface footpath that largely follows the ridgeline above Lake Superior. In the summer it is open to hiking, backpacking and running, and in the winter months it is also open for snowshoe use. The Duluth portion of the 250+ mile hiking trail is 39 miles long and crosses nearly the entire length of the City from the western and eastern borders. The Duluth section of the SHT was built for the eventual incorporation into the national long distance trail, the North Country Trail, thereby connecting the City of Duluth to neighboring states. The SHTA would maintain the trail and its identity throughout its system. The trail dips off the ridgeline down to Canal Park and the lakeshore between Enger Park and Chester Park where it follows the Lakewalk, and in some short sections throughout the city, the 'trail' utilizes a street or sidewalk.

Public camping is currently available at nearby Jay Cooke State Park, at Spirit Mountain Campground, using a half-mile spur trail built by SHTA, and at Indian Point Campground (just off Grand Avenue) on the St. Louis River by using the combined City/SHT spur trail and another City trail near the Lake Superior Zoo that leads to Grand Avenue. There is lodging available near the SHT in Canal Park and on Grand Avenue.

Some recommendations in this plan to improve general hiking trail/footpath connectivity include:

- Determine a footpath route from the Lakewalk/SHT to Congdon Park and its hiking trail system.

- Determine a footpath route to intersect Congdon Park with the UMD/Bagley Nature Center trail system and the section of the SHT located there.

3. Duluth Traverse Trail

The Duluth Traverse is envisioned as a continuous, multi-use, human-powered, sustainable natural surface trail, suitable for mountain bike use the entire length of Duluth from Jay Cooke State Park to Lester Park. COGGS (Cyclists of Gitchee Gumee Shores) is planning the trail along with the City. The Traverse trail will combine sections of existing trail with new trail sections that will be added as land, easements and fund-

ing are available. Currently, there are clusters of multi-use trails in the Lester-Amity area, Hartley Park and Piedmont Recreation Area, with plans to build additional trail clusters in Brewer Park, within the Spirit Mountain Authority land and in the Mission Creek/Fond du Lac Park and Forest lands. The multi-use trail will be used by walkers, hikers, runners, snowshoers, mountain bikers and in some cases, by off-leash dog walkers or equestrians (in some areas of the Duluth Winnipeg Pacific railroad corridor).

Some recommendations in this plan to improve general multi-use trail connectivity include:

- Development of a ridgeline multi-use trail between Enger Park and Chester Park.

- From the junction of the spur of the SHT, snowmobile trail and Skyline Parkway, build a multi-use trail eastward to connect to the Lester-Amity trail system.

4. Skyline Parkway

The Skyline Parkway Corridor Management Plan calls for improvements along Skyline Parkway to restore its historic parkway character and make it safer and more usable for pedestrians and bicyclists. Adding shoulder space for pedestrians and bikers is recommended and in some places there is room to add off street trails or bike lanes. The Parkway corridor has segments with differing and distinct character. The pedestrian and bikeway improvements should begin in the park-like segments such as Hawk Ridge Nature Reserve and Enger Park/Golf Course and in the residential area between Mesaba Avenue and Chester Bowl. The entire parkway should be designated and signed as a bike route and the speed limit should be reduced to 25 MPH as a cost effective means to improve safety for walkers, joggers and bicyclists. Minnesota Statute 160.263 allows local governments the ability to reduce speed limits on roadways with bicycle facilities (lanes or routes) to 25 MPH.

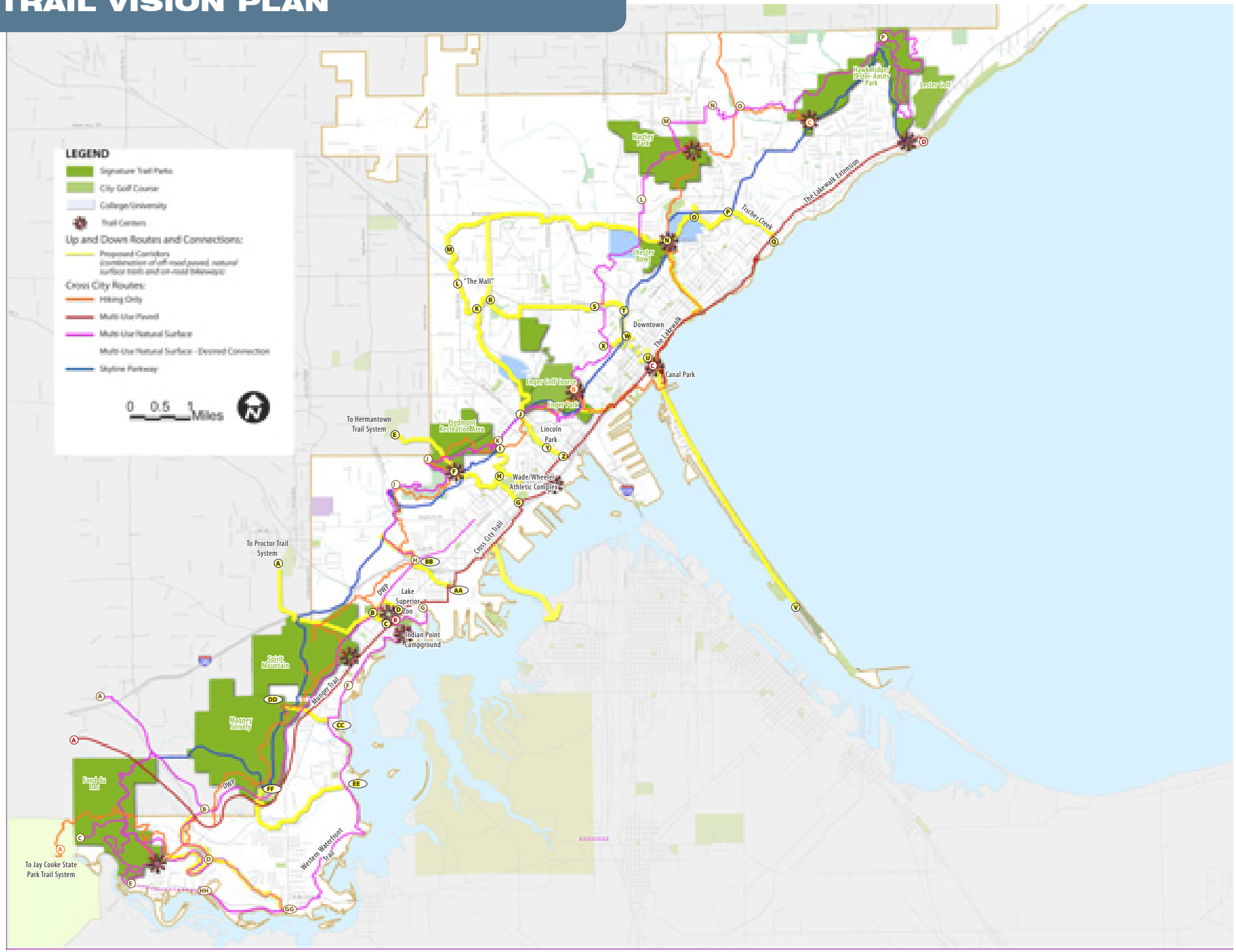
5. DWP Trail

The city-owned, abandoned, Duluth Winnipeg and Pacific (DWP) railroad corridor is currently used as an informal trail. The 100-ft wide corridor (wider in some locations) runs continuosly for approximately 10 miles from 63rd Street West to Becks Road. Sections of the DWP also extend east from 63rd Street, but they are not all contiguous. The DWP is a very scenic route with several stone, iron and wooden trestles and a tunnel under the rock of Ely's Peak. (This is also a popular rock climbing site and UMD has put in a trail and trail head on Becks Road.) The corridor would provide an excellent unpaved multi-use regional trail system. Significant restoration and repair is needed on the trestles, rail bed and tunnel. Because of the hardened nature of the former rail bed, the scenic views and the gentle grade, the DWP corridor would be suitable for horseback riding when improvements are completed. The corridor would also enable the Duluth Traverse multi-use trail to be completed as planned and to be able to avoid sensitive and wet areas as it crosses the western part of the city. A concept plan is need to help secure Federal, State and regional funding for improvements of this regional trail corridor.

6. Western Waterfront Trail

The existing mostly crushed stone surface Western Waterfront Trail (WWFT) should be extended along the St. Louis River (west potentially to Fond du Lac Park.)This trail would be a valuable asset to the western portion of Duluth as it is an area currently underserved by trails. Although a continuous connection has been lost due to private ownership, the old rail bed of the St. Paul & Mississippi Railroad currently runs along the St. Louis River from east of Riverside through to Fond du Lac Park. It ends at private homes in Fond du Lac. It is also possible that the WWFT could be groomed for classical cross country skiing in winter.

TRAIL VISION PLAN



	TYPE	SEGMENT	NAME	SOURCE
Cross City Routes	Hiking	A-B/B-C	Superior Hiking Trail	Existing
	Multi-Use Paved	A-B	Munger Trail	Existing
		B-C	Cross-City Trail	SEH
		C-D	Lakewalk	Existing/Planned
	Multi-Use Natural Surface	A-B/B-H	DWP Trail	D.A.T.A (I.D. 72)
		B-D	COGGS Grand Traverse	COGGS
		D-C	COGGS New Loop	COGGS
		D-E	Sargent Creek	D.A.T.A (I.D. 19)
		E-F	Western Waterfront Connector	D.A.T.A (I.D. 49)
		F-G	Western Waterfront	Existing
		H-I	COGGS Grand Traverse	COGGS
		I-J	COGGS New Loop	COGGS
		J-K	Piedmont Trails	Existing
		K-L	COGGS Grand Traverse	COGGS
		L-M	Hartley Trails	Existing
		M-N	COGGS Grand Traverse	COGGS
		N-O	COGGS New Loop	COGGS
		O-P	COGGS Grand Traverse	COGGS
		P-P	COGGS New Loop	COGGS
		GG-HH	Western Waterfront Connector	D.A.T.A (ID 49)
		HH-EE	Soft Surface Trail Connection	HKGi
Up and Down Corridors and Connections	Multi-Use Paved	A-B	Proctor City Trail	D.A.T.A (I.D. 0)/ City of Proctor Trail Plan
	Multi-Use Natural Surface	B-C	To Zoo Option #1 (Will's Trail)	D.A.T.A (I.D. 71)
	Multi-Use Natural Surface	C-D	To Zoo Option #2 (Zoo Spur)	D.A.T.A (I.D. 50)
	Multi-Use Paved?	E-F	Piedmont & Hermantown Trails	Existing
	Multi-Use Natural Surface	F-G	Merritt Creek Trail	D.A.T.A (I.D. 54)
	Multi-Use Natural Surface	H-I	Wheeler Park Trail	D.A.T.A (I.D. 4)
	Multi-Use Paved	J-K	Miller Hill Trail	D.A.T.A (I.D. 5)
	Multi-Use Paved	K-L	Village Mall Connector	D.A.T.A (I.D. 31)
	Multi-Use Paved	L-M	Mall Connector	HKGi
	Multi-Use Paved	M-N	Arrowhead Trail	D.A.T.A (I.D. 12)
	Multi-Use Paved?	N-O	Lowell-Congdon Connector	Scholastica/UMD/City
	Multi-Use Natural Surface	O-P	Mount Royal Trail	D.A.T.A (I.D. 76)
	Multi-Use Natural Surface	P-Q	East Tischer Creek Trail	D.A.T.A (I.D. 47)
	Multi-Use Paved/On-Road Bikeway	R-S	Palm Trail	D.A.T.A (I.D. 89)
	Multi-Use Paved	S-T	Marshall Trail	D.A.T.A (I.D. 41)
	Railroad or PRT	W-U	Incline RR or PRT	HKGi
	On- Road Bikeway	U-V	Park Point Beach Trail	D.A.T.A (I.D. 13)
	Multi-Use Natural Surface?	W-X	Nettleton School	D.A.T.A (I.D. 63)
	Multi-Use Paved/On-Road Bikeway	J-Y	Lincoln Park Trails/Green Street	Existing/HKGi
	On- Road Bikeway	Y-Z	Lincoln Park /Munger Conection	D.A.T.A (I.D. 83)
	Multi-Use Natural Surface/Hiking	AA-BB	Lower Keene Creek Connector	D.A.T.A (I.D. 80)
	Multi-Use Natural Surface/Hiking	CC-DD	Stewart Creek Trail	D.A.T.A. (I.D. 22)
	Multi-Use Natural Surface/Hiking	EE-FF	US Steel /Morgan/Gary	D.A.T.A. (I.D. 21, 73,28, 40)

The St. Louis River Trail (currently a foot/bicycle path) picks up again at Chambers Grove and runs to the end of city property near the Minnesota Power Dam. Most of that trail is in fairly decent condition, and although trestles are long gone, COGGS hired an international trail designer who deemed the trail could be easily routed on the contours of the hillside to provide access for foot and mountain bike traffic.

The WWFT trail near Indian Point Campground should be made into an accessible route with access from both the parking area and the campground itself.

Up and Down Trail Routes

Trail connections up and down would provide crucial links between the ridge top and lakeshore. The goal is to better connect people to existing and planned cross city trails and to connect neighborhoods. See the Trail Vision Plan for the locations of proposed up and down corridors. Some up and down trails like in Lester Amity Park exist and others such as Congdon Park and Lincoln Park need improvements. New up and down trail corridors are proposed at Wade Wheeler Athletic Complex, west of Keene Creek, at the Zoo, in western areas of the City and in downtown. Additionally, new trails are proposed for the Duluth Heights/Mall area and enhanced pedestrian and bicyclist treatments are recommended for Minnesota Avenue on Park Point.

The following trail routes are proposed as up and down connections between the lakeshore and ridge top. Some of these exist and function well today. Some need restoration work, some need additional extensions to make them more functional and some need further analysis to determine their feasibility as potential connections. In some cases only a pedestrian connection may be possible due to steep terrain making it too difficult for most bicyclists to ascend. In those instances a separate, but close-by, on-road bikeway is desirable to complement the footpath. Particular care must be taken in designing the up and down trail routes in a sustainable manner (i.e. IMBA standards) to ensure that they don't be come gully washes causing significant erosion damage.

Lester/Amity Park –-Lester/Amity Park Seven Bridges Road is an excellent bikeway, especially in light of refurbished bridges and newly paved road surface enabling cyclists access from the Lakewalk to Skyline Parkway. The ski trails and multi-use trails provide a natural surface trail corridor from Superior Street to Skyline Parkway.

Congdon Park – Rebuild the closed Congdon Park Drive as a paved multi-use trail. Utilize the existing footpath along Tischer Creek. Add a sidewalk and signed bike route south from Congdon Park Drive to the Lakewalk along 32nd Avenue. Currently a bike trail exists from Vermilion Rd. at St. Marie Street down to Superior Street on the old Congdon Park Boulevard. That road which has been closed for ten or more years is beginning to deteriorate and being entirely on the fall line will eventually give way. It is recommended that a maintenance and restoration plan be created for that bicycle pathway. Two hiking trails run on the west side of the creek - one was the old bridle path from Glensheen Mansion up to the Mt. Royal area, and this is a mostly wide, limestone trail. Another, primitive hiking trail on the west side of the creek goes from nearly London Road all the way up to the Mt. Royal area. The trail has some bluestone retaining walls and steps and several major bridges. It is recommended that a corridor be identified to get people from London Road and the Lakewalk area up to the Mt. Royal neighborhood.

Chester Creek/Chester Park – Utilize Chester Creek Drive (bike route)/Superior Hiking Trail (footpath) for up and down movement. From East 4th Street and 15th Ave. East, a fairly good bike route exists going up 15th to the 8th St./9th St. Bridge, and then up to Skyline Parkway utiliz-

ing Chester Park Drive. Bikes are not permitted in Chester Park on the hiking trails on both sides of the creek from E. 4th Street up to Skyline Parkway, connecting to two universities. Currently the Superior Hiking Trail utilizes 14th Ave. E. to connect the Lakewalk and Lower Leif Erickson Park/Rose Gardens to Skyline Parkway and Chester Park.

Downtown - Consider linking Canal Park to the old Duluth Central High School site/the Duluth Traverse and Skyline Parkway with a tram, personalized rapid transit (PRT), bicycle escalator, incline railway or by improving the existing skywalk system from the DECC to provide pedestrian and bicycle movement and foster connection across the interstate highway.

The former Seventh Avenue incline railway route historic walking trail can be utilized as a pedestrian route from downtown to Skyline Parkway. The trail is currently in very good shape and would require minimal repair. It is not an accessible route as it is essentially a concrete staircase.

Superior Hiking Trail/Central Park -The SHT utilizes one of the existing city trails for up and down movement connecting Enger Park to Central Park, Point of Rocks Park and Bayfront Park utilizing a pedestrian overpass to cross Interstate 35. COGGS plans to upgrade trails in Central Park and to build new, multiple use trails, which will include off leash dog walkers.

Lincoln Park – Use a combination of existing park trails and footpaths with a separate bikeway on Lincoln Park Drive to connect from the Cross City Trail to Skyline Parkway. Lincoln Park Drive is a good bicycle route leading one from Skyline Parkway down to West Third Street. A rustic, natural surface hiking trail winds up the east side of Miller Creek, and near the top, joins the Superior Hiking Trail at Skyline Parkway. Recommend connecting with Lake Superior College Trail system. Continue the bikeway to the top of Lincoln Parkway through Lake Superior College into the mall area.

New Lincoln Park School and Clyde Park/Wade Wheeler Athletic Complex/Western Middle School/ Merritt Creek – A new multi-use trail is needed to connect the Cross City Trail to Wade Wheeler Athletic Complex, the new Western Middle School and Skyline Parkway as well as to connect the neighborhoods surrounding the new middle school which is currently very isolated and not well connected for pedestrians and bicyclists. A trail feasibility and alignment evaluation is needed.

Cody Street/Keene Creek corridor- Due to the I-35 location, this is a difficult area to provide an up and down corridor. From Grand Avenue to Skyline Parkway, a route for foot travel exists on the Superior Hiking Trail. There is also a snowmobile trail that goes straight up the hill under the powerline. A corridor for a purpose-built bicycle trail exists west of Keene Creek, and that would lead to the same intersection of Highland, Vinland, St. Louis River Road and Skyline Parkway that is currently used as a trailhead for the Superior Hiking Trail. Potentially, a route to the Keene Creek Recreation Area in Hermantown could be established. For a bike route in the same corridor, utilizing 59th Ave. W. to head up the hill to the same intersection would get bikes to the Skyline Parkway. To the west of Keene Creek, below Skyline Parkway, a multiple use trail could be established.

Lake Superior Zoo area – A trail/bikeway is needed from Indian Point Campground to the Zoo/DWP/Duluth Traverse. Also a trail is needed along the DWP to Knowlton Creek linking the Zoo to the Skyline Parkway and to the Proctor trail system at I-35/Boundary Avenue. Because of the interstate highway system, direct up and down access to Skyline Parkway is not possible without

a tunnel or a bridge. However, development of a multi-use natural surface trail system between the Zoo and the Greene Street area, could connect to ways to reach the Parkway. Currently, a footpath winds up the west side of the creek to the Superior Hiking Trail, and on the east, the old Thompson Hill Road climbs the hill to the old road corridor. That trail is severely eroding and is in need of repair as it is sending debris into Kingsbury Creek and is not recommended as a bikeway.

Spirit Mountain area - 80th Ave. West is a gravel road, that connects Grand Avenue to the Cloquet pumping station and on up to the old Knowlton Creek Boulevard. However, the terrain is such in that area that it is probably not possible to build a sustainable multiple use trail to gain access to the upper Spirit Mountain parking areas. It is recommended that a multiple use trail system be developed east of Knowlton Creek with access to the new Chalet at the base of Spirit Mountain with the Traverse crossing Spirit Mountain on the DWP Corridor.

Norton Park and Riverside Area - From Grand Avenue there are numerous existing trails leading to the DWP corridor. There are also some old roads that head up the hill to Skyline Parkway located on the fall line. Some of these are extremely eroded and somewhat dangerous, dumping debris into creeks. One of these is in the area that the State of Minnesota would like to protect with a Scientific and Natural Area. COGGS is planning this area - the Duluth Traverse through using the DWP Corridor and on suitable terrain below Skyline Parkway.

Mission Creek area - There are currently two trails that lead one from the parking area at 131st Ave. West to the Munger Trail. One currently is the spur for the Superior Hiking Trail, and it leads up a narrow gorge with several bridges in need of repair or replacement. It is recommened that the City of Duluth trail be re-routed onto the western side of the Superior Hiking Trail to an old trail in good condition that leads directly back to the main trail. The other trail is the current hiking, snowmobile and horse route with many stream crossings as it goes to the Munger Trail and to Beck's Road. Summer use requires wet-footed crossings. Many bridges washed out in the 60's and 70's. Consider working with the snowmobile club and equestrians to gain funding for repair of this highly eroded trail.

US Steel/Morgan/Gary/Stewart Creek/Sargent Creek – Add a new multi-use trail from Morgan Park to the Munger Trail, utilizing the DWP Corridor for the Duluth Traverse Trail. In the area of Superior Hiking Trail easement, seek a trail easement from Euland Brothers to allow the trail to be located off the DWP Corridor and avoid areas of wet soil conditions.

Mall Area Trails – New trails are proposed for the Mall area and to connect the area to cross city trails, downtown, parks and colleges. New trails are recommended paralleling Arrowhead Road, Trinity Road and the proposed Joshua Street extension. These trails combined with a bike boulevard treatment on Palm Street (paralleling East Central Entrance) will greatly enhance pedestrian and bicyclist movement in an area that is underserved by trails and has a lot of high traffic roadways.

School Connections – A pedestrian/bicycle trail is proposed to connect Lowell School, the College of St. Scholastica, Chester Park, UMD, Mount Royal, Congdon Park and the Lakewalk. There are many existing and potential local neighborhood trails that would connect to the main paved trail corridor. It is likely that this trail would include both off-street and on-street sections. The Trinity Road corridor trail in the Mall area would provide trail access to Lake Superior College. Additional trail, bikeway and sidewalk connections are needed to and through UMD and to all high schools, middle schools and elementary schools.

Trailheads

Two types of trailheads are envisioned - trail centers and local trailheads. Signature trail parks would be served by either a trail center or a trailhead.

Trail centers - Trail centers are large trail system access points that are recommended to include a system trail signage/information kiosk, bathrooms/portable toilet (screened), parking, drinking water, electricity, picnic tables and shade, with the option of a trail building/shelter. From these centers, many types of trail users might disperse. Also as important, these centers would be navigated to by visitors and locals alike from major roads and highways with appropriate wayfinding materials. Recommended locations: along Skyline Parkway (at signature trail parks from Lester/Amity to Fond du Lac), at Canal Park, at Hartley Nature Center, at the Zoo, at Clyde Iron/Heritage Sports Complex, and at Spirit Mountain. See the Trail Vision Plan for a map of suggested trail center locations.

Local trailheads – These are recommended local access points to designated trail systems with trail signage/information kiosk and parking and the option of picnic tables, drinking water and bathrooms/portable toilet (screened). Location criteria: Infill locations to serve local trail access needs. An example is adding a new trailhead at Heritage Center which is a gathering spot and activity center.

Signature trail parks – Trail parks are a concentrated grouping/network of trails, typically served by a trailhead or trail center. Trail networks typically serve multiple uses: hike, bike and cross country ski, snowmobile, etc. Examples are: Piedmont, Hartley, Hawk Ridge Nature Reserve, Spirit Bay Recreational Area, Lester/Amity, and Chester Bowl.

Trailheads should include signage informing people of seasonal trail closures and trail etiquette/rules. Trail signage should communicate trail types and expected level of trail maintenance.

Special Use Trails

Some trail uses are unique and require specialized trail conditions.

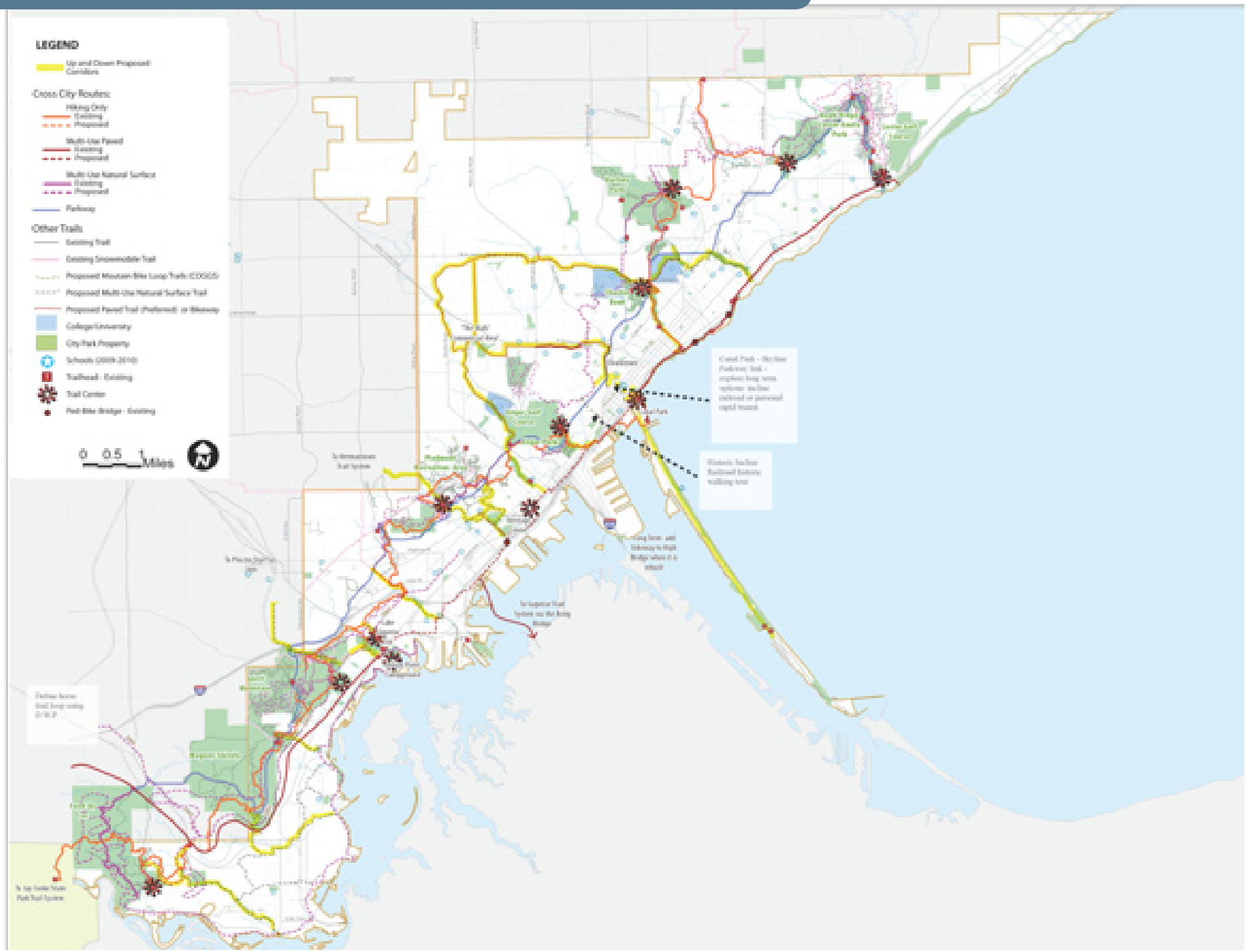
Horse riding

This Plan supports a feasability study and potential development of a horse trail in the western section of Duluth to connect to Jay Cooke Park. The trail would likely use a portion of the DWP Corridor with support facilities (trailhead with trailer parking, adequate vehicle circulation space, hitching rails and a water trough). The Duluth Horse Trail Alliance will, in partnership with the City of Duluth and the Department of Natural Resources, study the feasibility of a trail and participate in trail planning, funding and development. Due to wet soils and sensitive ecosystem (and potential for a Scientific and Natural Area) conditions, there should be no horse use in Magney Snively Park. The 1.5 mile long horse trail along Amity Creek should be closed to horseback riding due to a lack of trail sustainability and due to special consideration of Amity Creek. In recent years, significant and very costly erosion mitigation has been occuring on the stream banks just below this area.

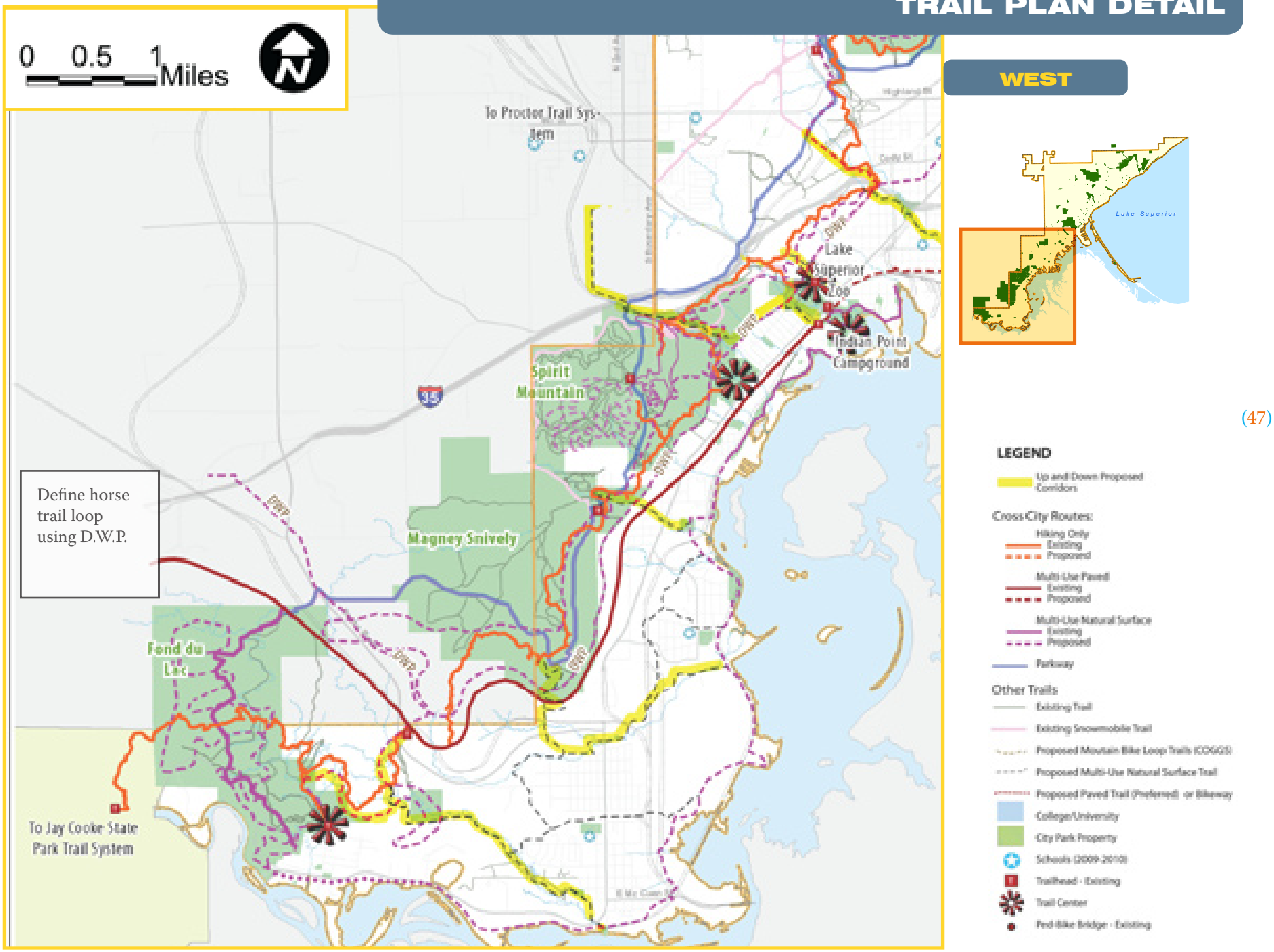
Snowmobile trails

There is a need to determine a corridor and connect the eastern snowmobile trails with the State Trail system near the Sunset Lounge. There is also a need to better maintain some snowmobile trails for summer trail use.

TRAIL PLAN

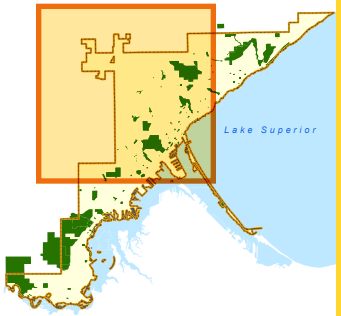

LEGEND
Cross City Routes:
Other Trails
College/University
City Park Property
Trailhead - Existing
Trail Center
0 0.5 1 Miles

TRAIL PLAN DETAIL



TRAIL PLAN DETAIL

CENTRAL



LEGEND

- Up and Down Proposed Corridors

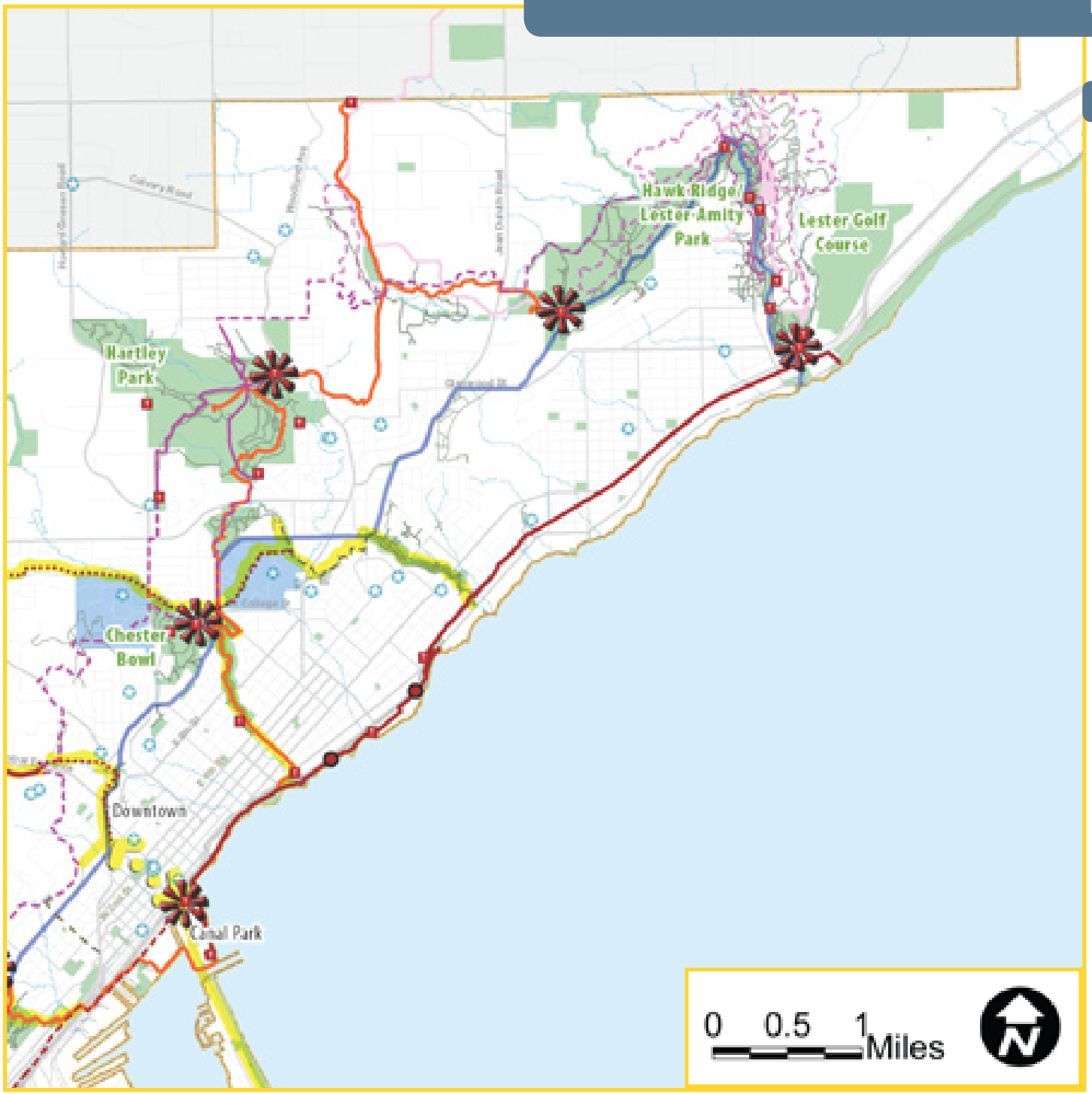
Cross City Routes:

- Hiking Only
  - Existing
  - Proposed
- Multi-Use Paved
  - Existing
  - Proposed
- Multi-Use Natural Surface
  - Existing
  - Proposed
- Parkway

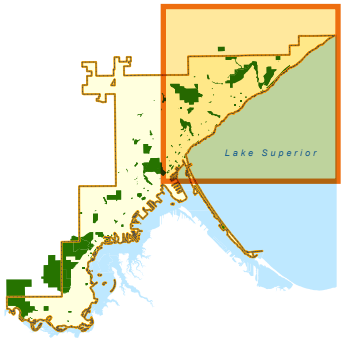
Other Trails

- Existing Trail
- Existing Snowmobile Trail
- Proposed Mountain Bike Loop Trails (COGGS)
- Proposed Multi-Use Natural Surface Trail
- Proposed Paved Trail (Preferred) or Bikeway
- College/University
- City Park Property
- Schools (2009-2010)
- Trailhead - Existing
- Trail Center
- Ped-Bike Bridge - Existing

TRAIL PLAN DETAIL



EAST



(49)

LEGEND

- Up and Down Proposed Corridors

Cross City Routes:

- Hiking Only
  - Existing
  - Proposed
- Multi-Use Paved
  - Existing
  - Proposed
- Multi-Use Natural Surface
  - Existing
  - Proposed
- Parkway

Other Trails

- Existing Trail
- Existing Snowmobile Trail
- Proposed Mountain Bike Loop Trails (COOGS)
- Proposed Multi-Use Natural Surface Trail
- Proposed Paved Trail (Preferred) or Bikeway
- College/University
- City Park Property
- Schools (2009-2010)
- Trailhead - Existing
- Trail Center
- Ped-Bike Bridge - Existing

Off leash dog trails

Identify the processes left to be put into place to designate and open the proposed off leash dog trails at Upper Lester/Amity, Central and Birchwood Parks.

Cross country ski trails

The City should continue to work with DXC to get more frequent grooming of public trails, improve the timing of grooming and to obtain lighter grooming equipment better suited to snow conditions. One option for more frequent grooming is to allow volunteers to groom some trails. Other recommendations include; improved trail signage, adding warming building/shelters/portable toilets, the possibility to add a lit ski trail on the western side of the city and the eventual addition of snowmaking.

Bikeway Plan

Duluth's existing bikeway system consists of approximately 50 miles of signed bike routes, approximately 13 miles of off-road hard surface trails (paved and gravel) and a one mile long section of sharrows. There are no striped bike lanes in Duluth. Striped bike lanes provide a designated space for bicyclists to ride and are an important element that is lacking in the Duluth bikeway system. The existing bikeway routes are helpful for way-finding and for selecting appropriate routes, but they lack any designated space for cyclists to be more comfortable and safer while riding on the streets.

The Bikeway Plan recommendations focus on making physical improvements to selected existing on-street bike routes to make them safer and more convenient for bicycle riding. The recommended improvements include adding striped bike lanes (both sides of a street), adding bicycle climbing lanes (striped bike lane on the uphill direction), adding sharrows (bicycle + arrow pavement symbols/signs for shared lanes) and bike boulevards (local streets with traffic calming measures). The selected routes are based on connecting people to desired destinations such as downtown, colleges, the Mall area, neighborhood commercial nodes and to existing and planned trails.

Recommended Bikeway Route Improvements

The following bikeway improvements are shown on the Bikeway Plan maps. A feasibility evaluation, public outreach and site specific design process is recommend for each of these improvement projects. Some improvements involve the simple addition of signage and pavement markings, others may be part of a larger road reconstruction and some may require removal of on-street parking.

Bikeway recommendations are shown on the Bikeway Plan maps and are summarized by geographic area below. These recommendations for the bikeway network are supplemented by and coordinated with the off-street trails recommended in the Trail Plan.

Western Duluth

- Add wide shoulders along Grand Avenue/TH23 from the west border to the Zoo.
- Add sharrows along Grand Avenue/TH23 from the Zoo to Carlton Street and along Carlton Street and Superior Street to the connection with the Cross City Trail.
- Add a climbing lane (uphill) and sharows (downhill) to 46th Avenue W., 59th Avenue W. and Highland Street.
- Improve the Oliver bridge between Minnesota and Wisconsin to accommodate pedestrians, bicycles and snowmobiles.

Central Duluth

- Improve access along Michigan Street between downtown and the existing pedestrian/bicycle bridge over I-35 (by M & H gas station) with bike lanes or other suitable treatment.
- Add a new signed bike route along 5th Avenue W., 1st Street, 11th Avenue W., Observation Road and a section of Arlington Avenue to Lake Superior College.
- Improve bicycle and pedestrian connections to the I-35 bike/pedestrian bridges at 16th Avenue East and 25th Avenue East .
- Add bicycle/pedestrian facilities to the Blatnik bridge (I-535) when it is rebuilt or sooner if can be retrofitted cost effectively.
- Add a climbing lane (uphill) and sharows (downhill) along 6th Avenue when the street is redone/narrowed and improve the ability of pedestrians and bicycles to cross 6th. Add bike lanes on Central Entrance or develop an off road trail to connect downtown to the trail along Palm Street.
- Add a climbing lane (uphill) and sharows (downhill) to 15th Avenue E. between Superior Street and 4th Street.
- Remove parking from one side and add bike lanes on both sides of Minnesota Avenue.
- Add paved shoulders for bicycling/walking on Observation Road from Skyline Parkway to Arlington Avenue and designate and sign that section as a bike route.
- Close 15th Ave. East at the reservoir (E. 6th Street) to restrict motorized traffic utilizing this roadway as a through route, making it safer for pedestrians and bicyclists.

Downtown

- Add striped bike lanes on both sides of 4th Street from 10th Avenue W. to Congdon Park Drive.
- Consider changing on-street parking in some parts of the downtown area so that cars back into diagonal parking spaces instead of driving head in. That would improve visibility between parked vehicles, moving vehicles, bicyclists and pedestrians and vehicles would not need to back into traffic when they are departing.
- Consider removing the third driving lane on 2nd Street, in order to create more space for bicyclists and add sharrow markings and signage to the one way pair of 2nd and 3rd Streets.
- Create a bike boulevard/add sharrows with the reconstruction of Superior Street between 5th Avenue W. and 10th Avenue E. Convert parking to be more bike friendly using parallel or back in diagonal space.

Eastern Duluth

- Add sharrows to Woodland Avenue from 4th Street to Arrowhead Road and bike lanes on Woodland Avenue from Arrowhead Road to Calvary Road.
- Add a climbing lane (uphill) and sharows (downhill) to 7th Avenue E. between 4th Street and Skyline Parkway to connect to the existing sharrows on Kenwood Avenue from Skyline Parkway to Arrowhead Road.
- Add bike lanes with a center turn lane to or add sharrows to right lanes on Arrowhead between Kenwood Avenue and Arlington Avenue. Consider extending features further west into the intersection with TH 53 and the entrance to Hermantown where there are existing shoulders on shoulders on Arrowhead Road. Add bike lanes on Wallace Avenue from E. 4th Street to Arrowhead Rd.

- Add sharrows/traffic calming to create bike boulevards on 43rd Avenue East and Glenwood Street.
- Rebuild the closed Congdon Park Drive as a bike trail. Add a signed bike route south of Congdon Park Drive to the Lakewalk along 32nd Avenue.
- Add signed bike routes along Lester River Road and Howard Gnesen Road.

Mall area

- Add traffic calming measures to Palm Street and Orange Street to create a bike boulevard.

Skyline Parkway

- Add space for pedestrians and bicyclists along the roadway shoulders. Start with making the park-like segments such as Hawk Ridge and Enger Park/Golf Course and the residential area between Mesaba Avenue and Chester Bowl more bicycle and pedestrian friendly with bike lanes, sharrows or an off street trail where space allows. Consider lowering the speed limit on the entire parkway to 25 MPH.

Direct Connections

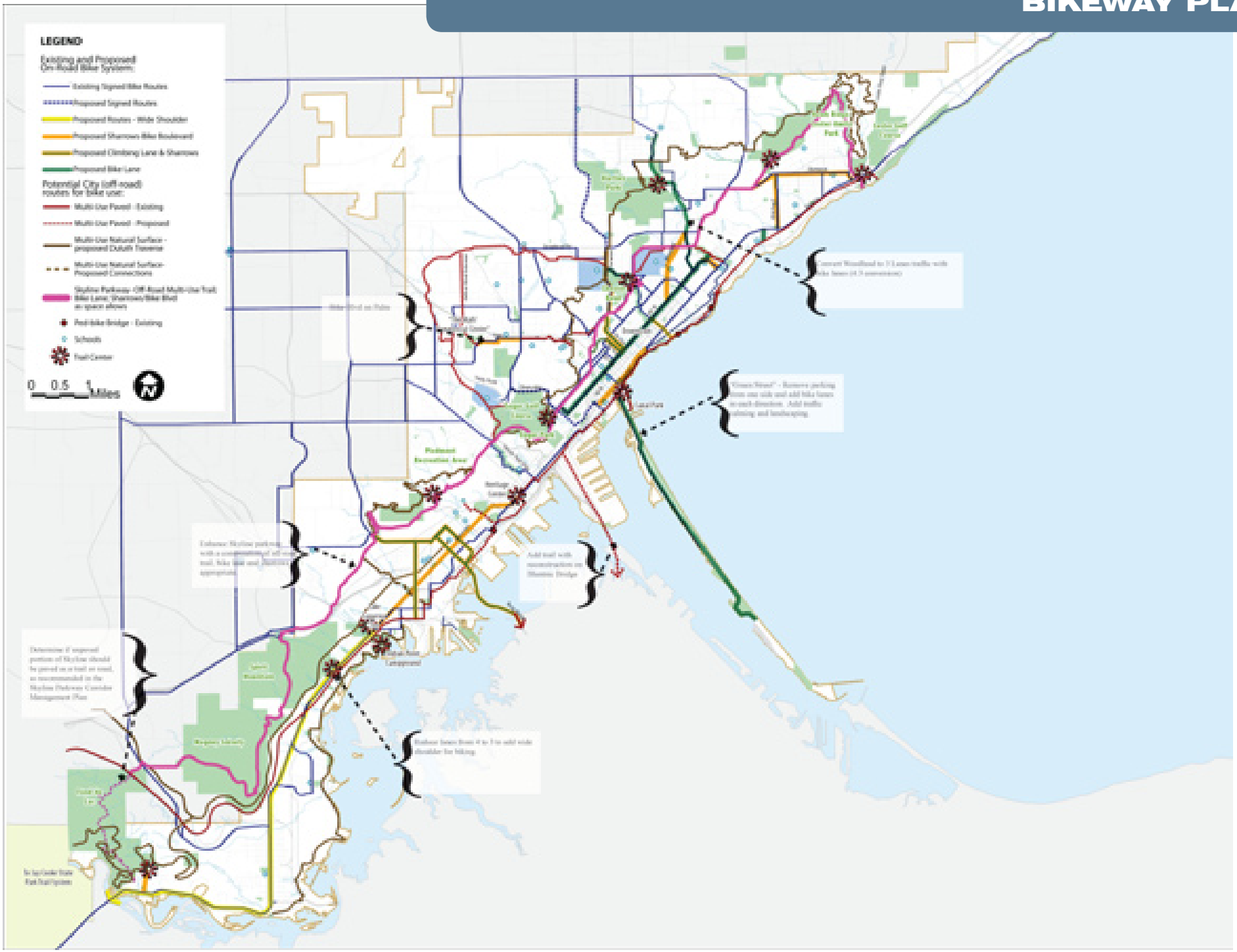
- Create direct trail, bikeway and sidewalk connections from off-street paved trails to major destinations such as such as schools, businesses, parks, etc. and to local sidewalks and pathways.

Bicycle Parking and Support Facilities

Safe, secure bike parking and facilities such as showers support increased bicycle use, particularly in downtown Duluth, at colleges and at major employers. Short-term parking (1-4 hours) should be provided in bike racks near the front door of destinations. Long-term bike parking for commuters, employees and residents can occur in bike lockers or inside of buildings.

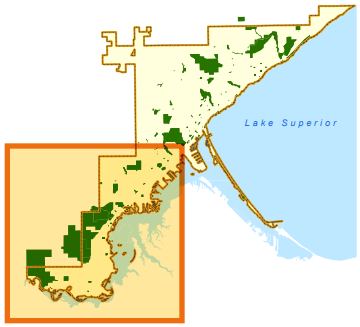
Potential strategies include:

- Develop an ordinance requiring bicycle parking and shower facilities for new construction.
- Continue to install bike racks at all parks and public buildings.
- Provide bike lockers at transit stations. Consider providing locker and shower facilities at transit stations.
- Develop a cost-share program to encourage existing businesses to install bike racks.
- Develop a program that employs local artists to make unique, creative, attractive yet functional bike racks for prominent placement in the downtown and greater Duluth area.


LEGEND
Existing and Proposed On-Road Bike System:
Existing Signed Bike Routes
Proposed Signed Routes
Proposed Routes - Wide Shoulder
Proposed Sharrows Bike Boulevard
Proposed Climbing Lane & Sharrows
Proposed Bike Lane
Potential City (off-road) routes for bike use:
Multi Use Paved - Existing
Multi Use Paved - Proposed
Multi-Use Natural Surface - proposed Duluth Traverse
Multi-Use Natural Surface- Proposed Connections
Skyline Parkway -Off-Road Multi-Use Trail; Bike Lane; Sharrows/Bike Blvd as space allows
Ped/Bike Bridge - Existing
Schools
Trail Center
0 0.5 1 Miles

BIKEWAY PLAN DETAIL

WEST



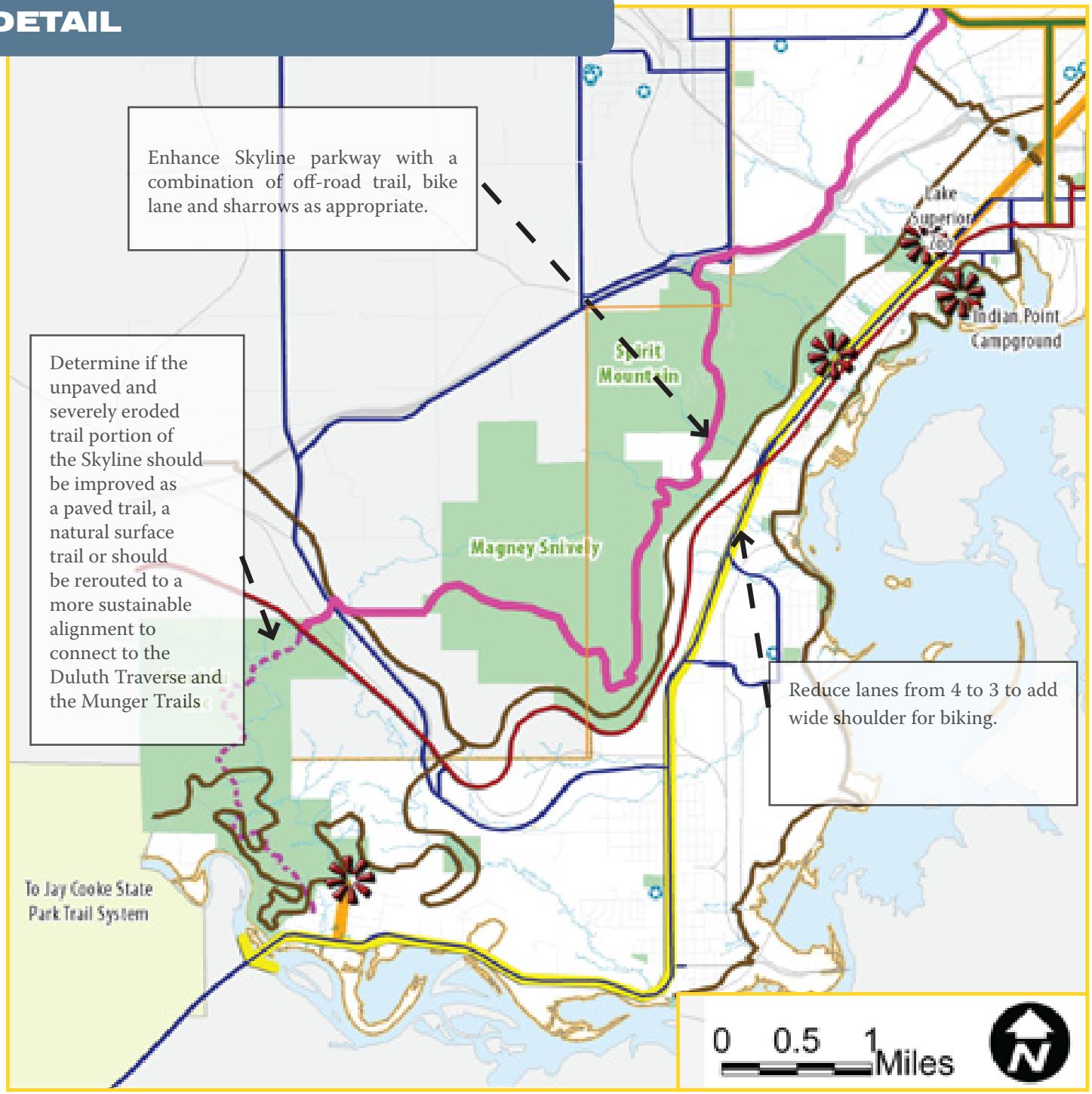
LEGEND

Existing and Proposed On-Road Bike System:

- Existing Signed Bike Routes
- Proposed Signed Routes
- Proposed Routes - Wide Shoulder
- Proposed Sharrows-Bike Boulevard
- Proposed Climbing Lane & Sharrows
- Proposed Bike Lane

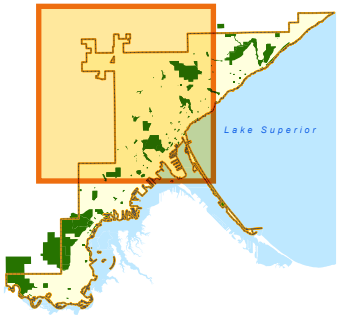
Potential City (off-road) routes for bike use:

- Multi-Use Paved - Existing
- Multi-Use Paved - Proposed
- Multi-Use Natural Surface - proposed Duluth Traverse
- Multi-Use Natural Surface- Proposed Connections
- Skyline Parkway: Off-Road Multi-Use Trail; Bike Lane; Sharrows/Bike Blvd as space allows
- Ped-bike Bridge - Existing



BIKEWAY PLAN DETAIL

CENTRAL



Bike Blvd on Palm

"Green Street" - Remove parking from one side and add bike lanes in each direction. Add traffic calming and landscaping.

Add bike lane with reconstruction on Blantnic Bridge

"The Mall/ Commercial Center"

Chester Bowl

Downtown

Canal Park

Enger Golf Course

Enger Park

Piedmont Recreation Area

Heritage Center

Trinity Road

Observation

Lake Superior

0 0.5 1 Miles

LEGEND

Existing and Proposed On-Road Bike System:

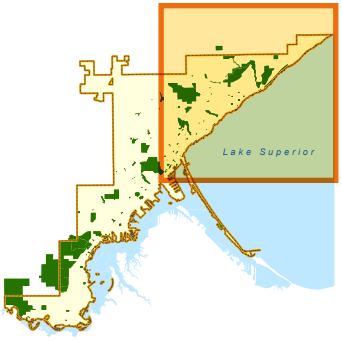
- Existing Signed Bike Routes
- Proposed Signed Routes
- Proposed Routes - Wide Shoulder
- Proposed Sharrows-Bike Boulevard
- Proposed Climbing Lane & Sharrows
- Proposed Bike Lane

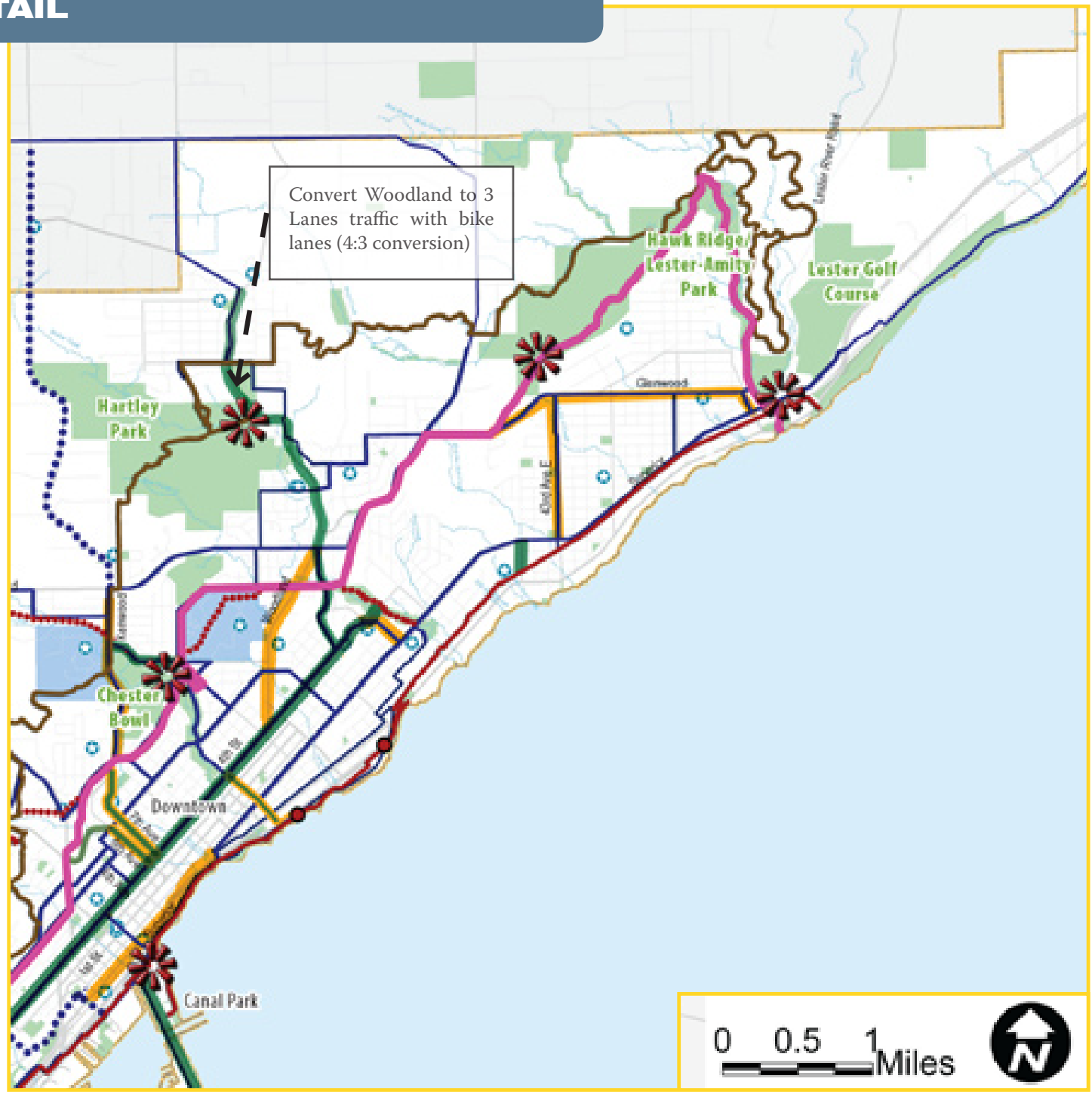
Potential City (off-road) routes for bike use:

- Multi-Use Paved - Existing
- Multi-Use Paved - Proposed
- Multi-Use Natural Surface - proposed Duluth Traverse
- Multi-Use Natural Surface- Proposed Connections
- Skyline Parkway: Off Road Multi-Use Trail; Bike Lane; Sharrows/Bike Blvd as space allows
- Ped-bike Bridge - Existing

BIKEWAY PLAN DETAIL

EAST





LEGEND

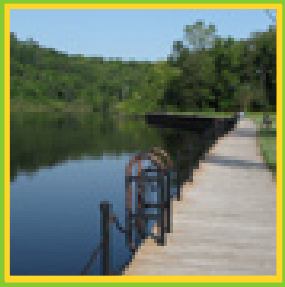
Existing and Proposed On-Road Bike System:

- Existing Signed Bike Routes
- Proposed Signed Routes
- Proposed Routes - Wide Shoulder
- Proposed Sharrows-Bike Boulevard
- Proposed Climbing Lane & Sharrows
- Proposed Bike Lane

Potential City (off-road) routes for bike use:

- Multi-Use Paved - Existing
- Multi-Use Paved - Proposed
- Multi-Use Natural Surface - proposed Duluth Traverse
- Multi-Use Natural Surface- Proposed Connections
- Skyline Parkway: Off-Road Multi-Use Trail; Bike Lane; Sharrows/Bike Blvd as space allows
- Ped-bike Bridge - Existing

DULUTH
Trail and Bikeway Plan



CHAPTER 5

Implementation and Operations Framework

IMPLEMENTATION AND OPERATIONS FRAMEWORK

This section of the Plan includes actions and policies to implement the trail and bikeway plans and to manage, maintain and promote the trail and bikeway system.

Implementation Priorities

The following are recommended initial (2011-2015) priority actions to implement the Trail and Bikeway Plan.

A. Acquire and preserve right of way/corridors for trails and bikeways identified in this Plan through the subdivision land dedication process, donations, easements and purchase. Examples include: potential redevelopment of the Central High School site, trail access to the new Western Middle School, and an easement through the Hayden property to connect the Beacon Pointe and Ledges natural surface trails, etc.

B. Continue the momentum and involvement to the Trails Advisory Group to help foster implementation and coordination of user groups and volunteer efforts.

C. Develop a coordinated marketing and promotions strategy for Duluth's trails.

D. Secure long term public access to County tax forfeited land such as Piedmont Recreation Area and portions of Amity/Lester Park that currently contain actively used public trails and identify and secure all other potential recreation and trail corridors, such as the area between 63rd Avenue West and Spirit Mountian and the Zoo.

E. Begin construction of the Cross City Trail. Cross City trail construction is to be completed by 2015.

F. Construct the Lakewalk Trail extension from 60th Avenue East to Kitchi Gammi Park (Brighton Beach). Scheduled for 2012.

G. Construct the first phases of the Duluth Traverse trail as land and funding are available.

H. Begin the planning, design and public process of adding striped bike lanes on both sides of 4th Street from 10th Avenue W. to Congdon Park Drive.

I. Design and implement a demonstration section/area of a way-finding system for Duluth's trails. Wayfinding is to consist of, but is not limited to: trail and bikeway system maps at trailheads, on-line and at key community places and directional signage along the trails and at trail intersections.

J. Develop a concept plan and preliminary cost estimates for improvement of the DWP rail corridor into a regional trail and seek State and Federal funding.

K. Identify funding partners and submit a request for Legacy Funds for additional regional trail projects.

L. Build commitment (political, staff, tourism partners, public and funding) for implementation of bikeway improvements. Develop a bikeway advocacy group (similar to COGGS, DXC and SHTA) to help foster funding, development and operations of on-street bikeways.

M. Make Skyline Parkway safer and more pleasant for pedestrians and bicyclists (more parkway like character). Initial priorities are the section from Chester to Enger. Co-

ordinate with planned repair/reconstruction work on the Parkway.

N. Develop the Zoo as a trail center and make the key additional trail connections. Coordinate with the changes to the Zoo's vehicular access and circulation as indentified in their master plan.

O. Develop a trail center at the junction of the Western Waterfront Trail, the Munger Trail and the Cross City Trails.

P. Add a paved trail/bikeway connecting the Wade/Wheeler Complex to the Western Middle School and Skyline Parkway.

Q. The City, in partnership with the Duluth Horse Trail Alliance, should study the feasibility of a trail for horse riding using part of the DWP Corridor.

R. Prioritize maintenance projects and seek funding through the grant-in-aid program and other sources.

S. Continue to implement the recommendations of the Wheels on Trails study to enhance accessibility of existing trails.

T. Increase enforcement of trail use regulations i.e. illegal ATV use, off leash dogs, and dumping.

U. Develop a tiered approach to distinguishing trails according to the maintenance each receives.

Funding Sources

The quality of a city's trail and bikeway system is a reflection of the community's ability to strategically leverage existing internal and external resources. Similar to roads, a long-term funding strategy that is updated annually is needed to design, build and maintain the trail and bikeway system. Creating a multi-year funding strategy can be useful in identifying when funding should be solicited so it is available when the City would like to do the project.

The development of a funding strategy begins with the identification and prioritization of trail segments. Gathering information about desired segments in one location will ease future analysis and sequencing of funding sources. Information should include features such as segment location, type, length, property ownership status, preliminary costs, and related environmental improvements. Recognizing that available external sources may not always align with the community's top priorities, this type of information should be gathered about many segments rather than just the community's favorites.

Once the list of potential segments is identified, it is helpful to identify potential funding sources. Selecting appropriate projects for each funding source is one of the factors that contribute to a community's success in securing non-city funding.

When exploring funding sources it is also important to consider grant program requirements. Some grants, particularly ones with federal funds, have specific design or reporting requirements that can raise project costs or add extra administrative costs. Care should be taken in selecting projects where the extra design requirements are not

an issue or the extra reporting requirements are reasonable because of the large piece of funding the grant program provides. For example, in considering an application for a state grant with federal funds, it may make more sense to submit a grant for a $1 million overpass then a $300,000 trail project.

As most grant awards are made more than four months after the date of application, it is too late to seek funding if one is already in the construction year or must be actively conducting engineering for it. For example, if the City of Duluth is envisioning a trail improvement project that is tied to a road reconstruction, then one would want to apply for grant funding a year in advance of the construction commencing to have the funds in place in time. Most grant programs will not allow costs expended prior to the grant award to be considered for either reimbursement or part of the needed match.

In linking projects to funding, consideration should be given not only to the types of projects the funder seeks, but being aware of the maximum grant award, amount of match required, and preferred project size. For example, one grant may seek to fund trails as part of a park experience getting people connected to nature rather than trails that connect people from place to place. That same grant may have a maximum grant award of $200,000 with a 50% match. Since many funders are concerned if there is a significant gap in funding that the City must contribute, it would be more appropriate to select a project with a cost ranging from $400,000 to $500,000 than one costing $1 million if no other funds are available. However, if the City is able to secure other funding to reduce the gap, then the $1 million may be an appropriate fit for the grant.

Another key to success in securing non-city funding for trail systems is developing a persuasive statement of need that fits the characteristics of the funding program. For some funders, the project should address a significant safety issue such as getting children across a busy road to school. For others, it is about having a large number of users and connecting those users to transit, shopping, or employment. Demonstrating the public need for the project is one of the most important components of any grant application. Where possible, this need should be demonstrated through letters of support and community partnerships.

Funding Sources

General Funds

General funds can and should be used to develop and maintain the trail and bikeway system. These funds are best used for smaller projects within the already developed portion of the City such as completing short sidewalk gaps on local streets that may not be eligible for grants. General funds are the primary funding source for on-going trail maintenance, bikeway striping, snow plowing and sweeping.

Enterprise Funds and Bonding

Residents can decide to raise revenue through a permanent or temporary tax increase dedicated for specific purposes such as park, trail and bikeway improvements and maintenance. These funds are usually provided through bonds approved as part of a voter referendum.

State Aid Funds

State aid funds are available for pedestrian and bicycle improvements on state aid streets. This funding source is particularly useful at the time of street construction or re-construction.

Trails and Bikeways Built Along with Development

Developers can be required to provide trails and bikeway at the time of development. This requirement can be negotiated during the site review process or as formalized in the City's subdivision and zoning code.

Park and Trail Dedication

Minnesota Statutes allow local governments to require dedication of land or cash in-lieu of land for parks and trails from new subdivisions. The dedication must be reasonable and rationally related to the recreation demand created by the development. Cities can also require dedication of right-of-way or easements for sidewalks or trails. Park and trail dedication is a frequently used tool to help pay for recreation facilities. Some cities, such as Chanhassen, MN, have adopted a separate trail fee or dedication requirement.

Partnerships

Duluth has partnerships with both public and private organizations that are an essential component to achieve individual projects outlined in this plan. Organizations with partner funding can also provide assistance with design, outreach and maintenance. Local trail clubs are crucial to trail maintenance. Partnerships and relationships with private businesses can also result in easements and use agreements for trails across private land.

Donations

Private donations are another potential funding source. These may be financial donations from individuals or area corporations or donations of labor from recreation clubs or use agreements or trail easements from landowners. Programs such as "adopt-a-trail" by an organization, business, or individuals have successfully been used in many communities to help with maintenance tasks and raise awareness.

Grants

Grants are a way to make the City of Duluth's dollars go further. Below is a sample of some grant opportunities that may be available along with websites to visit for more information.

Minnesota DNR

Website: www.dnr.state.mn.us/grants/index.html

The Minnesota DNR is one of the most comprehensive resources when it comes to state funding for trail programs. They offer a variety of grant programs and technical assistance. Current programs provide assistance for cross country skiing trails, all-terrain vehicle trails, snowmobile trails, mountain biking trails, horseback riding trails and recreational trails. Some programs also offer assistance for the development of parks or for trail amenities such as restrooms, lightning, benches, etc. Any program with the word "Legacy" in its title is funded through the Clean Water, Land and Legacy Amendment.

Each of the Minnesota DNR grant programs is unique. While many have an annual application window in the first quarter, some are available more frequently and others only once every few years. The DNR should be consulted before pursuing a grant to clarify funding availability and qualifications.

Minnesota DOT

Website: http://www.dot.state.mn.us/grants/

Most trail or bikeway improvement projects funded through Minnesota DOT also have a portion which is federal dollars. Since June 9, 1998 there have been three federal bills (TEA-21, ISTEA & SAFETEA-LU) enacted to fund transportation improvements. The current program in place today, SAFETEA-LU expired on September 30, 2009. The reauthorization of this bill will likely occur in some form and fashion and will fund transportation improvements across the United States for the next six years. Examples of programs typically funding trail or sidewalk

improvement projects include Transportation Enhancements or Safe Routes to Schools. While the essence of these bills has primarily supported roadway and safety improvements, roadway projects that have integrated trails have faired better than others during the solicitation process. The City should begin collaborating with other roadway jurisdictions to prioritize projects for the next round of federal transportation dollars. Building early support across multiple jurisdictions will better position the City in obtaining federal dollars.

State Health Improvement Project (SHIP)

The State Health Improvement Program (SHIP) provides funds to reduce the burden of chronic diseases through increasing physical activity, improving nutrition, and reducing tobacco use. The current SHIP program will be end in 2011 unless the State of Minnesota extends it. These funds are administered by the County Public Health Department. Grant requests associated with increasing physical activity are most closely related to this funding source and must focus on policy (laws or regulations), system (organizations or institutions operation) or environmental (land use, zoning or community design) changes. Examples of related projects funded through SHIP include pedestrian/bike master plans, wayfinding signs, bike racks, and trail master plans, as well as Safe Routes to School (SRTS) comprehensive plans for local schools and funds for events to promote walking and biking to school.

Clean Water, Land and Legacy Amendment

In 2008, Minnesota voters approved the Clean Water, Land and Legacy Amendment to the Minnesota State Constitution which increased the general sales and use tax rate by three-eighths of one percentage point (0.375%) to 6.875% and dedicated the additional proceeds as follows:

- 14.25% to a newly created Parks and Trails Fund to support parks and trails of regional or statewide significance.
- 33% to a newly created Outdoor Heritage Fund to be spent only to restore, protect, and enhance wetlands, prairies, forests and habitat for game, fish and wildlife.
- 33% to a newly-created Clean Water Fund to be spent only to protect, enhance, and restore water quality in lakes, rivers, streams and groundwater, with at least 5% of the fund spent to protect drinking water sources.
- 19.75% to a newly created Arts and Cultural Heritage Fund to be spent only for arts, arts education, and arts access, and to preserve Minnesota's history and cultural heritage.

Funding from the Legacy Amendment is administered by a variety of agencies such as the Department of Natural Resources, Pollution Control Agency, Department of Health, Historical Society, and regional art councils. A number of new grant programs were created, including the Parks and Trail Legacy Grant Programs, Solar Energy Legacy Grant Program, Lessard-Sams Conservation Partners Legacy Program and Minnesota Historical and Cultural Grants. Information about grant opportunities can be found on individual state department and organization websites. Along with actual trail dollars, grants may also be made under the waterways aspect of the funding. Funding may be sought for repairs to infrastructure, for example, that may be failing and affecting the City's numerous trout streams.

NPS Rivers, Trails and Conservation Assistance Program

Website: www.nps.gov/ncrc/programs/rtca/

The National Parks Service's (NPS) "Rivers, Trails and Conservation Assistance Program" (RTCA) is designed to provide communities technical assistance to conserve rivers, preserve open space, and develop trails and greenways. The RTCA program also implements the natural resource conservation and outdoor recreation mission of

the National Park Service in communities across America. The NPS highly encourages communities to contact them before submitting an application for assistance.

Recovery and Reinvestment Act

Website: www.recovery.gov

The Recovery and Reinvestment Act was signed on February 17, 2009 and infused our government with a number of new grants and technical assistance programs. These programs and others are a great opportunity for local governments to fulfill the funding gaps they've seen with the economic downturn. These funding sources have a small window of opportunity and require quick action. These opportunities are focused heavily on energy efficiencies and job growth, but trail projects may also be eligible.

Environment & Natural Resources Trust Fund

Website: www.lottery.state.mn.us/etf.html

The Environment and Natural Resources Trust Fund is a program funded through the Minnesota State Lottery proceeds. Between 2003 and 2008 the Trust Fund has shown a strong support for trail projects. The fund is administered by the Legislative-Citizen Commission on Minnesota Resources (LCCMR).

The function of the LCCMR is to make funding recommendations to the legislature for special environment and natural resource projects, primarily from the Environment and Natural Resources Trust Fund.

CURA – University of Minnesota

Website: www.cura.mn.edu

The Center for Urban and Regional Affairs (CURA) is an all-University applied research and technical assistance center. The program is designed to connect the University with nonprofit organizations, businesses, neighborhoods, local governments, and state agencies in Minnesota by providing grants and technical assistance programs.

One program in particular, Center for Community and Regional Research is located on the University of Minnesota Duluth Campus. The program is designed to provide research and technical assistance to local agencies on community projects that serve a local importance. The community is linked with faculty and staff and typically requires a cost sharing agreement. This program and others offered through CURA offer a unique opportunity to partner with the academics for further planning initiatives.

Foundations & Non-Profits

There are foundations and non-profits throughout the state and country that are interested in fulfilling their missions by supporting local projects. Duluth's Friends of the Parks is an example of a non-profit organization focused on advocating for park and trail improvements. There are a number of on-line tools that can assist with the process of identifying additional foundations that may financially support trail and bikeway improvements. The Minnesota Council of Foundations is a great starting point for identifying foundations. Another good starting point is to consider the businesses within Duluth and using their websites to see if they have a foundation or charitable giving department. In addition to retailers and manufacturers, be sure to consider businesses such as the railroad, energy providers and communications companies.

management and maintenance

Trail and bikeway management and maintenance are vital for a successful and sustainable system. A goal of this Plan is to create a sustainable and maintainable trail and bikeway system. The following policy guidelines and Appendix 2- Best Practices for Sustainable Trails offer guidance for ensuring a more sustainable and maintainable trail system in Duluth.

Trail Maintenance Policy Guidelines:

1. Balance the planned trail and bikeway system with the ability to construct and maintain the system.

2. Plan trail and bikeway routes with sustainability, stewardship, accessibility, and maintainability in mind.
   a. Assure that the system is an appropriate maintainable scale.
   b. Meet user needs and expectations and connects destinations.
   c. Assure suitable environmental characteristics – soils, slope, drainage, surface, width, route delineation, safety, ownership/access, accessibility, etc.
   d. Assure appropriate use by mode, condition and season.
   e. Use purposeful trail design and construction using sustainable trail standards (see Appendix 2). Harden/improve existing natural surface trails as needed.
   f. Establish consistent and uniform criteria and communication for closures of natural surface trails for seasonal closures.

3. Suggested trail improvements and maintenance roles are:
City responsibilities -

- Trail and bikeway planning, funding, construction, maintenance (with volunteers and organizations) and management.
- Implementation of a trail and bikeway life-cycle management program.
- Trail corridor inspection, mowing and clearing.
- Vandalism control.
- Trail and bikeway pavement management.
- Ski trail grooming.
- Trailhead maintenance – plowing, pavement management, signage, bathrooms/portable toilets, shelters, trash collection and water.
- Maintenance communication/information on trail maintenance hierarchy/expectations on natural surface trails, trail etiquette/use, and trail conditions/closures/use restrictions.
- Volunteer coordination and recognition.
- Manage the Adopt A Trail program.
- Trail and bikeway maintenance need/reporting process. Enforcement of applicable ordinances.

Volunteer group and organization responsibilities -

- Organized involvement in trail and bikeway planning, development, maintenance and operations.
- Member outreach and advocacy for trail development, funding, maintenance and etiquette.

Parks and Recreation Commission Trails Committee

- Oversight of planning, implementation and operations.

Trail Maintenance Hierarchy

There is a need to define trail maintenance priorities for natural surface trails. Prioritization and communication of

Wayfinding

Wayfinding is the way in which people orient themselves and navigate from place to place and is a vital component of an effective bicycle and walkway system. People need to be able to easily understand and navigate bikeways and walkways in order to conveniently and safely get to their destination.

Wayfinding signs for pedestrians and bicyclists typically show destination, direction and distance. Signs are placed where routes change or there is a change of direction and periodically along the route. For cyclists, pavement markings can be easier to see and can be used to supplement signage. Types of wayfinding signs are described on the next page.

those priorities to the public will help focus limited City and volunteer resources, assist with defining maintenance and repair efforts and make the public aware of trail condition expectations.

Similar to park maintenance priorities, trail maintenance priorities should be defined at various levels of maintenance from high to low. City staff and volunteer groups should work together to establish the priorities, identify which trails are in each maintenance priority/category and identify the trails and categories of maintenance on trail maps.

Potential trail heirarchy categories are:

Tier One trails: ongoing inspection and maintenance of trail surfaces, wayfinding materials, amenities and structures; regular mowing and weed whipping. Examples include: Lakewalk, Western Waterfront Trail, SHT and COGGS trails. Highly maintained.

Tier Two trails: annual inspection and maintenance of trail surfaces, amenities and structures; annual weed whipping or mowing. Examples include ski trails, snowmobile trails, Kingsbury Creek Trail. Minimally maintained.

Tier Three trails: no inspection or maintenance of trail surface or structures. Examples include Mission Creek, the DWP, neighborhood connector trails. No maintenance; use is at user risk.

To be the premier trail city in North America, Duluth will need to commit more resources (both staffing and funding) to trail maintenance and repair as well as to trail construction.

Special Maintenance Considerations

Magney Snively Park - Due to its unique natural resources and sensitive ecosystem, Magney Snively is under consideration for designation as a Minnesota Department of Natural Resources (MnDNR) Scientific and Natural Area (SNA). If that occurs, the park would be managed by the MnDNR and use would be limited under the SNA program. New trails would generally not be allowed. Use of some existing trails would be allowed in designated corridors. Due to potential SNA areas in Magney Snively, it isn't recommended as a future location for trail clusters.

Any trail system that uses it for a connector, such as the Duluth Traverse, should be respectful of potential SNA areas and work to avoid areas of rare natural resources.

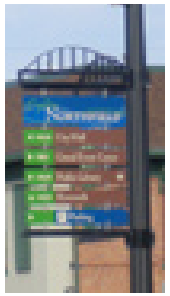
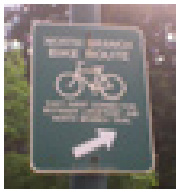
SIGNAGE AND WAYFINDING

City staff and the Duluth Parks and Recreation Commission Parks and Trails subcommittee is working with a trail wayfinding and signage group consisting of representatives of trail user groups to define wayfinding and trail signage needs and to develop a wayfinding plan for Duluth's trails. When complete their wayfinding plan will become part of this plan.

The City and it's parners should embrace and utilize new new technologies, such as moble phone applications and Cyclopath (www.cyclopath.org), to expand access to trail and bikeway information and routes.

Examples of trail and bikeway way-finding elements are shown on the next page.

TRAIL WAYFINDING EXAMPLES

SIGN EXAMPLE	SIGN TYPE	ROLE	PLACEMENT
	Trail Kiosk	Route maps and additional information about destinations such as nearby businesses or history.	At trail centers and trailheads.
	Directional Sign	Identify turns, route destination choices and distance.	Route intersections and decision points along main and local routes and destinations such as Downtown and Canal Park.
	Route Sign	Identify route name and major destination.	Every 1/2 mile along on-road bike routes and at major intersections.
	Button	Identify bikeways.	On existing street signs along bikeway routes.
	Pavement markings	Identify on-road bike routes, sharrows or climbing lanes in addition to route signs.	Pavement.

Promotion, awareness and marketing

Improvements to the physical environment are most effective if coupled with on-going marketing, promotion and awareness efforts. Trail and bikeway information should continue to be provided in digital format on the City's website. If people are aware of the amenities already in Duluth, they will use them more. The City should also create and widely distribute trail and bikeway maps with existing routes, safety information and events.

Programs and events to generate local enthusiasm and support can be an important component in attracting visitors.

Ideas for potential programs and activities include:

Conduct school and community education classes for bike safety, bike commuting, bike maintenance and bike purchasing.

Hold weekly/monthly events in Duluth through local hiking, running, biking and ski clubs.

Coordinate events with non-profit groups.

Hold hike/bike days with the Mayor/City Council, celebrate National Bike Month and Walk to School day.

Hold hike/bike rodeos/carnivals – theme contests, art/costumed bikes, tricycle racing, bike light/pedometer giveaways, bike parade, walking parade, dog walking parade.

Promote walking and biking to local businesses with a "live local-work local" campaign.

Actively promote Duluth trails and bikeways to visitors. Hundreds of thousands of North Shore trail users pass through Duluth every year. Promoting Duluth as a trail destination can foster tourism and economic development.

Trail and Bikeway Policies

1. Proactively acquire and preserve land, right of way or easements for trails identified in this Plan.

2. Subdividers and developers of land with identified trail or bikeways are to dedicate right of way or easements for those planned trails/bikeway in accordance with the City subdivision dedication requirements.

3. This Trail and Bikeway Plan should be incorporated into City, County, Regional and State transportation planning, budgeting and implementation and into City park plans, budgeting and implementation.

4. Continue to maintain/improve abandoned/closed roads that are identified as trail or bikeway corridors.

5. Coordinate stormwater, utility and roadway work with trails, including methods and actions to prevent stormwater erosion of trails and stream corridors.

6. Develop a plan on how to prevent illegal trail use and damage (for example illegal ATV use, dumping, off leash dogs, etc.). This likely to include but not be limited to: hiring of park and trail law enforcement personnel, education and awareness activities, and other actions.

Measuring Progress

Trails and bikeways consist of both qualitative and qualntitative aspects. Not all aspects translate directly into measurements. However, some suggested target goals for implementation of this plan are:

A. Develop the commitment to making Duluth the premier trail city in North America as measured by:

Political commitment – Advocacy of a walkable, bikeable and connected Duluth. Authorization of enhanced budgets for trail construction and maintenance. Approval of Complete Streets projects. Walk/bike/hike events with the Mayor and City Council. Approval of match funds for significant trail and bikeway grants.

Resident and business commitment – Approval of the Park and Trail Enterprise Funding. Increase volunteers for trail maintenance and construction. Expanded trail role of Friends of the Parks, Duluth. Participation in bike, hike and walk events. Participation in an Adopt A Trail program.

City staff commitment - Cross departmental support for trails and bikeway improvements. Expanded volunteer involvement. Integration of Complete Street principles into roadway projects. Expanded trail and bikeway information marketing and communication. Implementation of a trail wayfinding system.

Partner commitment – Advocacy for trail and bikeway improvement, events and maintenance. Participation in an Adopt A Trail program. Funding participation in significant trail and bikeway grants. Bike friendly businesses. Support for parking or street design changes which increase pedestrian and/or bicyclist safety and convenience. Marketing and promotion of Duluth trails by Visit Duluth and the Chamber of Commerce.

B. Add two miles of paved trail per year until the planned off road paved trail network is complete.

C. Add four miles of unpaved multi-use trail per year until the planned unpaved off road trail network is complete.

D. Add two miles of bikeway facilities (striped bike lanes, sharrows, climbing lanes and bike boulevards) per year until the on-road network is complete.

E. Add two miles of bikeway facilities (striped bike lanes, sharrows, climbing lanes and bike boulevards) per year until the on-road network is complete.

F. Continue to make accessibility improvements on trails by creating a minimum of two more miles of accessible trails each year and adding or upgrading at least one trailhead per year to include handicapped accessible toilets and drinking fountains.

G. Install wayfinding signage on a test section of City trails within two years.

H. Enhance trail sustainability by eliminating erosion problems and repairing/restoring of two miles of trail per year.

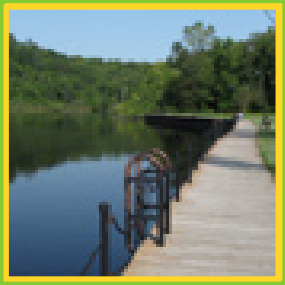
I. Increase City resources for trail maintenance by 15% in three years.

J. Increase bicycling by measuring on-road bicycle riding at key locations and increasing use by 15% within three years.

K. Obtain bronze level certification as a Bicycle Friendly Community through the League of American Bicyclists and International Mountain Bike Association Ride Center designation.

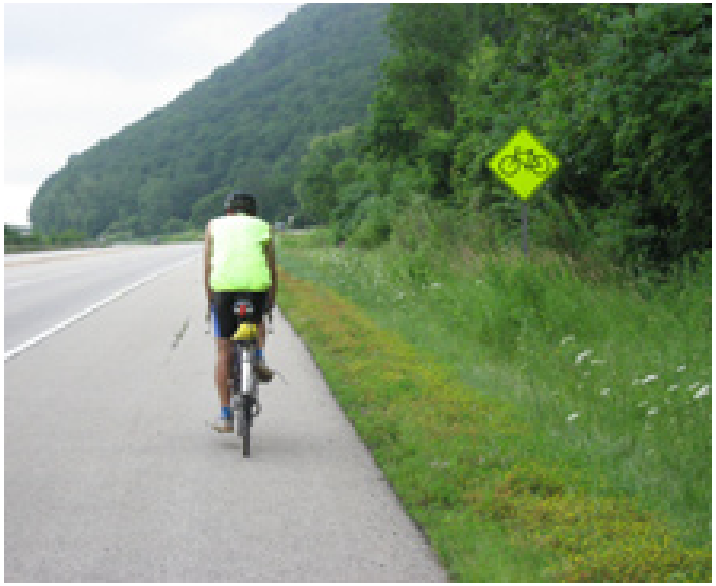
L. Create two new trail centers and two new/renovated trailheads within the next five years.

DULUTH
Trail and Bikeway Plan



APPENDIX

Trail and Bikeway Best Practices



Trail and Bikeway Facility Types

See the Mn/DOT Bikeway Facility Design Manual for detailed standards. The following descriptions give an overview of trail and bikeway facility types described in this plan.

Bike Route - signed / shoulder

Description

- On-street treatment.
- Shared roadway with signage and/or pavement markings.
- On low volume, local streets shares the road with automobile traffic.
- On high volume streets utilizes the road shoulder.

Uses

- Biking

Climbing Lane

Description

- On-street treatment for uphill routes (slower biking speeds). Faster bike speeds on downhills typically keep up with vehicle speeds.
- Bike lane striping, pavement markings and signage increases motorist awareness.
- One-way travel (uphill).
- 4 – 7 feet wide, depending on the traffic volume, available space and presence of on-street parking.
- Differs from a bike route or bike boulevard in that there is a designated lane solely for bikes traveling at slower (uphill) speeds.

Uses

- Biking

Sharrows (Share+arrow)

Description

- On-street treatment.
- Shared roadway with signage and pavement markings.
- Typically on low volume streets or where there is constrained right-of-way.
- Shares the road with automobile traffic.

Uses

- Biking

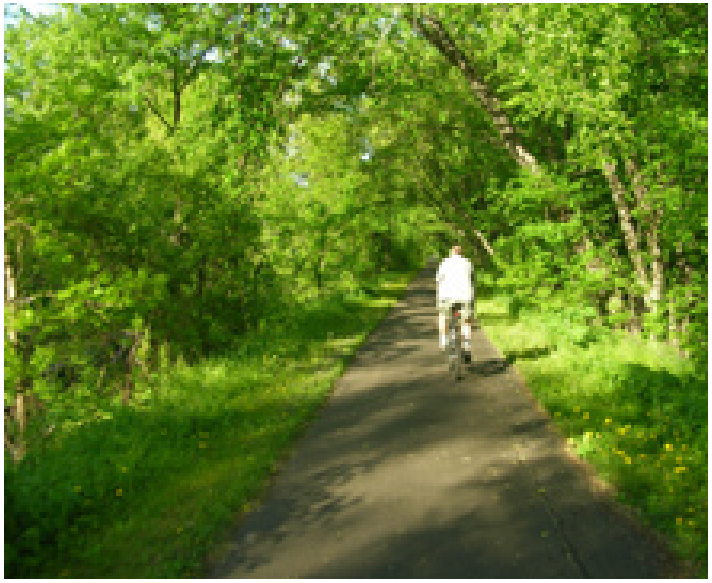
Bike Lane

Description

- On-street treatment.
- Portion of road solely for bike use.
- Bike lane striping, pavement markings and signage increases motorist awareness.
- One-way travel.
- 4 – 7 feet wide, depending on the traffic volume, available space and presence of on-street parking.
- Differs from a bike route or bike boulevard in that there is a designated lane solely for bike use.

Uses

- Biking



Multi-Use Paved Surface

Description

- Off-street treatment.
- May be parallel to the road, but often follows natural resources, railroad corridors or utility corridors.
- Used for recreation and commuting. Corridor width varies 30'-100' or more depending on goals and natural resources.
- May contain multiple parallel trails for desired uses. In high use situations, separate walk and bike trails are warranted.
- Paved.
- Trail width typically 8-14 feet.

Uses

- Walking
- Running
- Biking
- In-Line Skating

Multi-Use Natural Surface

Description

- Off-street treatment. Purpose-built for the intend use/uses.
- Often follows natural resources, parks, greenways, railroad corridors or utility corridors.
- Used for recreation and commuting. These trails offer safe and scenic routes with little or no interaction with motor vehicles.
- Gravel, natural surface or engineered soil, depending upon the intended use and soils/terrain.
- Trail width varies depending on the anticipated volume of use.

Uses

- Walking/Running/Hiking
- Biking
- Horseback Riding
- Winter uses as appropriate (snowmobile, cross country ski or snowshoe)

Best Practices for Sustainable Trails

Designing and developing sustainable trails is the key to a successful trail system. The core elements of a sustainable trail are that it:

- Protects the environment
- Meets user needs and expectations
- Requires little maintenance

While there are many factors that can influence the sustainability of trails, the key characteristics are that they:

(A-6)

Connect positive and avoid negative control points

A sustainable trail will lead users to desired destinations such as water features, historic sites, vistas, interesting landforms and user facilities; while avoiding wet areas, steep slopes, critical habitats, and other culturally or environmentally sensitive areas.

Keep water off the trail

Erosion is the number one problem for sustainable trails. It damages trails, is expensive to repair and diminishes the user experiences. Trails that collect water or channel water will be both environmentally and economically unsustainable.

Follow natural contours

Trails lie on the land in three ways: along a fall-line (in the direction of the slope), on flat ground, or along the contour (perpendicular to the slope). Of these types of trails, only the contour trail on the side-slope easily sheds water and is thus sustainable.

Designing Sustainable Contour Trails

A sustainable contour trail should conform to the following five "rules:"

1. Outslope: The trail tread should be outsloped (sloped away from the hillside) by 5%. This will allow water that comes on to the trail to flow off downhill and not be channeled down the trail.

2. Grade Reversals: While the trail will generally follow the contour of the land, it will also most likely either be climbing or descending slightly. However, a sustainable trail should also reverse its grade often (from down to up and vice versa, "surfing the hillside"). This will reduce the watershed of any given section of trail, prevent water from collecting and running down the trail, and reduce any erosion potential. Most trails should include grade reversals every 20 to 50 feet.

3. Half Rule: A trail's grade (percent slope) should not be any greater than half the grade of the hillside that it contours along. For example, if the slope of the hill the trail runs along is 16%, than the grade of the trail should be no more than 8%. This will allow water to flow across the trail, off the trail and continue down the slope. This is especially important along gentle slopes.

4. Ten Percent Average Grade: An average trail grade of 10% or less will be most sustainable, on most soils and for most users. This does not mean that shorter sections can't be steeper.

5. Maximum Sustainable Grade: The maximum sustainable grade is the steepest grade the trail will attain, and should be determined early in the planning process. Typical maximum grades may vary from 15% to 25%, but this is site specific and depends on factors such as soils, rainfall, the half rule, grade reversals, user type, desired difficulty level, and number of users. See IMBA standards for additional details and examples.

Keep users on the trail

When users leave the trail tread, they widen it, create braided trails and create social trails. These can cause environmental damage and raise maintenance costs. Users leave the trail when it becomes eroded or wet, or when the trail does not meet their needs or expectations.

Offer different user experiences

Sustainable trails and trail systems must meet different users' needs and expectations. If they do not, users may abandon the trails and/or create their own, less sustainable trails.

TRAIL ACCESSIBILITY

New ADA regulations pertaining to outdoor facilities and trails were completed in 1999 to be added to the ADA guidelines. These guidelines address the challenge of creating accessible trails in a natural environment, acknowledging trail users have varying expectations for trail experiences.

The Final Report of the Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas (1999) proposes ADA Accessibility Guidelines (ADAAG) for trails, outdoor recreational access routes, beach access routes, and picnic and camping facilities. The 1999 Final Report is available at: http://www.access-board.gov/outdoor/outdoor-rec-rpt.htm .

Proposed section 16.1 requires all areas of newly designed or newly constructed and altered portions of existing trails connecting to designated trailheads or accessible trails to comply with this section. Proposed 16.1 also requires all newly constructed and altered camping facilities, picnic areas, and beach access routes to comply with section 16. It is recognized that compliance with this section will not always result in facilities that will be accessible to all persons with disabilities. These guidelines recognize that often the natural environment will prevent full compliance with certain technical provisions.

The following four areas highlight potential conditional departures from the ADA guidelines that are permitted for any portion of the trail where compliance would:

1. cause substantial harm to cultural, historic, religious, or significant natural features or characteristics;
2. substantially alter the nature of the setting or the purpose;
3. require construction methods or materials that are prohibited by Federal, State, or local regulations or statutes;
4. not be feasible due to terrain (excessive slope or cross slope) or the prevailing construction practices.

Definitions

Outdoor recreation access route (ORAR): A continuous unobstructed path designated for pedestrian use that connects accessible elements within a picnic area, camping area, or designated trailhead.

Trail: A route that is designed, designated, or constructed for recreational pedestrian use or provided as an pedestrian alternative to vehicular routes within a transportation system.

Designated trailhead: A designated point of access that may contain a parking area, information kiosks, restrooms, water hydrants, and may be reached by vehicular or pedestrian access.

(A-8)

Summary of selected guidelines:

Outdoor Developed Areas Accessibility Guidelines

16.2.1 Surface:

- Firm and stable.
- 16.2.2, Clear Tread Width: 36 inches (3 feet; 915 mm); exception for 32 inches (815 mm).
- 16.2.3, Surface Openings (Gaps):

To prevent wheelchair wheels and cane tips from being caught in surface openings or gaps, openings in trail surfaces shall be of a size which does not permit passage of a ½ inch (13 mm) diameter sphere, elongated openings must be perpendicular or diagonal to the direction of travel; exception to permit parallel direction elongated openings if openings do not permit passage of a ¼ inch (6 mm) sphere; second exception to permit openings which do not permit passage of a ¾ inch (19 mm) sphere.

16.2.4, Protruding Objects:

- ADAAG 4.4; provide a warning if vertical clearance is less than 80 inches (2030 mm).
- 16.2.5, Tread Obstacles (Changes in level, roots, rocks, ruts):
- Up to 2 inches (50 mm); exception up to 3 inches (75 mm).

16.2.6, Passing Space:
At least 60 inches (1525 mm) width within 1,000 foot (300 m) intervals. Appendix note recommends more frequent intervals for some trail segments.

16.2.7.1 Cross slope:

- 1:20 (5%) maximum; exceptions for open drains up to 1:10 (10%).
- 16.2.7.2 Running Slope:
- 1:20 (5%) any length
- 1:12 (8.33%) for up to 200 feet - No more than 30% of the total trail length shall exceed 1:12
- 1:10 (10%) for up to 30 feet
- 1:8 (12.5%) for up to 10 feet

16.2.8, Resting Intervals:

Size: 60 inch (1525 mm) length, at least as wide as the widest trail segment adjacent to the rest area. Less than 1:20 (5%) slope in any direction. Resting areas are required where trail running slopes exceed 1:20 (5%), at intervals no greater than the lengths permitted under running slope (see 16.2.7.2 above).

16.2.9, Edge protection:
Where provided, 3 inch (75 mm) minimum height. Handrails are not required.

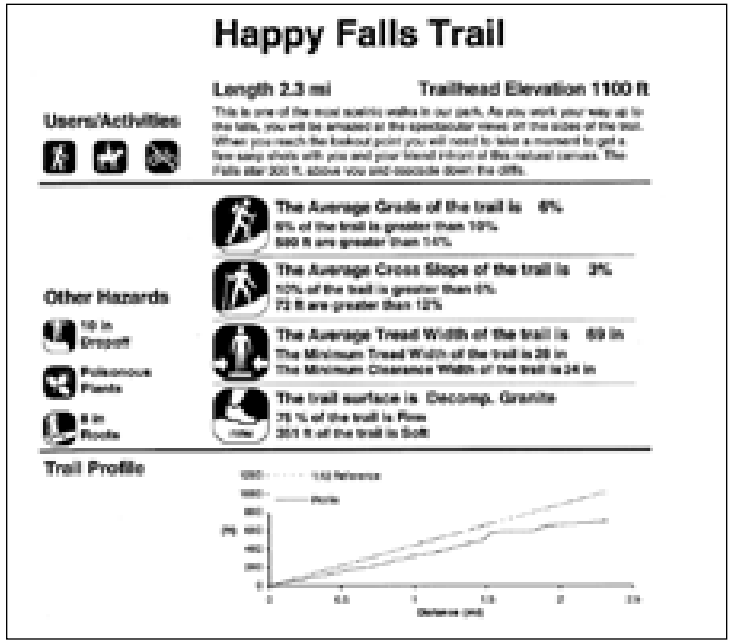
16.2.10, Signs:

(A-10)

- Accessible trails require designation with a symbol of accessibility, and information on total length of the accessible segment.
- No traffic control sign information.

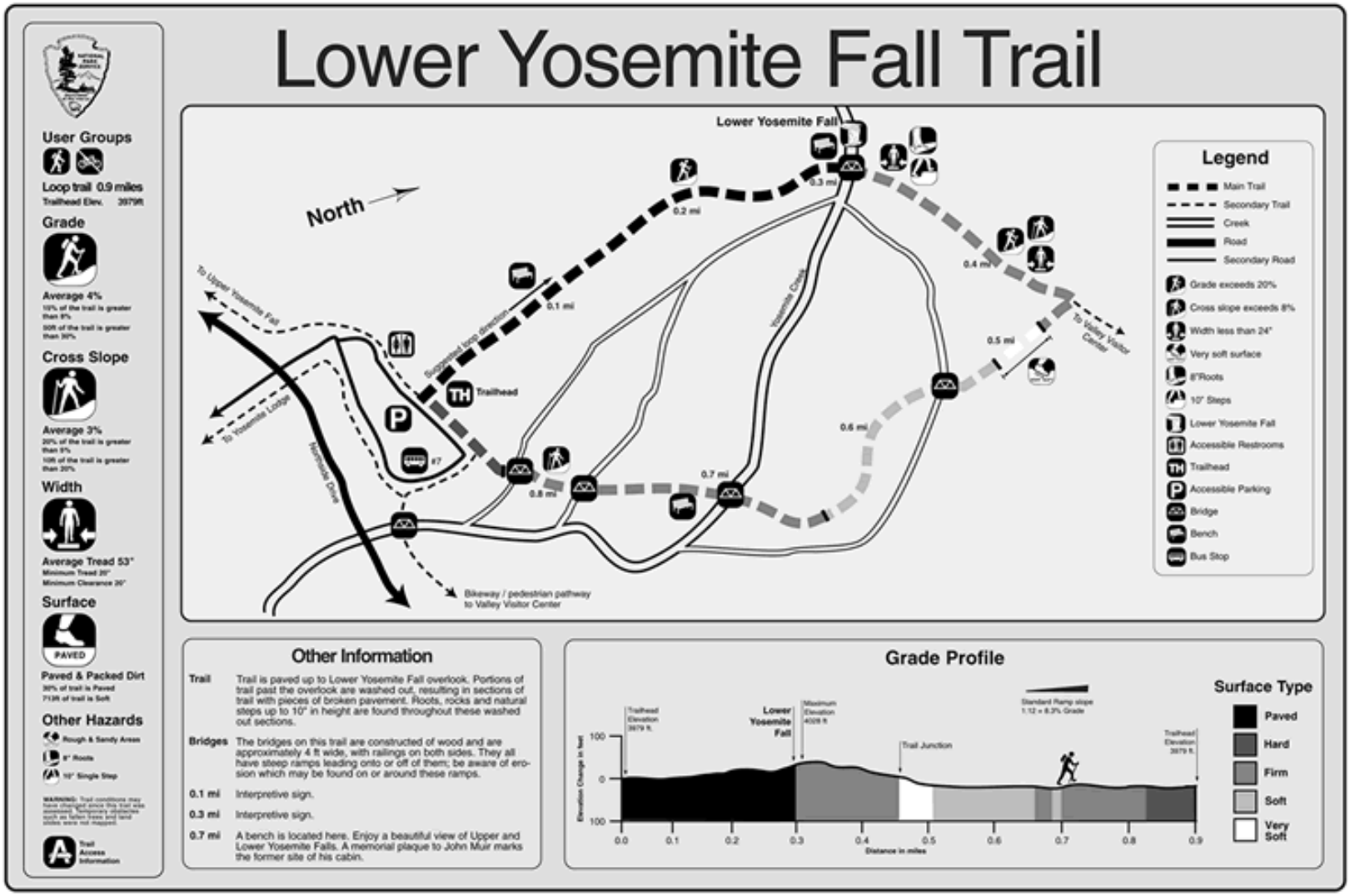
Signs: Given the wide variability in the actual trail characteristics that may be encountered on a trail, it is strongly recommended that objective information about the actual trail conditions be provided for all trails, whether or not they are accessible. Objective information about actual trail condition will assist users in determining whether the trail meets their own abilities and offers the experience they are looking for.

SIGN EXAMPLE:



Reference;
Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas Final Report, September 30, 1999

SIGN EXAMPLE:



(A-11)

This is sample of full trailhead signage that would be printed in full color and could be placed at the beginning of the trail. It could also be formatted to fit into a fold up pocket guide.

Reference;
Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas Final Report, September 30, 1999

THE CITY OF
DULUTH
MINNESOTA