A photograph of a paved trail leading through a wooded area. The trail is on the right side of the image, leading towards a bridge in the distance. The left side of the trail is lined with young trees and tall grasses. The background is filled with dense green foliage.

CROSS CITY TRAIL MINI-MASTER PLAN DULUTH, MINNESOTA

Hoisington Koegler Group Inc. 
March 27, 2017 



ACKNOWLEDGEMENTS:

City of Duluth:

City Council Members:

Emily Larson, Mayor

Zack Filipovich

Jay Fosle

Howie Hanson

Barb Russ

Joel Sipress

Elissa Hansen

Noah Hobbs

Gary Anderson

Em Westerlund

Parks and Planning Staff:

Lisa Luukkala, Project Manager

Patrick Loomis, Lead Engineer

Kathy Bergen

John Kelley

Judy Gibbs

Jim Shoberg

Hank Martinsen

Andrew Slade

For More Information Contact:

Lisa Luukkala

City of Duluth Parks and Recreation Division

218.730.4300

lluukkala@duluthmn.gov

Cross City Trail Stakeholder Committee:

- Tom Albright
- Mike Casey
- Alison Clarke
- Susan Coen
- James Gittemeier
- Rose Hanson
- Jeanne Koneczny
- Lucky Lennon
- Bill Majewski
- Jack Paquette
- Eric Viken
- Deede Westerman

Consultant Team:

Hoisington Koegler Group, Inc.



CONTENTS

01 INTRODUCTION + REGIONAL CONTEXT.....	1
Purpose of the Plan.....	2
Definition of a Regional Trail + Regional Significance of the Cross City Trail.....	3
Master Plan Process.....	5
02 EXISTING CONDITIONS.....	7
Jurisdictional Boundaries and Land Use.....	8
Physical Conditions + Natural Resources.....	10
03 VISION, TRENDS + PUBLIC VALUES.....	13
Vision.....	14
Guiding Principles.....	14
Trends.....	14
Public Health Initiatives.....	15
Economic Development and Tourism Opportunities.....	15
04 TRAIL DEVELOPMENT PLAN.....	17
Overview of the Trail Alignment.....	18
Cross City Trail Segments.....	20
Typical Trail Development.....	32
Trail Programming Plan.....	34
05 IMPLEMENTATION, MANAGEMENT, + SUSTAINABILITY PLAN.....	35
Overview.....	36
Phasing + Priorities.....	36
Land Acquisition + Easements.....	36
Management + Operations.....	36
Funding.....	43
Sustainability Plan.....	44
Ecological Stewardship Plan.....	44
Research Plan.....	44
06 APPENDIX: REFERENCED PLANS.....	47





Photo Credit: Friends of Western Duluth Parks & Trails

01. INTRODUCTION + REGIONAL CONTEXT



The Cross City Trail bridges the gap between the Willard Munger State Trail and Duluth's Lakewalk

Purpose of the Plan

The Duluth Cross City Trail Mini-Master Plan outlines the vision for a 10.3 mile multi-purpose, non-motorized, wheelchair-accessible, paved trail system that connects the Lakewalk and Canal Park in downtown Duluth to the Munger Trail, the Western Waterfront Trail, the Lake Superior Zoo, and Spirit Mountain Recreation Area in western Duluth. The trail fills a critical gap in the statewide trail network, helping to connect the Munger Trail, which runs 70 miles along the I-35 corridor from Hinckley to Duluth, to the Gitchi Gami Trail, which will eventually run 86 miles along the North Shore Scenic Drive corridor from Two Harbors to Grand Marais. The plan is the culmination of 12 years of intensive planning and development work at the federal, state, local, and grassroots levels. It represents the consensus conclusion that connecting the North Shore corridor and the Lakewalk to the Munger Trail is a statewide recreational priority and that the plan outlined here is the optimum way to establish that connection.

RESPONSIBLE AGENCIES & PARTNERS

The City of Duluth Parks and Public Works departments will provide trail planning, construction, development, operations, and maintenance services. In order to provide substantive and continual programming of the trail, it is envisioned that the City of Duluth will partner with local organizations:

- » Irving Community Club
- » Riverside Community Club
- » Morgan Park Community Club
- » Norton Park Community Club

- » Lincoln Park Business Group
- » Healthy Duluth Area Coalition
- » COGGS (Cyclists of Gitchee Gumees Shores)
- » Duluth Bike Coalition
- » Friends of West Duluth Parks and Trails

LEGACY FUNDING

The Greater Minnesota Regional Parks and Trails Commission was established by the Minnesota State Legislature in 2013 to provide recommendations for Legacy grant funding to parks and trails outside the seven-county metropolitan area. All parks and trails must have an approved master plan before they will be eligible to receive Legacy funds. The City of Duluth envisions Legacy funding as a key mechanism to move forward with development of this trail. The Cross City Trail is a connector of statewide significance in two respects: it connects two statewide destinations within Duluth—the Lakewalk/Canal Park area and the Munger Trail/Spirit Mountain area—and connects two statewide destinations on either side of Duluth—the state parks strung along the Munger Trail to the south and the state parks strung along the Gitchi Gami Trail to the north.

Definition of a Regional Trail + Regional Significance of the Cross City Trail

NON-MOTORIZED REGIONAL TRAIL CLASSIFICATION

Criteria #1: Provides a High Quality “Destination” Trail Experience

The Cross City Trail provides a dynamic experience for users, showcasing both the industrial and

natural assets of Duluth and the St. Louis River Corridor. Portions of the trail travel beneath the towering ore docks of the industrial waterfront and next to restored river habitat. Another lengthy segment runs above the river on the former Duluth, Winnipeg, and Pacific (DWP) rail corridor, providing views through restored natural forests to the river more than 100 feet below. Along the way, the trail provides access to the revitalized historic business district in Lincoln Park and three designated trout streams. Most of the

trail alignment exists on smooth, level terrain, allowing use by people of all ages and abilities, while immersing visitors in their surroundings. The southwestern two-thirds of the trail is particularly high quality with few road crossings and the trail substantially separated from the road corridor for all but a few short stretches.

Development of the Cross City Trail will preserve a continuous, safe, non-motorized route across Duluth. Designating land for use as a trail corridor will also provide public access to currently inaccessible scenic stretches along the St. Louis River corridor. Exposing trail users to these distinct, but related, aspects of the St. Louis River highlights the importance of the river as both a beautiful natural amenity, and as an essential part of Duluth’s history, economy, and culture.

Criteria #2: Well-located (i.e. Convenience of Access/Adequate Length) to Serve Regional Population and/or Tourist Destination

As the fourth largest city in Minnesota and a popular Great Lakes tourist destination, Duluth provides recreational amenities for over 86,000 residents and 3.5 million visitors annually. Duluth serves as the North Shore’s hub for entertainment, recreation, and jobs.

Studies indicate that half of a regional trail’s users live within a 3/4 mile radius (core service area), and 75% of trail users live within 3 miles of the trail (primary service area). See Figure 1.1. The Cross City Trail will serve approximately 9-10,000 households in its core service area, and 15,000 households within its primary service area. The trail by itself is 10.3 miles. Connections to the Lakewalk, Munger, and Western Waterfront Trails will provide more than 30 continuous miles of trails.

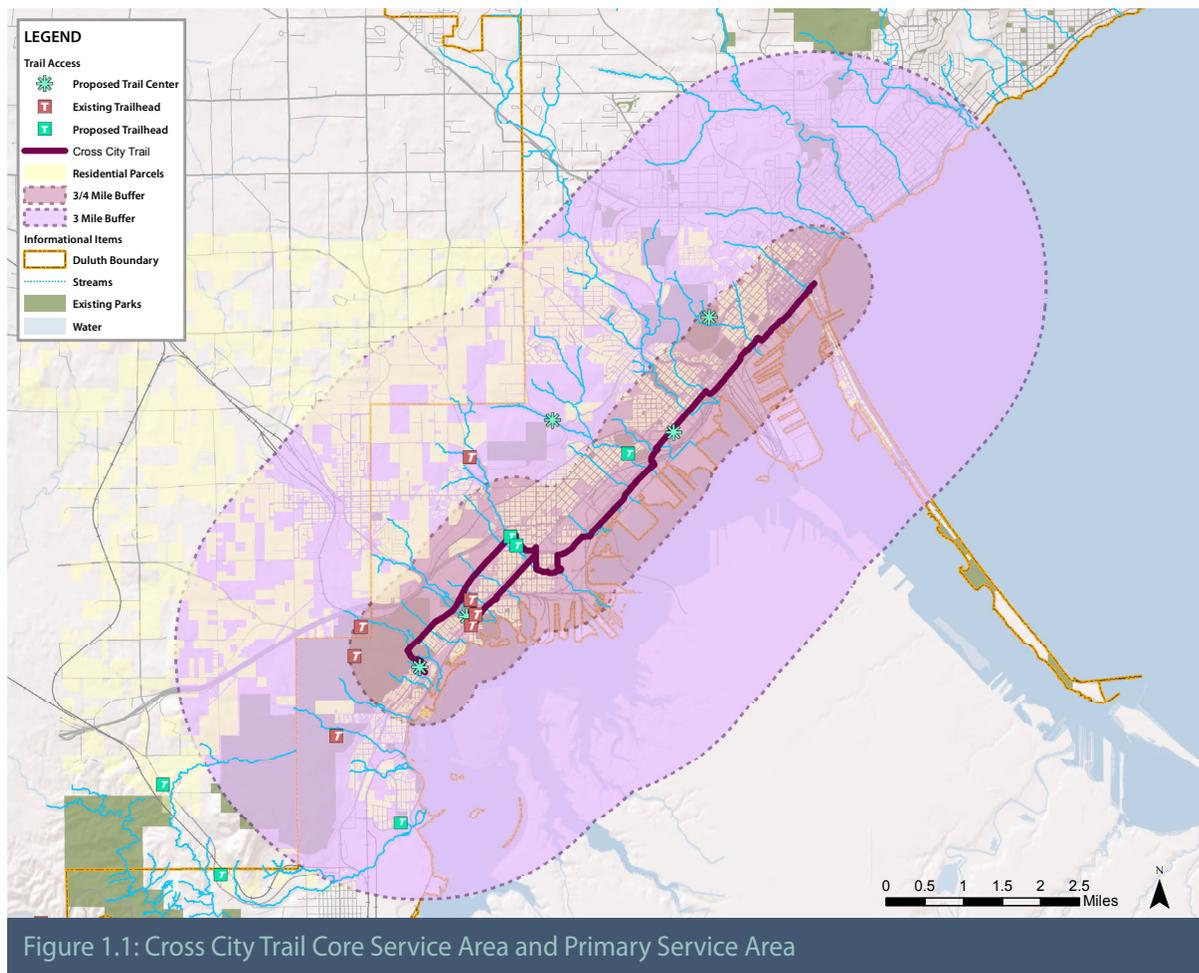


Figure 1.1: Cross City Trail Core Service Area and Primary Service Area

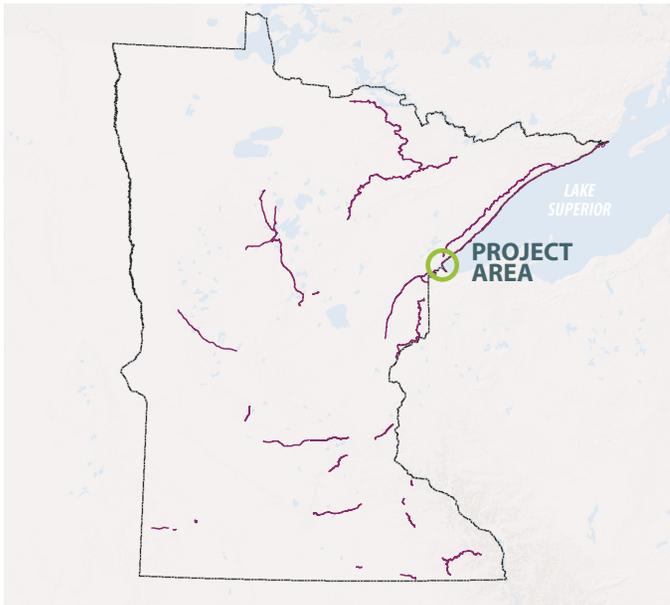


Figure 1.2: Context within the MN State Trail System

Criteria #3: Enhances Connectivity to other Regional and State Level Trails within the Region, and Connects to Regional Destinations

The Cross City Trail connects statewide recreational destinations at three geographic scales. Within Duluth, the trail completes a 20-mile trail from one end of the city to the other that connects northeast Minnesota’s most popular tourist destination—the Lakewalk/Canal Park area—to the burgeoning Spirit Mountain/Lake Superior Zoo area along the St. Louis River and on to Jay Cooke State Park.

Between Duluth and neighboring cities, the Hermantown/Proctor Munger Trail Spur, designated as regionally significant by the Greater Minnesota Regional Parks and Trails Commission in 2016, can only achieve its goal of connecting to the Munger Trail and the Lakewalk via the Cross City Trail.

At a larger scale, the trail is a big step toward connecting the Gitchi Gami State Trail and state parks north of Duluth to the Munger State Trail and state parks south of Duluth. At its southwest end the Cross City Trail contributes to a system of accessible loops comprised of three parallel interconnected trails—the CCT on the slopes of Spirit Mountain, the Munger State Trail in the middle, and the Western Waterfront Trail on the riverfront (see Figure 1.3, Regional Context). The result is a series of short loops that provide wheelchair access to an extraordinary diversity of locales including:

- » Three recreation destinations - Lake Superior Zoo, Spirit Mountain Recreation Area, and Indian Point Campground

- » Three distinct natural environments - mature mountainside forests, cold water trout streams, and coastal wetlands.

In an unusually long and thin city, the Cross City Trail also provides a critically important community connector directly connecting 11 neighborhoods, four business districts, and parks and recreation areas.

Criteria #4: Fills a Gap in Recreational Opportunity within a Region

The Cross City Trail will fill a gap in an 8-mile-long, densely populated stretch of the City of Duluth that currently has no off-road, continuous, wheelchair-accessible trail connection between downtown Duluth, western Duluth neighborhoods, and several parks and recreation destinations in Western Duluth (Lake Superior Zoo, Spirit Mountain, and the St. Louis Riverfront). The trail will also connect residents and visitors in this area of the city to state, regional, and local trails to the north and south that are today only accessible by car or transit. The ease of use and frequent access points along the Cross City Trail will bring great recreational and non-motorized transportation value to residents of and visitors to Duluth.

SETTING THE STAGE

In the 2011, Duluth Trail and Bikeway Plan, Mayor Don Ness called for Duluth to be “the premier trail city in North America.” Part of this vision is to provide many different trail experiences and levels of service within a comprehensive trail system. Since the plan’s adoption, the city has been prioritizing trail projects and connections. Today the city lacks a clear trail spine that will connect many diverse trail experiences within the city, but

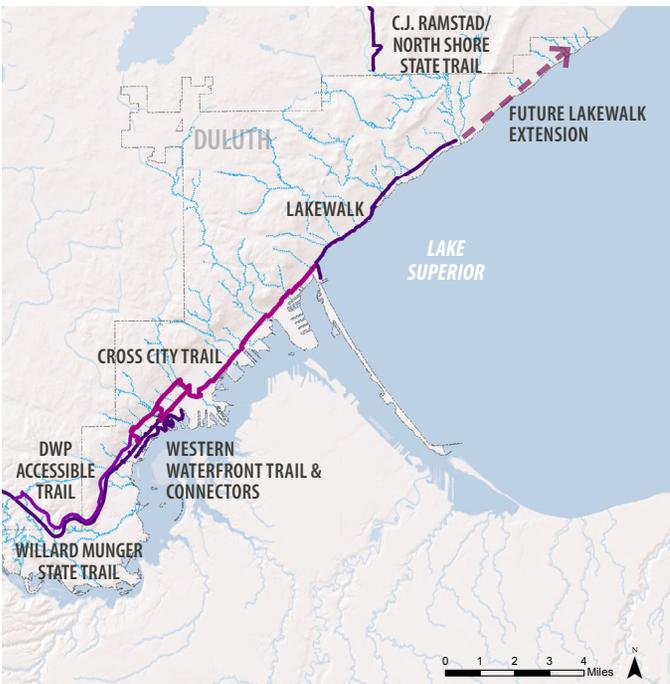


Figure 1.3: Regional Context

the Cross City Trail can provide man within Duluth's comprehensive trail system.

Trail users in Duluth include: walkers, runners, hikers, bicyclists, inline skaters, and others. Within each of these groups, different levels of ability exist. Duluth seeks to provide trails that will engage the most experienced mountain biker and the novice hiker. The Cross City Trail will not only draw users of the Willard Munger State Trail, but will also be a link to connect residential neighborhoods throughout the city to high quality and diverse trail experiences within western Duluth. The connection of the Cross City Trail to the Lakewalk will provide a link from western Duluth to recreational opportunities in eastern Duluth and further along the North Shore of Lake Superior.

Master Plan Process

HISTORY OF THE PLANNING EFFORT

While the Cross City Trail Master Planning process formally began in the summer of 2015, dreams of a Cross City Trail were being discussed as early as 2004, when Congressman Jim Oberstar sponsored a Federal Transportation bill that made funding available for trail construction. From that point on,

efforts to jumpstart a trail across Duluth from the Lakewalk to the Willard Munger State Trail faced many obstacles, progressing slowly in fits and starts.

While some segments of the trail were highly contested, others were fast-tracked, resulting in completion of the first phase of the project, from the Lakewalk to 30th Avenue W, in 2014. Plans for two other segments from Green Street to Spirit Mountain (along the upper DWP), were already being designed and engineered by the time the formal master planning process began in the summer of 2015. The disjointed nature of the trail's development left a missing link, deemed the "Phase 2 gap area" that became a primary focus of community engagement in the master plan, with four alternative routes up for consideration.

MASTER PLAN

The Cross City Trail Master Plan process began in the summer of 2015. The major phases of planning included:

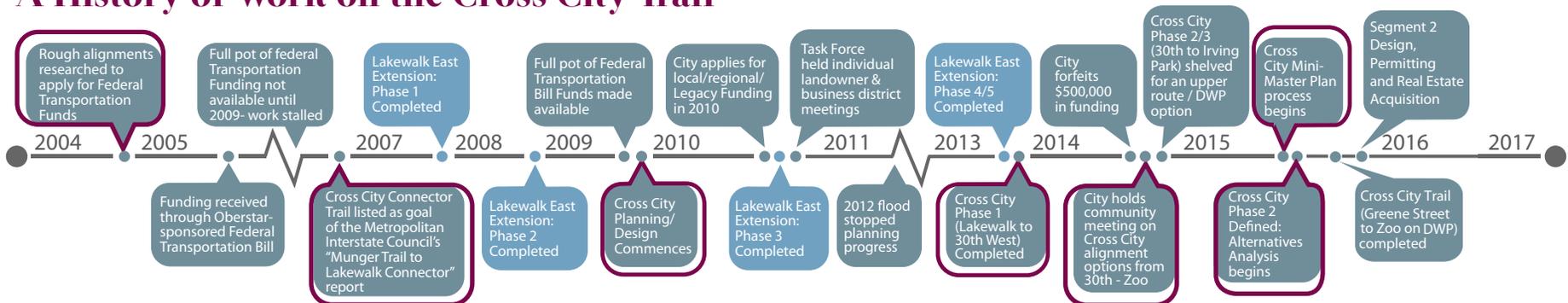
1. Organize the Effort: Site inventory and analysis, Background data gathering (June-August 2015)

- 2. Understand What Exists:** Context mapping, Needs analysis, Issues and Opportunities (August-October 2015)
- 3. Explore the Alternatives:** Study trail alignment alternatives, Community meeting #1 (November 2015-February 2016)
- 4. Prepare Draft Master Plan** (February-March 2016)
- 5. Finalize Master Plan Concepts:** Community meeting #2, Master Plan edits (April-May 2016)
- 6. Ground Truth Master Plan Concept:** Confirm availability and practicability of preferred alignment (June 2016 to February 2017)
- 7. Formal Master Plan Approval:** City approvals (March 2017)

CITIZENS ADVISORY COMMITTEE

A Citizens Advisory Committee (CAC) was organized by the City Parks staff made up of neighborhood leaders, engaged Duluth trail users, and Parks Commission representation. The CAC met five times throughout the master

A History of Work on the Cross City Trail



planning process. The committee provided useful background information, reviewed public engagement materials, gave input on the vision and guiding principles, helped to develop route alternatives, and served as a checkpoint for broad public opinion on the Cross City Trail.

COMMUNITY ENGAGEMENT

The master planning process included two public meetings, as well as online engagement. The first public meeting was held on December 10, 2015 at Denfeld High School. This meeting gave the public background information on the history of the Cross City Trail planning effort and covered options for the overall trail alignment, but focused primarily on the gap area between the completed trail segment that ends at 30th Avenue W, and Keene Creek Park, where the city-owned portion of the upper DWP trail begins. Nearly 100 people attended the meeting. The consultants gave a presentation that walked people through four alternative alignments for the Cross City Trail as it traversed the gap area, outlining the benefits and challenges of each. In order to reach a broader audience, an online survey based on the content of the meeting was posted for four weeks on the City's website. Almost 300 people provided feedback that was used to select a preferred route.

The responses to the survey and at the public meeting showed a clear preference for a riverside route through the gap area.

The second public meeting was held on February 25, 2016 at Denfeld High School. This meeting focused on reviewing the feedback received from the first open house and survey, and on obtaining input on trail features, amenities, and connections. The meeting resulted in broad support of the

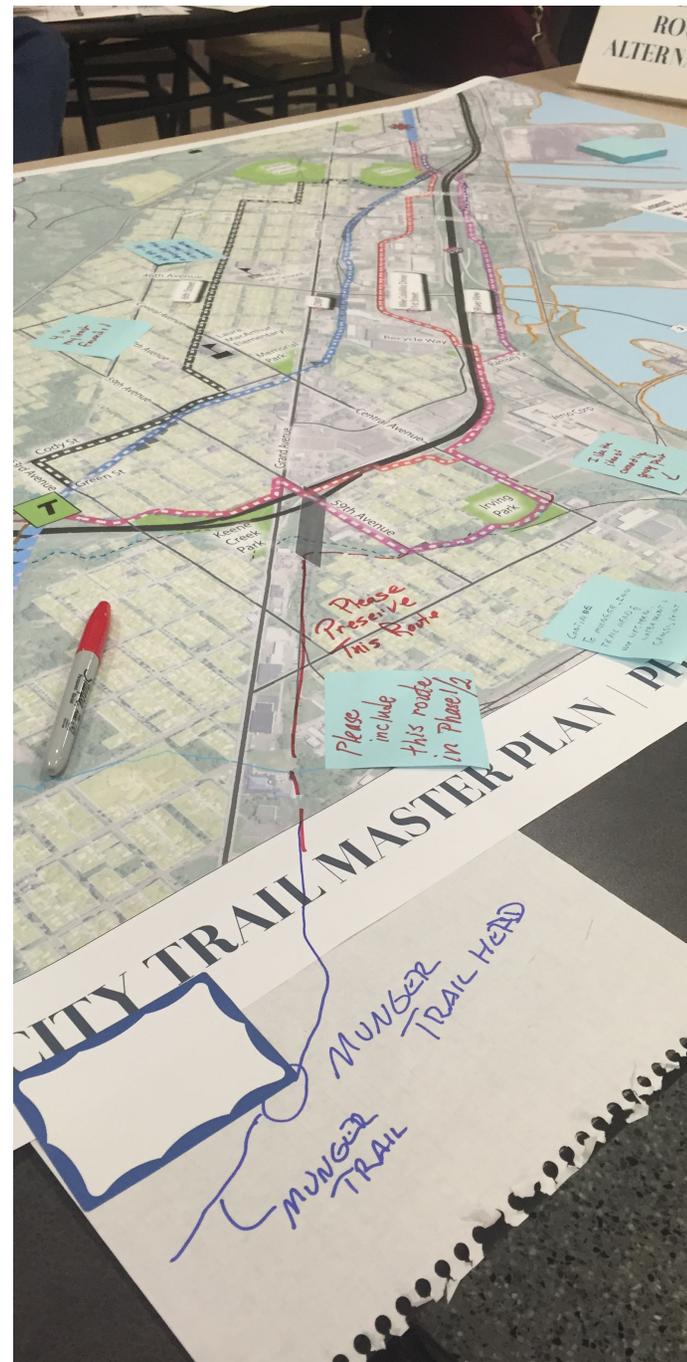
Cross City Trail master planning effort, consensus on the preferred route, and great anticipation of the project's completion.

GROUND TRUTH PROCESS

City staff-led an extensive ground-truthing process to confirm the availability and practicability of the preferred alignment by identifying, soliciting, and negotiating with property owners and identifying practicable engineering strategies to construct the trail in close proximity to significant buried and above-ground public infrastructure. Particular attention was given to the Segment 2: River Route where collaborative problem solving with private and public entities was needed to secure a trail alignment.



Attendees of Public Meeting #1 Discuss Route Alternatives



Mapping Exercise Comments from Public Meeting #1



Photo Credit: Friends of Western Duluth Parks & Trails

02. EXISTING CONDITIONS

Jurisdictional Boundaries and Land Use

CITY PARKS DEPARTMENT PARK AND TRAIL INITIATIVES

The Duluth Parks Department is leading the planning, design, and construction of the Cross City Trail. Some portions of the trail have already been constructed, while other portions utilize trail corridors that are currently used informally as trails. Park staff are also working on several other park and trail projects related to development of the Cross City Trail:

- » St. Louis River Corridor Trail Plan
- » St. Louis River Corridor Neighborhood Parks Mini-Master Plans
- » Duluth ATV Trails Study
- » Western Waterfront Trail Restoration
- » Western Waterfront Park and Trail Mini Master Plan
- » City-wide Signage, Wayfinding and Gate Plan
- » Duluth Traverse Mini Master Plan
- » Spirit Mountain Recreation Area Master Plan

LAND USE CONTEXT

The Cross City Trail lies entirely within the City of Duluth. The majority of the trail corridor is within City-owned land, including road right of way, parks, preserve areas, and recreational corridors. The northeastern half of the trail that connects the Lakewalk Trail to Keene Creek Park is within an urban setting. Industrial land uses along the river provide a unique surrounding that reflects Duluth's heritage as a harbor city. Southwest of Keene Creek Park, the trail corridor is in a natural

setting, weaving through parks and forested natural areas.

Significant portions of the trail alignment near the riverfront and the Verso paper plant are in private ownership. The city is in discussions with the owners about purchasing the properties outright or just purchasing easements to construct trails across them.

The alignment closely approaches two areas slated for state-led ecological restoration—a portion of Kingsbury Creek that DNR intends to restore and a portion of the riverfront that MPCA plans to restore. The city is coordinating with DNR and MPCA on design, permitting, and construction of the trail in these areas.

Significant safety issues and barriers along the northeastern portion of the trail include road crossings, while the southwestern portion of the trail includes several creek crossings and steep slopes.

CITY AND REGIONAL TRAIL CONNECTIONS

In the 2011 City of Duluth Trail and Bikeway Plan, the City set forth the goal of making Duluth the premier trail city in North America. The Cross City Trail is critical to that vision. At a regional scale, the trail is a big step toward connecting the Munger State Trail south of Duluth to the Gitchi Gami State Trail north of Duluth. In the Greater Duluth area, the Cross City Trail is the connector between the Hermantown/Proctor Munger Trail Spur and Duluth's trail system. Citywide, the Cross City Trail completes a 20-mile trail from one end of the city to the other that connects northeast Minnesota's most popular tourist destination—the Lakewalk/Canal Park area—to the burgeoning

Spirit Mountain/Lake Superior Zoo area along the St. Louis River and on to Jay Cooke State Park. In the Spirit Mountain/Lake Superior Zoo area, the Cross City Trail combines with the Munger State Trail and the Western Waterfront Trail to create a series of interconnected accessible loops that combine mountainside panoramas, trout streams, mature pine forests, and riverfront. At the neighborhood level, the Cross City Trail also provides a critically important community connector directly connecting 11 neighborhoods, four business districts, and several parks and recreation areas.

The Cross City Trail also serves as a connector to other types of outdoor recreation activity:

- » The Superior Hiking Trail, a natural surface hiking trail that runs 310 miles up the North Shore to the Canadian Border.
- » The Duluth Traverse, a 100-mile-long natural surface, mountain-bike-optimized multi-use trail running from one end of Duluth to the other that includes a major hub at Spirit Mountain Recreation Area that is accessible directly from the Cross City Trail.
- » Spirit Mountain Recreation Area with year-round activities including downhill and cross-country skiing, camping, and gravity mountain bike trails.

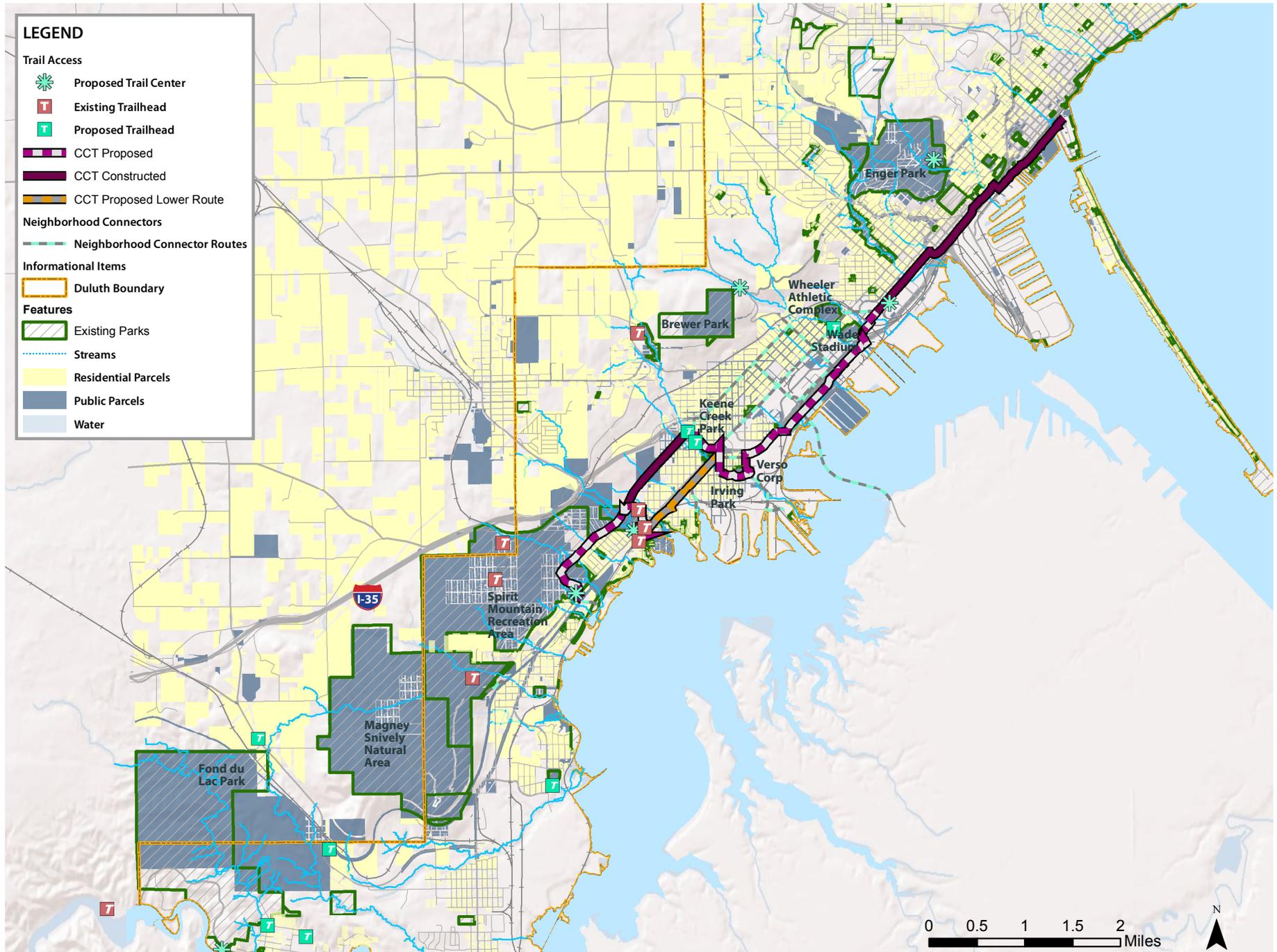


Figure 2.1: Land Use and Boundaries Map

Physical Conditions & Natural Resources

OVERVIEW OF TOPOGRAPHY, WETLANDS, MLCCS/MCBS, STREAMS, EROSION, HISTORY OF FLOODING

From the Lakewalk to I-35/Keene Creek Park, the Cross City Trail corridor is mostly on flat terrain. Between 40th and 46th Avenues, industrial and natural wetlands exist on both sides of the trail corridor. Through the Irving Park neighborhood, the trail corridor follows Keene Creek. West of Keene Creek Park, the trail corridor will follow a gradual upward slope toward Spirit Mountain Recreation Area.

Portions of Spirit Mountain Recreation Area are identified as high and outstanding areas of biodiversity significance.

In June of 2012, a major rain storm caused flooding that damaged several parks, trails, roads, and private properties in Duluth. The City has been working to repair the damage, but several parks and trails still show evidence of the flood damage. Future planning and development around creeks, rivers, and drainage ways should consider potential future flood damage.

The alignment closely approaches two areas slated for state-led ecological restoration—a portion of Kingsbury Creek that DNR intends to restore, and a portion of the riverfront that MPCA plans to restore. The city is coordinating with DNR and MPCA on design, permitting, and construction of the trail in these areas.

SITE ISSUES AND OPPORTUNITIES – MAJOR BARRIERS, LAND OWNERSHIP

Segment I, the Lincoln Park Section from the Lakewalk to Carlton Street, has been constructed. This portion of the trail is primarily along a road and makes several at-grade and grade-separated crossings. The trail here is in an urban context, which provides more connections between people and places, but the recreational experience could be further enhanced with trail amenities, wayfinding, and landscaping.

This route provides opportunities for cultural and historical interpretation of Duluth's working riverfront, along with exposure to scenic urban nature as a unique recreational trail experience.

Segment II: The River Route - Carlton Street to Irving Park. Segment II begins along Duluth's working waterfront—an area that combines towering 100-year-old ore docks with restored riverfront—then proceeds through the grassy campus of the Verso paper plant into an idyllic, streamside neighborhood park. Issues here include land ownership, land use, neighborhood connectors, and safe road crossings.

This segment requires negotiation of property acquisitions or easements with six property owners. Industrial uses next to the trail will require signage and fencing to keep trail users from straying into work areas. The northeastern end of this segment is separated from the neighborhood to the north by I-35 overpasses and underpasses. Quality signage and connector trails will be necessary for residents to safely access the trail. Key connections include 40th Ave W, 46th Ave W, 38 1/2 Ave W and the Bong Bridge.

Segment III: The Keene Creek Section - Irving Park to Greene Street travels from Irving Park along Keene Creek, crosses Grand Avenue to Keene Creek Park, and then proceeds through the park to Greene Street. This is the least well-defined phase. Issues will include property ownership, wetlands, safe clearance from highway overpasses, and the Grand Avenue crossing.

Segment IV: The Zoo Connection - Greene Street to the Zoo, has been constructed. It proceeds on the abandoned Duluth, Winnipeg, and Pacific (DWP) rail bed through an undeveloped forested natural area crossing two streams along the way. The recreational experience could be enhanced with trail amenities, wayfinding, and landscaping. This segment is vulnerable to damage from frequent illegal ATV use.

Segment IVa: Zoo to the Munger Trailhead, drops down from the DWP into the Fairmount neighborhood, enters Fairmont Park, then travels along a designated trout stream (Kingsbury Creek) under the Grand Avenue bridge and through a culvert beneath the Burlington Northern (BN) railroad before joining a paved segment of the Western Waterfront Trail and proceeding to the Munger Trailhead. Issues in this area include wetlands, coordination with DNR creek restoration, and BN permission to run the trail through a culvert beneath the railroad. This segment is a crossroads between major trails—the Cross City Trail, the Munger Trail, and the Western Waterfront Trail—and major outdoor destinations—Fairmont Park, Lake Superior Zoo, and Indian Point Campground. This critical trail connection warrants investment in high quality wayfinding. It is also an area rich in cultural and natural resources that deserves high quality interpretive signage.

Segment V: The Spirit Mountain Connection - Zoo to Spirit Mountain, begins in upper Fairmont Park near Kingsbury Creek, runs on the DWP trail west, jogs through the Spirit Mountain Recreation Area maintenance yard, crosses Knowlton Creek on an existing bridge, then follows an alpine ski trail down to the chalet. Issues include two historic bridges above the zoo that are in need of restoration, separation of uses near the maintenance yard, and challenges meeting accessibility standards at the Knowlton Creek bridge and the Spirit Mountain ski run. This segment boasts mature red pine forests, historic bridges, the cascades of Kingsbury Creek, and the food and beverage services at the lower Spirit Chalet. The portion of this phase in Fairmont Park is rich in natural and cultural resources that warrant high quality interpretive signage.

Segment Va: Spirit to Munger, travels from the lower Spirit Chalet, around the Spirit parking lot, down the driveway, across Grand Avenue at a signalized intersection to the Munger Trail. Alignment and design of this phase needs to be coordinated with plans for mixed use development below Spirit Mountain.

Segment VI, establishes a more direct, lower connection from the Irving Park neighborhood to the Munger Trailhead by following an inactive BN spur line west from 59th Street to the existing Munger Trailhead opposite 72nd Avenue West and the Zoo. The feasibility of this phase needs to be further explored with analysis of ownership and rail and road crossings. This corridor provides good connections to Irving Park neighborhood residents and the Munger Trail, the Western Waterfront Trail, Indian Point Campground, and the Lake Superior Zoo.



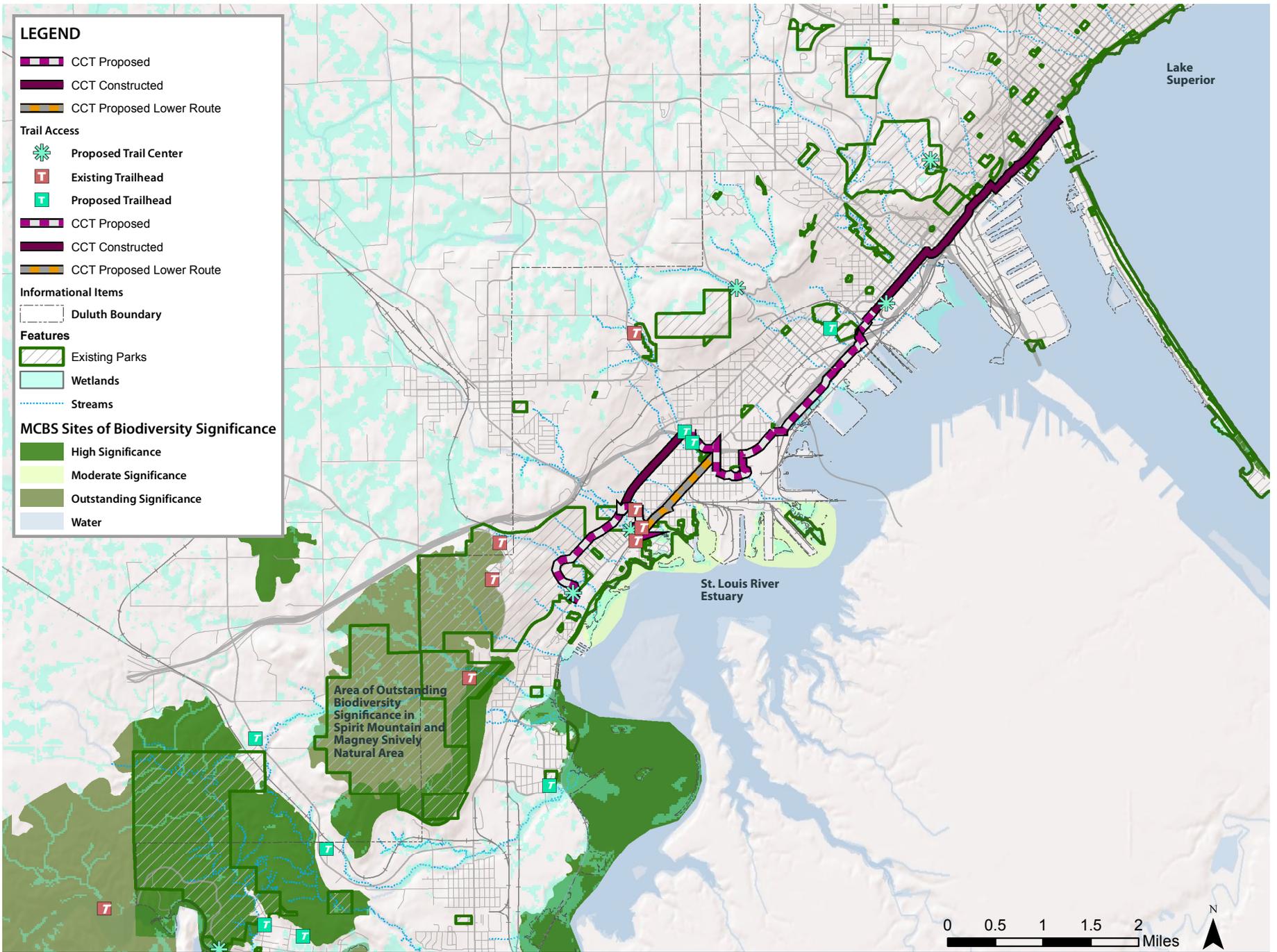
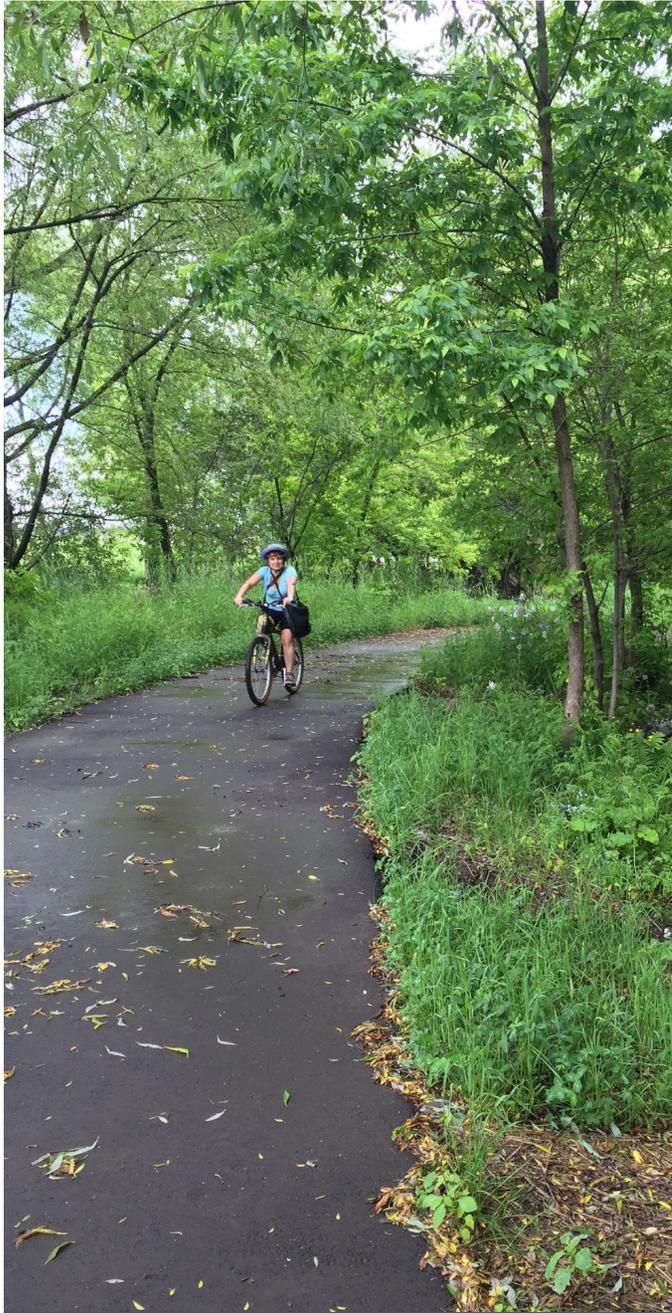


Figure 2.2: Topography and Natural Resources Map



03. VISION, TRENDS, & PUBLIC VALUES



Utilizing existing trail segments supports economic feasibility. A portion of Grassy Point Trail through Irving Park is proposed to be used for the Cross City Trail.

Vision

The Duluth Cross City Trail will be a one of a kind, off-road trail for non-motorized trail users of all ages and abilities. The trail will provide a connection from the Willard Munger State Trail to the Duluth Lakewalk, offer safe access to distinctive natural areas in western Duluth, present exceptional views of the St. Louis River Corridor and estuary, and fill a gap in a significant state trail route from central Minnesota to the North Shore of Lake Superior.

Guiding Principles

1. Connect the community
 - *Connect western Duluth neighborhoods to downtown Duluth and the Lakewalk with a recreational trail that increases non-motorized transportation options to link neighborhoods, schools, parks, and places of employment*
2. Provide a high quality user experience that is unique to Duluth
 - *Highlight routes that exemplify Duluth's cultural and natural heritage (the landscape of Duluth, the working riverfront, historical rail corridors, northern Minnesota woods, St. Louis River corridor and estuary)*
3. Provide a safe trail experience for users of all ages and abilities
 - *ADA accessible, off-road, minimal at-grade road crossings*
4. Ensure technical and economic feasibility
 - *Route with eye for pragmatic implementation, while keeping in mind community benefit. Position project for outside funding and partnerships, plan for ongoing maintenance costs.*

5. Be environmentally sustainable
 - *Construct trail using sustainable standards and best management practices*
6. Promote economic development
 - *Link to businesses, residential areas, and regional attractions; encourage future development*

Trends

DEMOGRAPHIC TRENDS

The Duluth-Superior metropolitan area's long-range transportation plan, which is called Connections 2040, was updated in 2014 by the Duluth-Superior Metropolitan Interstate Council (MIC). This long-range plan looks out to the year 2040 to guide public investments in multi-modal transportation infrastructure in the metropolitan area. This plan includes updated 2010 demographics, historic trends, and projections to 2040 for the entire metro area. The overall Duluth-Superior metro area is projected to grow by 7-17% by 2040, which means the metro area's 2010 population of 148,000 could grow to 173,000 by 2040.

NON-MOTORIZED TRANSPORTATION AND RECREATION TRENDS

The Duluth-Superior metro area is experiencing increased demand for non-motorized transportation options. From 2004 to 2013, use of public transit grew by 20% according to the Duluth Transit Authority (DTA). Since each DTA bus has a bike rack attached to its front, the DTA has also been able to monitor bike rack use. From 2006 to 2012, DTA saw the annual number of bikes brought on buses increase by 14,000, which

equates to a 14% increase annually over the six-year period.

The Millennial generation's travel behaviors have shown an increasing demand for public transit, ridesharing, and non-motorized travel modes such as biking and walking. As the Baby Boomer generation moves into its senior years, they are expected to demand environments that are more supportive of walking, biking, and transit. In the Duluth-Superior metro area, the percentage of seniors is projected to increase from 7% of the population in 2010 to 19% in 2040.

The cities of Duluth, Hermantown, and Proctor each have adopted city-wide trail master plans that guide future development of an extensive trail network in the metro area, which includes the Cross City Trail as a key connection.

In 2010, the City of Duluth adopted a Complete Streets policy that incorporates both motorized and non-motorized transportation into the planning of new and reconstructed city streets.

In 2011, Duluth put forth an ambitious vision to be the premier trail city in North America with its Trail & Bikeway Plan. This trail plan envisions an extensive trail network within Duluth as well as trail corridors that connect with Hermantown and Proctor.

Over the past four years, the Duluth-Superior MIC has partnered with the Healthy Duluth Area Coalition to conduct bike and pedestrian counts each spring and fall in order to monitor the level of bike and pedestrian traffic and identify potential infrastructure improvement needs.

Public Health Initiatives

Through collaborative partnership with the Statewide Health Improvement Program (SHIP), Healthy Duluth, St. Louis County Public Health, Duluth YMCA, and over a dozen other organizations, community health issues are being addressed through policy, systems and built environment changes to encourage active living and improve residents' access to healthy food. Much of this work has focused on equitable active recreational opportunities and creating a diverse community transportation system.

Economic Development and Tourism Opportunities

There are a number of opportunities for economic development and tourism related to the planned Cross City Trail, including the following:

- » Spirit Mountain's variety of recreational facilities and events, particularly skiing and mountain biking
- » Races and other large events in downtown Duluth, including Grandma's Marathon
- » Linking to the Munger State Trail and the planned Hermantown Proctor Munger Spur Trail
- » Direct access to Duluth's Lakewalk Trail and Canal Park's many restaurants and shops
- » Camping along the Cross City Trail at Indian Point Campground or Spirit Mountain
- » Visiting the Lake Superior Zoo
- » Trips to Bayfront Festival Park, the Duluth Children's Museum, Great Lakes Aquarium, and the Duluth Heritage Sports Center
- » Access to local businesses along the trail through West Duluth



The Cross City Trail's connection to Bayfront Festival Park provides access to variety of events throughout the year, from concerts, to brewfests, to winter skating.





04. TRAIL DEVELOPMENT PLAN

CHAPTER ORGANIZATION

This chapter is organized to give an overview of the entire trail corridor, detail maps of each segment moving from east to west, typical trail development standards, and programming. The sections are as follows:

- » Overview of the Trail Alignment
- » Cross City Trail Segments
 - Segment I: The Lincoln Park Section - Lakewalk to Carlton Street
 - Segment II: The River Route - Carlton Street to Irving Park
 - Segment III: The Keene Creek Section - Irving Park to Greene Street
 - Segment IV: The Zoo Connection - Greene Street to the Zoo
 - Segment IVa: Zoo to Munger Trailhead
 - Segment V: The Spirit Mountain Connection - Zoo to Spirit Mountain
 - Segment Va: Spirit to Munger
 - Segment VI: The Lower Route - Irving Park to Munger Trailhead
- » Typical Trail Development
- » Trail Programming Plan

Overview of the Trail Alignment

Over the course of 10.3 miles, the Cross City Trail travels from an urban environment in downtown Duluth to an expanse of highly scenic natural areas on Duluth's southwestern edge, showcasing Duluth's working riverfront, the St. Louis River Corridor, western Duluth's neighborhoods, local parks, and a variety of tourism destinations along the way.

From east to west, the alignment goes from the Lakewalk through the urban Lincoln Park neighborhood to the Heritage Center/Wade Stadium sports hub. From Wade Stadium, the trail travels along the working riverfront to the Irving Park neighborhood where it splits into an upper route and a lower route. The interim upper route connects to the zoo, Fairmont Park, Spirit Mountain and the Munger Trail via the mountainside DWP rail-to-trail connection. The long-term lower route would follow a more direct path to the Munger via an inactive BN rail bed.

Segment I of the Cross City Trail, from Duluth's Lakewalk to Carlton Street, was completed in 2014. Segment IV, from Greene Street to the Zoo, was completed in 2016. One of the main objectives of the master planning process was to determine a route for Segment II from Carlton Street to Irving Park.



The Cross City Trail connects the Munger Trail and western Duluth neighborhoods with the Lakewalk Trail at Canal Park.

Cross City Trail Segments

Segment I: The Lincoln Park Section - Lakewalk to Carlton Street

The nearly three-mile Phase I from the Lakewalk Trail in Canal Park to the Duluth Heritage Sports Center was constructed in 2014. This portion of the trail is primarily along roads and makes several at-grade and grade-separated road crossings. Parts of the trail are lit and provide access to Duluth tourist destinations, including Canal Park businesses, downtown Duluth, Bayfront Festival Park, and the Great Lakes Aquarium. The character of this section of the trail is mostly urban and industrial. The existing trail ends at the intersection of Superior Street and Carlton Street.

Pedestrian and bike connections to important destinations, such as the Duluth Heritage Sports Center and the Wade and Wheeler Athletic Complex will improve the neighborhood connectivity and functionality of the trail.

Improvements for this section of the trail include the addition of wayfinding, signage, and amenities, such as benches and trash cans. Where space is available, trees and other landscaping should be added to increase shade on the trail and provide a more pleasant recreational experience.

The Minnesota Department of Transportation has developed concept plans to reconstruct parts of the I-35, I-535, Highway 53 interchange, which is locally known as the “Can of Worms”. The reconstruction may influence the trail alignment through this segment and/or present opportunities for connector trails.



Figure 4.2: Cross City Trail - Segment I: The Lincoln Park Section - Lakewalk to Carlton Street - Already Constructed



1/3 of Segment II travels along a wooded corridor adjacent to the St. Louis River

Segment II: The River Route - Carlton Street to Irving Park

The River Route was one of four Segment II alignments examined in 2015 and 2016. In the end, the general public identified the River Route as the favorite as it is removed from roads, has fewer road crossings, and provides a more pleasant and interesting recreational experience than the other options.

From Carlton Street, the Cross City Trail will travel along the east side of Wade Stadium beneath towering 100-year-old ore docks, cross over I-35 on an existing pedestrian bridge, and pass an industrial area before settling into a scenic stretch along the estuary. The trail then proceeds around the grassy campus of the Verso paper plant to picturesque stream-side Irving Park, a neighborhood park with athletic fields, picnic facilities, and a playground. Many segments of the River Route are already used as an informal trail by neighborhood residents.

Segment II is the most complex of the six Cross City Trail segments. The riverside portion of Segment II requires purchase of two railroad properties, an easement along the periphery of an industrial site, and coordination with an MPCA-led ecological restoration project. Passage of the trail through a pinch point between the Verso plant and I-35 requires complex real estate negotiations between Verso and MNDOT. Extensive buried and above-ground public infrastructure requires careful engineering and inter-agency coordination. Industrial uses next to the trail require signage and fencing to keep trail users from straying into work areas.

The northeastern end of this phase is separated from the neighborhood to the north by three I-35 overpasses and underpasses. Quality signage and connector trails will be necessary to get those residents to and from the trail safely.

Along with design and construction of the trail surface in this segment, additional improvements include the need for wayfinding, signage, benches, trash cans, trail access points, lighting, and landscaping. Because of the proximity of industrial truck traffic, railroad tracks, and the freeway, it is important to include necessary safety measures along the trail and at road crossings.

Because I-35 limits access to some of Segment II, it is essential that the City pursue implementation of the Neighborhood Connector Routes shown in Figure 4.3. Neighborhood Connector Routes could be sharrows, bike lanes, or protected bikeways in conjunction with sidewalks. A complete streets approach that provides safe, non-motorized transportation options to connect adjacent neighborhoods to the Cross City Trail is encouraged.

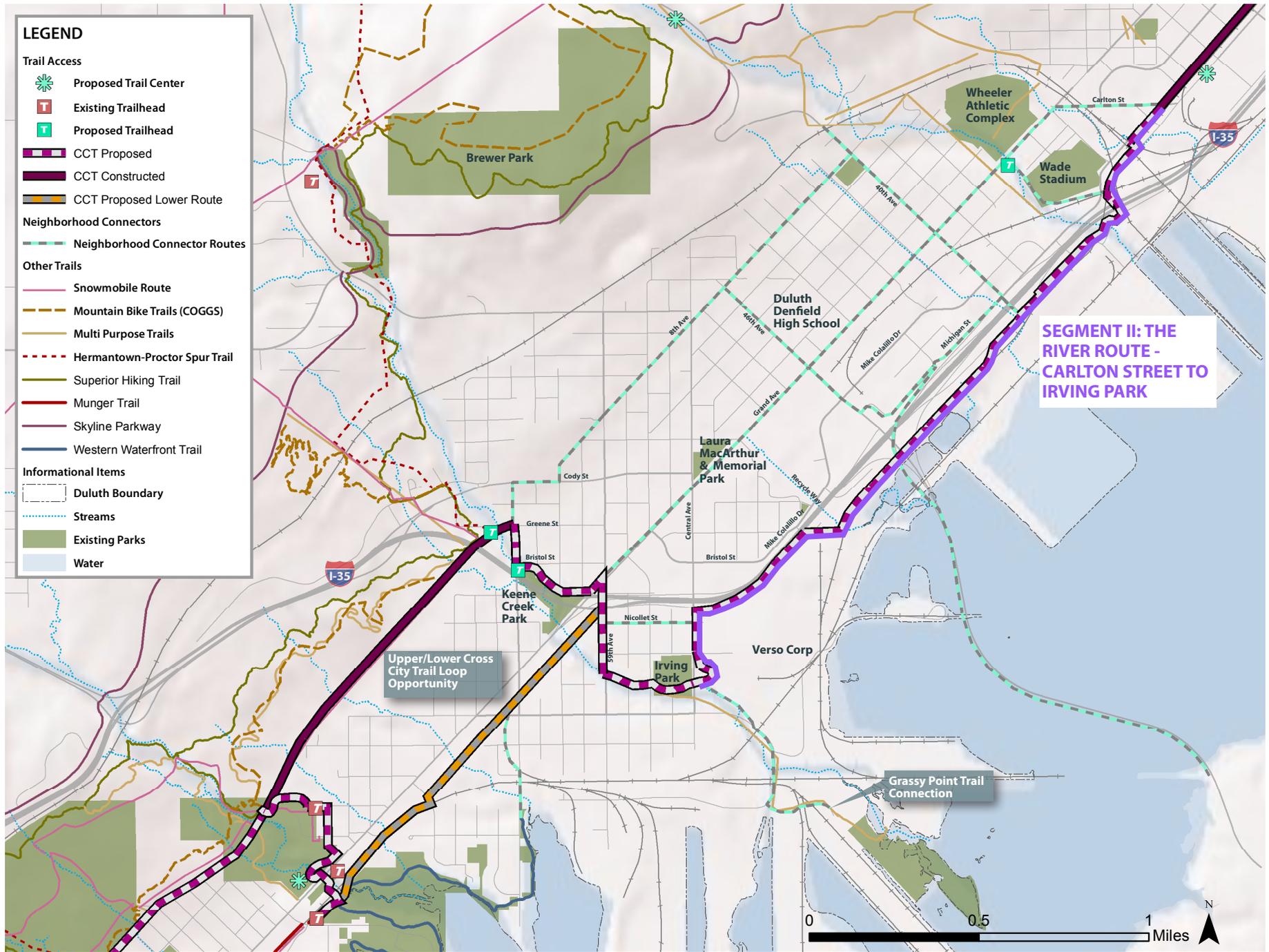


Figure 4.3: Cross City Trail - Segment II: The River Route - Carlton Street to Irving Park

Segment III: The Keene Creek Section - Irving Park to Greene Street

Segment III travels from Irving Park along Keene Creek, crosses Grand Avenue to Keene Creek Park at a location to-be-determined, then proceeds through Keene Creek Park to Greene Street. This is the least well-defined phase of the Cross City Trail.

Segment III travels from Irving Park on an old road bed close to Keene Creek. Compliance with shoreline setback requirements may be a challenge here.

Segment III must cross a high-volume, high-speed segment of Grand Avenue. A preliminary engineering study determined that separated grade crossings of Grand Avenue are not practicable at this location. The study recommended a signalized crossing at the 59th Avenue West intersection. The selection and design of this important crossing requires further study and public engagement. The exact location of the Grand Avenue crossing will be determined during the detail design phase.

Much of Segment III is located beneath I-35 bridges on MNDOT property held in association with the MNDOT-administered highway overhead. Selecting and constructing the alignment through this area will require intensive collaboration between the City of Duluth and MNDOT. The exact location of this section of the trail will also be determined during the detail design phase.

Segment III travels through Keene Creek Park which is itself scheduled for significant restoration. The alignment and construction of the CCT through the park must be coordinated with implementation of the park mini-master plan.

Improvements needed on this segment of trail may include wayfinding, signage, benches, trash receptacles, and trail access points.

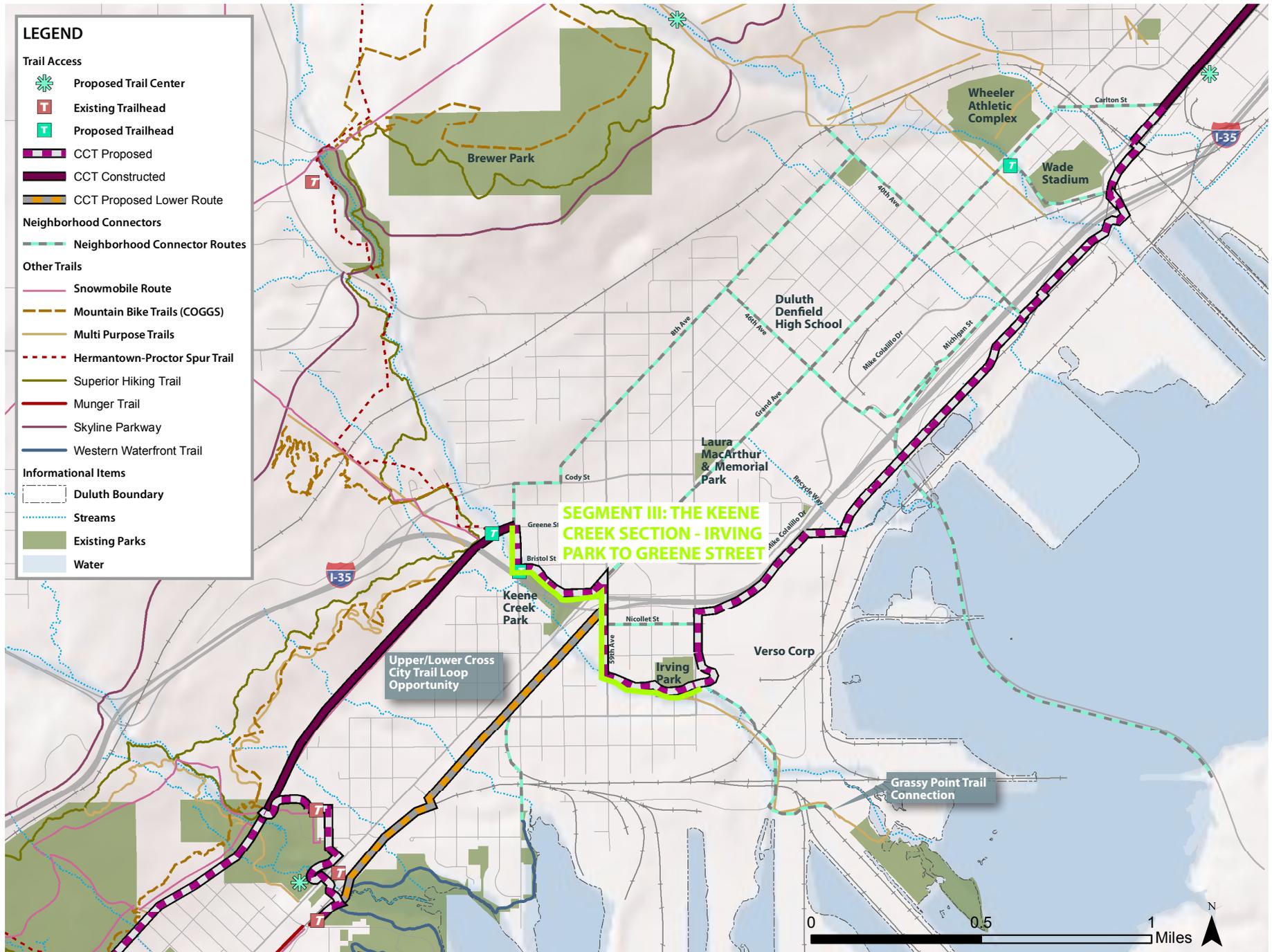


Figure 4.4: Cross City Trail - Segment III: The Keene Creek Section - Irving Park to Greene Street



The Western Waterfront Trail connects to the Cross City Trail at the Munger Trailhead on Pulaski Street.

Segment IV: Zoo Connection-Greene Street to the Zoo

Segment IV has been constructed. It proceeds on the abandoned Duluth, Winnipeg, and Pacific (DWP) rail bed through an undeveloped forested natural area crossing two streams along the way.

This area may be subject to trail user conflicts. There is frequent illegal ATV use of the trail that may damage the trail and endanger non-motorized users. Nearby snowmobile and mountain bike trails may further contribute to the potential for conflict. Proactive education, wayfinding, and, to the degree possible, enforcement will help prevent and alleviate conflicts.

The recreational experience on the Segment IV trail could be enhanced with trail amenities, wayfinding, and landscaping to add rest stops and visual interest.

Segment IVa: Zoo to Munger Trailhead

The trail drops down from the DWP railroad bed via a snowmobile trail along the boundary between the Lake Superior Zoo and the Fairmount neighborhood. The trail then ducks into Fairmont Park between Grand Avenue and the zoo perimeter fence and crosses a WPA bridge over Kingsbury Creek. From there, the trail proceeds along Kingsbury Creek via grade-separated crossings of Grand Avenue and a Burlington Northern (BN) railroad track before joining a paved segment of the Western Waterfront Trail and proceeding to the Munger Trailhead.

The foremost challenge in Segment IVa is the segment along Kingsbury Creek. MNDOT has already permitted and partially constructed the trail below the Grand Avenue bridge. The City is talking with BN about permission to run the trail through a culvert beneath their railroad tracks. In between the Grand Avenue bridge and the railroad, the trail travels through a small wetland and close to a segment of Kingsbury Creek that is slated for restoration by DNR. Design, permitting, and construction of the segment between the bridges must be carried out in close consultation with DNR and other state and federal regulatory agencies.

Segment IVa is an important crossroads between major trails—the Cross City Trail, the Munger Trail, and the Western Waterfront Trail—and major outdoor destinations—Fairmont Park, Lake Superior Zoo, and Indian Point Campground. In expectation of high volumes of visitors seeking to navigate from one destination to another, the City should invest in especially high quality wayfinding in this area. The portion of Segment IVa from the zoo along Kingsbury Creek to the Western Waterfront Trail is unusually rich in cultural and natural resources that warrant investment in high quality interpretive signage.

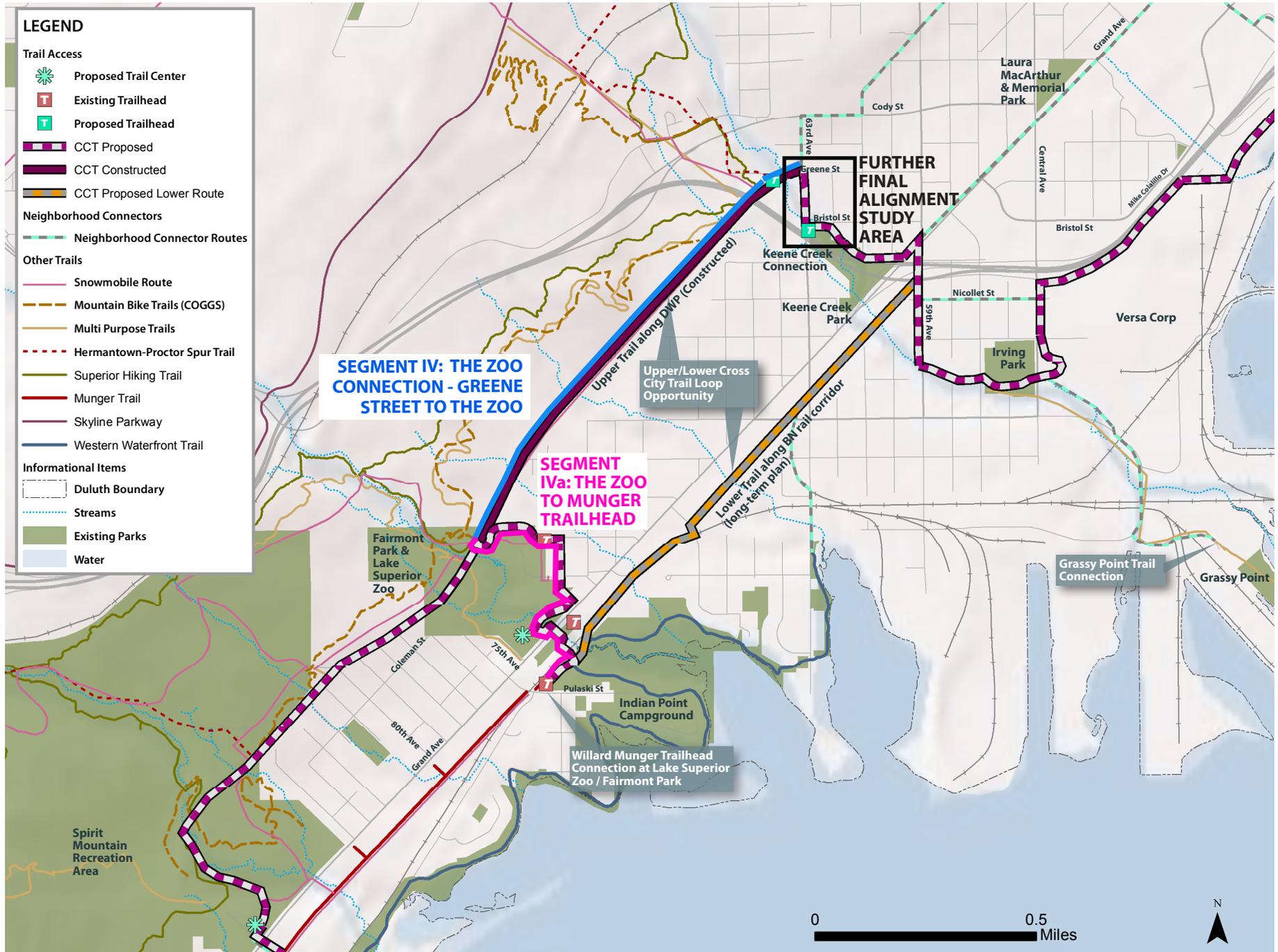


Figure 4.5: Cross City Trail - Segment IV: The Zoo Connection - Greene Street to the Zoo and Segment IVa: The Zoo to Munger Trailhead



Segment V will terminate at Spirit Mountain's Lower Chalet at Grand Avenue

Segment V: The Spirit Mountain Connection - Zoo to Spirit Mountain

Segment V, the Spirit Mountain Connection from the Zoo to the lower Spirit Mountain Chalet, begins above the Zoo in upper Fairmont Park and follows the DWP rail bed west above the Norton Park neighborhood. The rail bed abruptly ends at Knowlton Creek where the rail crossing washed out in the 2012 flood. To get around the washout, the trail jogs through the Spirit Mountain Recreation Area maintenance yard, crosses Knowlton Creek on an existing bridge, then follows an alpine ski trail down to the chalet.

The Lake Superior Zoo and Fairmont Park anchor the eastern end of Segment V. The area boasts a rich mixture of natural and cultural resources including mature red pine forests, historic bridges, the cascades of Kingsbury Creek, and the historic zoo and park themselves. This area will attract numerous visitors and residents who will want high quality interpretive signage, wayfinding, and amenities. Issues in this area include two historic bridges above the zoo that require restoration, and illegal ATV use that threatens to damage the trail and endanger non-motorized trail users.

Spirit Mountain anchors the western end of Segment V. Spirit offers a rich variety of adventure sports paired with quality food and beverage service. Challenges in this area include separating Cross City Trail users from Spirit Mountain maintenance operations, meeting accessibility standards from the east side of Knowlton Creek to the Spirit parking lot, and preventing

and mitigating conflicts between trail users. The volume and diversity of users in this area will likely require quality wayfinding signage.

This segment will be improved in phases. Phase I will reestablish the zoo-to-Spirit connection severed at Knowlton Creek by the 2012 flood. Phase II will repair bridges and resurface and regrade the trail. Subject to financing and a confirmatory design study, the aspirational Phase III would improve the trail to ADA standards by building an expensive new bridge and devising an ADA-compliant descent to the parking lot.

Segment Va - Spirit to Munger

Segment Va travels from the lower Spirit Chalet, around the Spirit parking lot, down the driveway, across Grand Avenue at a signalized intersection, to the Munger Trail. Alignment and design of this phase needs to be coordinated with plans for mixed use development below Spirit Mountain. Selection, design, and construction of a final alignment should be postponed until the shape of development below Spirit becomes clearer.

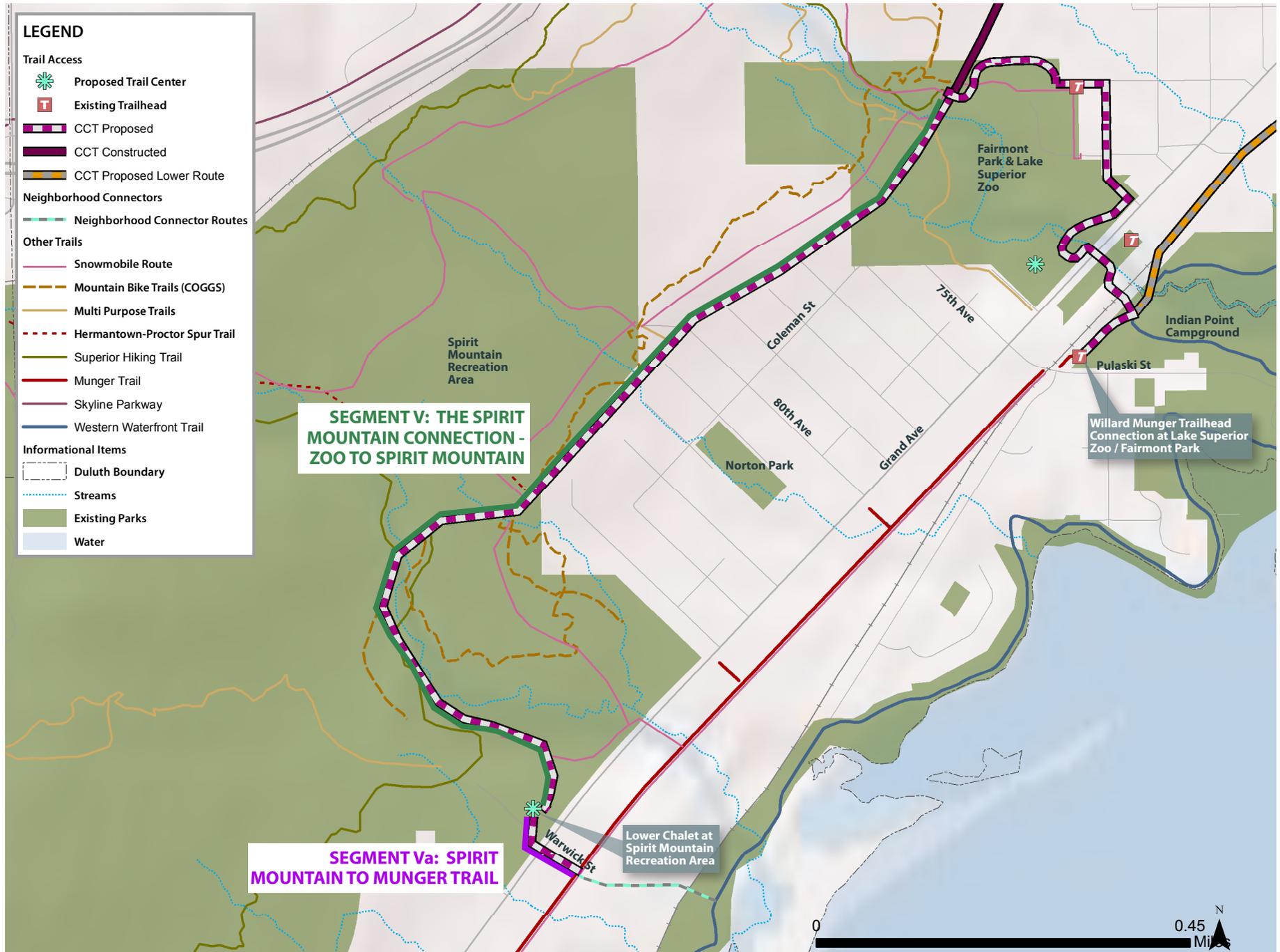


Figure 4.6: Cross City Trail - Segment V: Lake Superior Zoo/Fairmont Park to Spirit Mountain and Segment Va: Spirit Mountain to Munger Trail



Photo Credit: Friends of Western Duluth Parks & Trails

Segment VI: The Lower Route - Irving Park to Munger Trailhead

Segment VI establishes a more direct, lower connection from the Irving Park neighborhood to the Munger Trailhead by following an inactive BN spur line west from 59th Street to the existing Munger Trailhead opposite 72nd Avenue West and the Zoo. The feasibility of this phase needs to be further explored with analysis of ownership and rail and road crossings.

If feasible, Segment VI provides a convenient direct connection from Irving Park to the Munger Trail, the Western Waterfront Trail, Indian Point Campground, and the Lake Superior Zoo. The Western Port Area Neighborhood planning process is examining the same inactive BN right-of-way as a potentially suitable location for a new road that would route truck traffic away from the Irving Park neighborhood. There appears to be room for a road and trail in the right of way. Road planning and trail planning processes should be integrated. Final identification of this route will be determined during the detail design phase of trail planning.

Looking east from the BN Rail Corridor

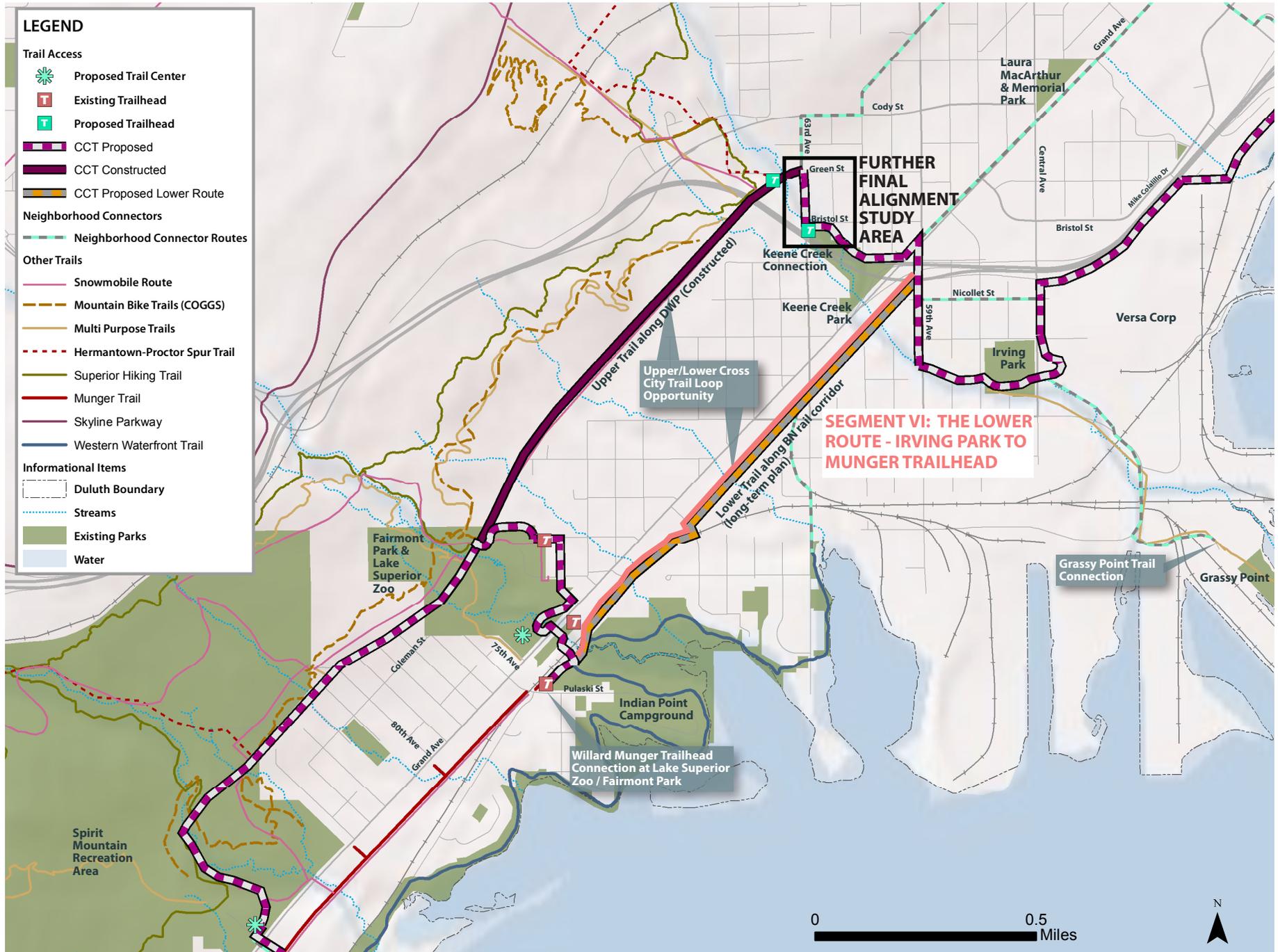


Figure 4.7: Cross City Trail - Segment VI: The Lower Route - Irving Park to Munger Trailhead

Typical Trail Development

TRAIL DESIGN AND DEVELOPMENT CONSTRUCTION METHODS

The Cross City Trail will be a 10-12' wide paved accessible trail. Typical trail users include runners, walkers, inline skaters, bicyclists.

ACCESSIBILITY

The City's vision is for the entire Cross City Trail to meet or exceed ADA Accessibility Guidelines and adhere to universal design principles. The City believes that five of the six trail segments will meet ADA standards immediately upon completion. The 1.3-mile segment six from the Zoo to Spirit presents greater challenges. Phase I and II of the Zoo-to-Spirit segment will not meet ADA guidelines. Subject to financing and a confirmatory design study, the aspirational Phase III would meet standards via an expensive bridge and an ADA descent to the parking lot.

TRAIL ACCESS AND AMENITIES

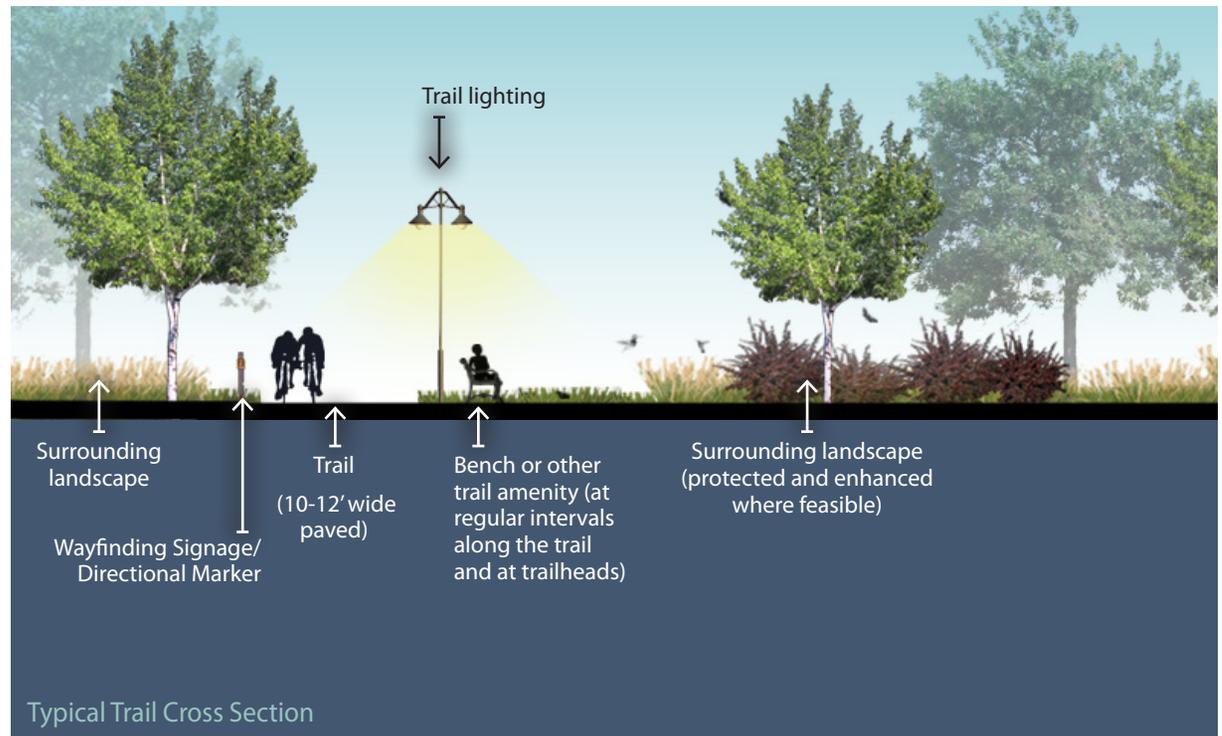
Trailheads will be provided at regular intervals, and where appropriate may share facilities with existing parks. Trailheads will include trail centers and local trailheads, in line with the Duluth Trail and Bikeway Plan.

According to that plan, 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. These centers are intended to support many different types of users and to connect multiple trails. Appropriate wayfinding materials help visitors from across the region navigate to trail centers from major roads and highways.

Recommended Trail Center locations:

- » Canal Park
- » Lake Superior Zoo/Fairmont Park
- » Clyde Iron/Heritage Sports Complex
- » Spirit Mountain – Lower Chalet

Local trailheads are recommended access points to designated trail systems that include a signage/information kiosk, parking, and the option of picnic tables, drinking water and bathrooms or screened portable toilets. They are located to serve local trail access needs.





Typical Trail Features and Amenities



Trail Programming Plan

The Cross City Trail will be a year-round, passive recreational amenity, allowing users to choose where to access the trail and how long to recreate, with loops that offer flexibility in trip length plus a variety of experiences. Potential programming of the trail and portions of the trail include the following:

- » Fun runs/walks
- » Distance races
- » Senior walking groups
- » Nature or interpretive walks
- » Athletic group practices and events

In order to fully realize the above programming options, in addition to the City of Duluth providing programming, the city will seek to partner with the following groups:

- » Duluth Public Schools - ISD 709
- » Duluth community clubs
- » Minnesota Department of Natural Resources
- » Healthy Duluth Area Coalition
- » St. Louis County Public Health
- » Spirit Mountain
- » COGGS (Cyclists of Gitchee Gumees Shores)
- » Northern Minnesota Track Club

NEIGHBORHOOD CONNECTORS

The plan outlines neighborhood connector routes to the trail through primarily on-road connections. Bike and pedestrian enhancements will be taken into consideration to the roadways outlined in Figure 4.1 as these streets and roads are slated for other improvements such as resurfacing or reconstruction.



05. IMPLEMENTATION, MANAGEMENT, + SUSTAINABILITY PLAN



Overview

Funding options, trail design, phasing, operations, and maintenance all need to be carefully considered in order to achieve the Cross City Trail's vision. At this point, portions of the trail have already been constructed, most of the alignment is owned by the City of Duluth, the vision has been long established, and the preferred route has been vetted and embraced by community members. This chapter will identify the next steps for trail implementation.

Phasing + Priorities

This master plan outlines flexible priorities capable of adapting to the political and economic climate in Duluth. As funding and political backing are available and ready, trail sections and amenities will be constructed and implemented. Of the long-term incomplete phases of the trail, Segment VI holds the highest priority for future investment for the City and for the community.

See Figure 5.1: Cross City Trail Phasing for further detail.

Land Acquisition + Easements

Before the entire trail can be realized, easements must be secured, or land along the route must be acquired. The trail corridor is envisioned as a 16-foot wide strip of land, which allows for a 10 to 12-foot wide multi-use trail with 2-foot buffer zones on either side. The trail corridor in Segments I, IV, and V are owned by the City of Duluth. Sections of Segments II and III are owned by the City, but there are several gaps in ownership. The map in

Figure 5.2 identifies the trail corridor sections that are not owned by the City of Duluth or another public agency.

Management + Operations

It is envisioned that management and operations will be performed by the City of Duluth Parks maintenance staff. Responsibilities and intensity of maintenance will vary by trail segment, and will depend on amount of use, type of use, and weather conditions.

MANAGEMENT

The Duluth Parks Commission and City Council establish policies and goals for their park systems and through an annual budget provide capital and operating funds for parks and trails.

GENERAL OPERATIONS

The City of Duluth Parks maintenance staff will be responsible for the operation of the 16 foot regional trail corridor. Where there are opportunities for operational partnerships, the City will enter a joint powers agreement with partner agencies. When possible, the cities will encourage and advocate for volunteers to assist with outdoor education programs, patrol, park clean-ups and special events. The City recognizes that as facilities expand, it may need to increase



Figure 5.1: Cross City Trail Phasing

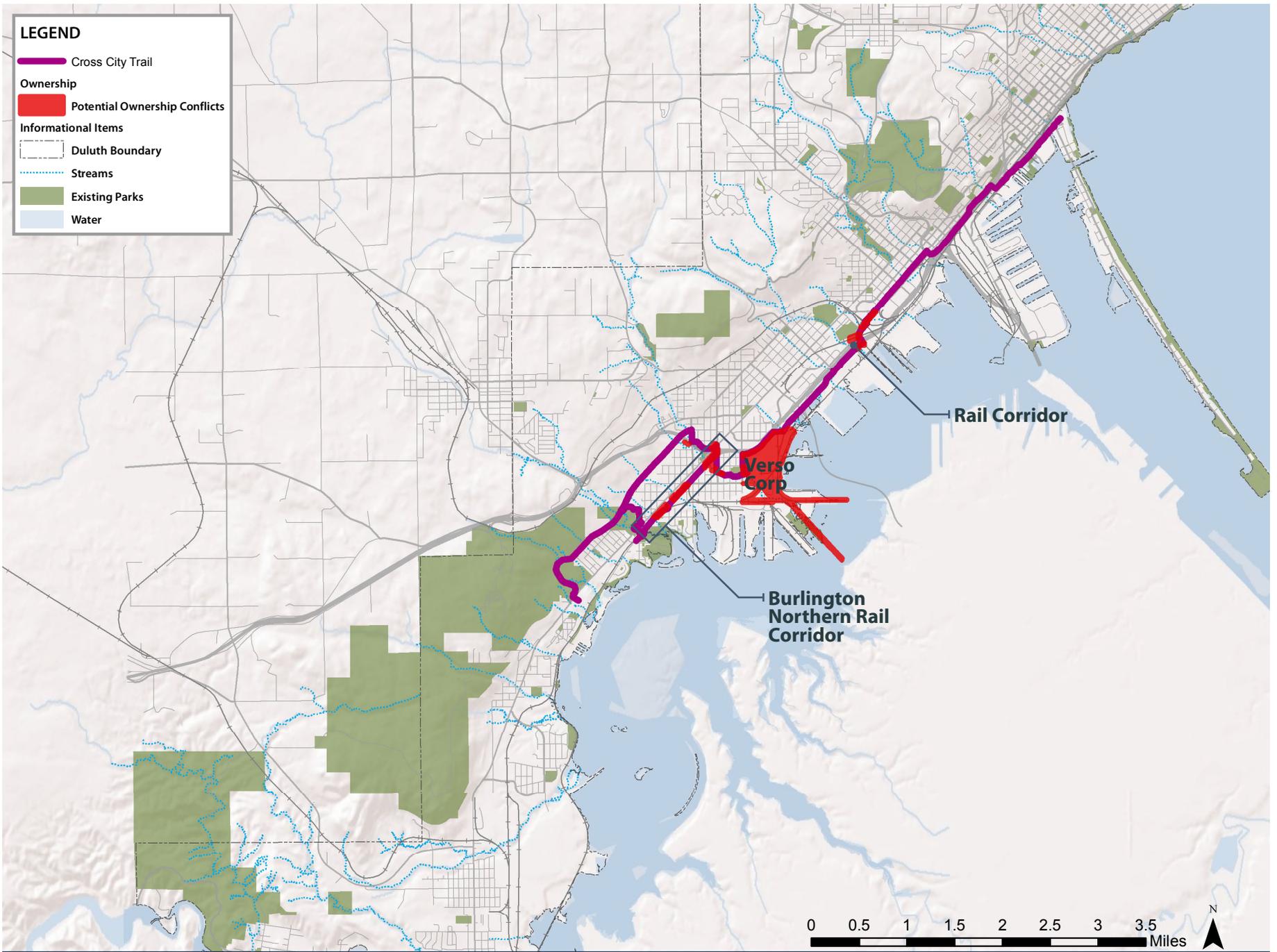


Figure 5.2: Potential Ownership Conflicts

staffing.

OPERATING HOURS

The regional trail hours will be open according to City of Duluth park ordinances or policies.

MAINTENANCE

Regular maintenance activities for the trail will include:

- » Mowing
- » Sweeping and blowing
- » Trash collection
- » Tree trimming
- » Winter trail clearing
- » Trail repair
- » Bridge repair
- » Sign maintenance
- » Trailhead facility repair and maintenance

Regular maintenance costs for the activities above are anticipated to be \$1,800 per mile. These costs will be adjusted annually to account for inflation.

PAVEMENT MANAGEMENT

Pavement deteriorates as it ages. Regular pavement maintenance can prolong the trail's lifespan in a cost effective manner.

ENFORCEMENT AND SECURITY

Visitors will be informed of park and trail rules and regulations through strategically located kiosks and signs that address specific information about hours, trails, permitted and prohibited activities, and directions. Local law enforcement and public safety agencies will be responsible for emergency and criminal complaints within the trail.

PUBLIC AWARENESS

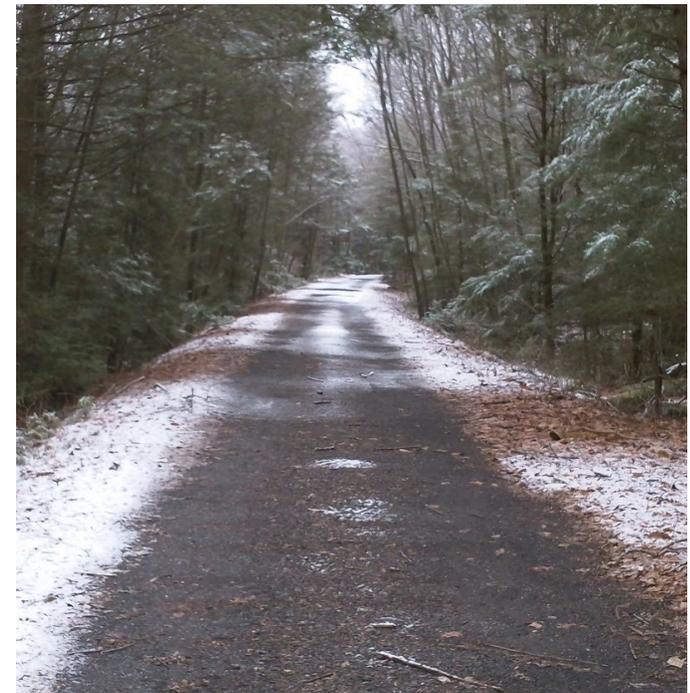
The City of Duluth will promote use of the trail through its website, wayfinding signage, direct mail, and public events and meetings. Partnerships with local institutions, such as schools and the Healthy Duluth Area Coalition, will encourage local residents to engage in healthy activities by using the trail.

CONFLICTS

The selection of the trail alignment primarily within predominantly City-owned land and within an industrial landscape reduces conflicts with residential land owners who might be sensitive to new trail development. The surrounding land uses of open space, park land, industrial businesses, and some residential land, are all compatible with a non-motorized recreational trail. Overall, there was broad support of the planned trail corridor by public meeting attendees. Minor conflicts will occasionally arise from private property owners' or neighboring residents' sensitivity to trail recreation or maintenance uses. The City of Duluth will work with individual landowners to resolve these issues case by case as the trail is developed and constructed.

PUBLIC SERVICES

No significant new public services will be needed to accommodate the trail. Proposed trailheads and neighborhood gateways are served by the existing road network. If utilities are not accessible at gateways and trailheads, options such as solar powered lighting, self-composting toilets or wells will be considered. Stormwater will be treated on site. Accommodations for later installation of continuous trail lighting will be considered at initial trail construction in certain locations.



ESTIMATED COSTS

ELEMENT	QTY	UNIT	COST PER UNIT	TOTALS (Short-Term)	TOTALS (Constructed)	TOTALS (Long-term)
Segment 1: The Lincoln Park Section - Lakewalk to Carlton Street - Already Constructed (15,709 LF)						
Phase 1 Bid Price (15,709 LF Constructed Trail)	1	LS	\$ 1,367,452.00		\$ 1,367,452.00	
Trees	1	LS	\$ 10,000.00	\$ 10,000.00		
Landscaping (Seed/sod, limited landscape features at key locations)	1	LS	\$ 10,000.00	\$ 10,000.00		
Wayfinding	1	LS	\$ 67,600.00	\$ 67,600.00		
Subtotal (Trees, Landscaping, Signage Only)				\$ 87,600.00		
Design & Engineering	1	EACH	15% of subtotal	\$ 13,140.00		
Total Segment 1				\$ 100,740.00	\$ 1,367,452.00	
Segment 2: The River Route - Carlton Street to Irving Park (SEH ESTIMATE 12/12/16 - 13,348 LF)						
Preliminary Estimate for Trail Construction (13,348 LF Trail)	1	LS	\$ 1,066,232.00	\$ 1,066,232.00		
Existing RR Bridge Modifications	1	LS	\$ 50,000.00	\$ 50,000.00		
Land Acquisition & Easements	1	LS	\$ 195,000.00	\$ 195,000.00		
Benches	10	EA	\$ 1,200.00	\$ 12,000.00		
Trees	1	LS	\$ 5,000.00	\$ 5,000.00		
Lighting	25	POLE	\$ 2,000.00	\$ 50,000.00		
Benches	10	EA	\$ 1,200.00	\$ 12,000.00		
Landscaping (Seed/sod, limited landscape features at key locations)	1	LS	\$ 10,000.00	\$ 10,000.00		
Wayfinding	1	LS	\$ 23,500.00	\$ 23,500.00		
Subtotal				\$ 1,423,732.00		
Design & Engineering	1	EACH	15% of subtotal	\$ 213,559.80		
Total Segment 2				\$ 1,637,291.80		
Segment 3: The Keene Creek Section - Irving Park to Greene Street (5,214 LF)						
Paved Trail	2770	LN FT	\$ 105.00		\$ 290,850.00	
On-Road Trail	2444	LN FT	\$ 15.00		\$ 36,660.00	
Benches	10	EACH	\$ 1,200.00		\$ 12,000.00	
Trees	1	LS	\$ 10,000.00		\$ 10,000.00	
Lighting	10	POLE	\$ 2,000.00		\$ 20,000.00	
Landscaping (Seed/sod, limited landscape features at key locations)	1	LS	\$ 15,000.00		\$ 15,000.00	
Wayfinding	1	LS	\$ 8,000.00		\$ 8,000.00	
Midblock Crossing Safety Improvements	2	EACH	\$ 10,000.00		\$ 20,000.00	
Arterial/Collector Road Crossing Safety Improvements	1	EACH	\$ 15,000.00		\$ 15,000.00	
Subtotal					\$ 427,510.00	
Design & Engineering	1	EACH	15% of subtotal		\$ 64,126.50	
Total Segment 3					\$ 491,636.50	

ESTIMATED COSTS CONTINUED

<u>ELEMENT</u>	<u>QTY</u>	<u>UNIT</u>	<u>COST PER UNIT</u>	<u>TOTALS (Short-Term)</u>	<u>TOTALS (Constructed)</u>	<u>TOTALS (Long-term)</u>
Segment 4: The Zoo Connection - Green Street to the Zoo - Already Constructed (6,014 LF)						
Paved Trail (incl. grading, restoration, 15% contingency of 6014 LF Constructed Trail)	1	LS	\$ 953,254.00		\$ 953,254.00	
Benches	5	EACH	\$ 1,200.00	\$ 6,000.00		
Wayfinding	1	LS	\$ 7,500.00	\$ 7,500.00		
Subtotal				\$ 13,500.00		
Design & Engineering	1	EACH	15% of subtotal	\$ 2,025.00		
Total Segment 4				\$ 15,525.00	\$ 953,254.00	
Segment 4A: The Zoo to Munger Trailhead (6,751 LF)						
Trail Construction (2923 LF Kingsbury Creek Trailhead to Willard Munger Trailhead Connection, includes 15% contingency)	1	LS	\$ 678,500.00	\$ 678,500.00		
Land Acquisition & Easements	1	LS	\$ 10,000.00	\$ 10,000.00		
Subtotal from SEH Estimate				\$ 688,500.00		
Paved Trail (Waseca Street Trailhead to Existing Segment 4)	3827	LN FT	\$ 105.00	\$ 401,835.00		
Benches	2	EACH	\$ 1,200.00	\$ 2,400.00		
Trees	1	LS	\$ 5,000.00	\$ 5,000.00		
Lighting	2	POLE	\$ 2,000.00	\$ 4,000.00		
Landscaping	1	LS	\$ 7,500.00	\$ 7,500.00		
Wayfinding	1	LS	\$ 16,000.00	\$ 16,000.00		
Subtotal				\$ 436,735.00		
Design & Engineering	1	EACH	15% of subtotal	\$ 65,510.25		
Total Segment 4A				\$ 1,190,745.25		

ESTIMATED COSTS CONTINUED

ELEMENT	QTY	UNIT	COST PER UNIT	TOTALS (Short-Term)	TOTALS (Constructed)	TOTALS (Long-term)
Segment 5: The Spirit Mountain Connection - The Zoo to Spirit Mountain (6,934 LF)						
Trail Construction (Interim Upgrades)	1	LS	\$ 108,000.00	\$ 108,000.00		
Trail Construction (Long-term - Includes Kingsbury Creek Bridge Improver	1	LS	\$ 1,683,000.00		\$ 1,683,000.00	
Benches	2	EACH	\$ 1,200.00		\$ 2,400.00	
Trees	1	LS	\$ 5,000.00		\$ 5,000.00	
Landscaping	1	LS	\$ 30,000.00		\$ 30,000.00	
Wayfinding	1	LS	\$ 34,000.00		\$ 34,000.00	
Subtotal				\$ 108,000.00	\$ 1,754,400.00	
Engineering & Design		EACH	15% of subtotal	\$ 16,200.00	\$ 263,160.00	
Total Segment 5				\$ 124,200.00	\$ 2,017,560.00	
Segment 5A: Spirit Mountain to Munger (538 LF)						
Paved Trail	538	LN FT	\$ 105.00		\$ 56,490.00	
Benches	1	EACH	\$ 1,200.00		\$ 1,201.00	
Trees	1	LS	\$ 2,000.00		\$ 2,000.00	
Landscaping (Seed/sod, limited landscape features at key locations	1	LS	\$ 5,000.00		\$ 5,000.00	
Wayfinding	1	LS	\$ 7,500.00		\$ 7,500.00	
Arterial/Collector Road Crossing Safety Improvements	1	EACH	\$ 15,000.00		\$ 15,000.00	
Subtotal					\$ 87,191.00	
Engineering & Design		EACH	15% of subtotal		\$ 13,078.65	
Total Segment 5A. Does not include costs of aspirational Phase III, such as \$800,000+ bridge over Knowlton Creek					\$ 100,269.65	
Segment 6: The Lower Route - Irving Park to Munger Trailhead (6,271 LF)						
Paved Trail	6271	LN FT	\$ 105.00		\$ 658,455.00	
Benches	11	EACH	\$ 1,200.00		\$ 13,200.00	
Trees	1	LS	\$ 25,000.00		\$ 25,000.00	
Lighting	32	POLE	\$ 2,000.00		\$ 64,000.00	
Landscaping (Seed/ sod, limited landscape features at key locations	1	LS	\$ 15,000.00		\$ 15,000.00	
Wayfinding	1	LS	\$ 13,000.00		\$ 13,000.00	
Midblock Crossing Safety Improvements	2	EACH	\$ 10,000.00		\$ 20,000.00	
Subtotal					\$ 788,655.00	
Engineering & Design	1	EACH	15% of subtotal		\$ 118,298.25	
Total Segment 6					\$ 906,953.25	
Constructed Total					\$ 2,320,706.00	
Short-Term Subtotal				\$ 3,068,502.05		
10% Contingency				\$ 306,850.21		
SHORT-TERM TOTAL				\$ 3,375,352.26		
Long-Term Total					\$ 3,516,419.40	
10% Contingency					\$ 351,641.94	
LONG-TERM TOTAL					\$ 3,868,061.34	
Project (Long-Term + Short-Term)					\$ 7,243,413.60	
Project Total (Long-Term + Short-Term + Constructed)					\$ 9,564,119.60	

Funding

Funding for initial capital costs and ongoing operations and maintenance costs is essential for a successful regional trail. Funding efforts will place an emphasis on seeking outside funding. Cost share roles will be determined by the strengths of each agency and circumstances of each project. In-kind contributions of land, easement, design, engineering, construction, and maintenance and operations are encouraged and will be outlined in joint powers agreements among agencies.

It is anticipated that most future capital projects will be well-positioned to secure regional, state and federal funds for recreation, transportation, water and habitat and that these sources will account for a majority of capital construction costs. Examples of funding sources include:

- » 1/2 and 1/2 Tax
- » Federal transportation grants (MAP 21)
- » Minnesota Department of Transportation
- » Minnesota Department of Natural Resources
- » Clean Water, Land and Legacy Amendment funds
- » Foundations and Non-profits
- » Statewide Health Improvement Program
- » Duluth-Superior Metropolitan Interstate Council

Funding for operating and maintaining the 16-foot regional trail easement and trailheads primarily will be the City's responsibility. Annual operating costs will be funded through Duluth's annual budget.

PARTNERSHIPS

In many cases the City of Duluth will seek to partner with the Duluth-Superior Metropolitan Interstate Council (MIC) and St. Louis County, among others, in order to secure funding for the trail.

Sustainability Plan

Best practices regarding sustainable trail development include the following considerations:

- » Construct the trail in a way that will hold up to frequent use and last long into the future with minimal repairs and maintenance. Consider slopes on and adjacent to the trail, erosion control methods, and signage and design that discourages trail users from veering off the trail.
- » Ensure sustainable materials and renewable energy use for trail construction. When constructing portions of the trail, prioritize use of local contractors, local building materials, and recycled materials.
- » Use sustainable and renewable energy sources for lighting and other amenities along the trail. Solar lighting, recyclable building materials for benches and trash receptacles, and reused or repurposed amenities are examples.
- » Encourage walk and bike access to the Cross City Trail by creating key neighborhood connections with local trails and sidewalks, transit links, and bike parking at trailheads.

Ecological Stewardship Plan

Portions of the Cross City Trail traverse biologically diverse areas such as Spirit Mountain Recreation Area, hillside creeks, and riparian habitats along the St. Louis River Estuary. These areas make significant contributions to the overall biodiversity and ecological assets of the St. Louis River Corridor and Cross City Trail and should be preserved and protected as wildlife habitat, Minnesota natural heritage areas, and native landscapes within the City of Duluth.

Trail development should aim to minimize impact to the trail corridor during construction of the trail, amenities, and trail access points. Trail construction and use will promote future stewardship by neighborhood and local environmental organizations.

The Cross City Trail has the potential to interact with a number of concurrent preservation, conservation and restoration projects and initiatives that are underway such as:

- » Restoration of the St. Louis River Estuary
- » Restoration of flood damaged DNR Trout Streams including:
 - *Keene Creek*
 - *Kingsbury Creek*
 - *Merritt Creek*
 - *Miller Creek*
- » Restoration of Kingsbury Bay at the mouth of Kingsbury Creek near Indian Point Park

Research Plan

The City of Duluth will participate in the Greater Minnesota Regional Parks and Trails Commission's research initiatives, such as visitation counts, use profiles, recreation demands, and trends surveys.





Photo Credit: Friends of Western Duluth Parks & Trails

APPENDIX: REFERENCED PLANS

The following is a list of plans and projects that were referenced during the planning process for this document.

St. Louis River Corridor Trails Plan

<http://www.duluthmn.gov/media/541631/duluthwesterntrailsmasterplan-for-parks-12-14.pdf>

St. Louis River Corridor Parks Mini-Master Plans

<http://www.duluthmn.gov/media/541765/final-river-corridor-neighborhood-parks-master-plans.pdf>

Western Waterfront Trail Restoration Planning

<http://www.duluthmn.gov/st-louis-river-corridor/western-waterfront-planning/>

Gate, Wayfinding, and Signage Final Design Plan

<http://www.duluthmn.gov/media/541988/gatewayfindingsignage-for-parks-commission-approval.pdf>

Duluth Traverse Trail

<http://www.duluthmn.gov/st-louis-river-corridor/duluth-traverse/>

Duluth, Minnesota Trail and Bikeway Plan

http://www.duluthmn.gov/media/116291/Duluth_Bike_Report_Edited_October_2011.pdf

