

Chapter 5: IMPLEMENTATION

This plan, with community input, is a long-term vision for bikeways within the Duluth-Superior Metropolitan Area. The ideas in this plan can be implemented in a number of ways. Funding is often the most significant barrier to building and maintaining bike facilities, meaning implementation depends on strong vision from this guiding document and ongoing support from community members and volunteer organizations. The implementation also involves working closely with the community, property owners, and others. Some bikeways will need to involve many partners in the implementation.

Additional considerations for bikeway implementation involve determining alignments, the surface type needed, construction and engineering needs, environmental impacts, liabilities, legal constraints, potential conflicts with other user groups, property ownership, maintenance, security, marketing, wayfinding, and more. Some additional guides and resources are listed in the appendix that may be able to assist in some of these areas.

Implementation will only be possible with citizen buy-in and will take a coordinated effort between roadway jurisdictions, private property owners, community groups, citizens and

impacted stakeholders. This should include involving the public early and often to build trust and reduce conflict in the process.

Common Barriers to Bicycling

Safety

Comfort

Hills

Inconvenient

No bike available

Addressing Issues

Common Barriers and Solutions

1. Safety - do not feel safe bicycling

- a. Separated bike facilities from motor vehicle traffic should be priority projects. This makes those on bikes safer from vehicles and also safer from motorist harassment.
- b. Take more steps to reduce motorist-bicyclist cultural confrontation such as implementing better road signage. Avoid “share the road” language and instead opt for “bikes may use full lane.”
- c. Motorist aggression towards individuals on bicycles must be addressed accordingly, and the right of those bicycling to use the streets must be respected by motorists and law enforcement,
- d. Evaluate the needs for lighting, emergency call boxes, and other crime prevention through environmental design techniques

2. Year-Round Reliability - due to weather and street condition

- a. Regular pavement maintenance of the streets with bicycle facilities
- b. Reliable snow removal and street sweeping to maintain accessibility year-round

3. Hills – terrain too steep, too many hills

- a. Direct bicyclists (through mapping, pavement markings, and signage) to uphill routes that are not too steep, provide bike climbing lanes, and have off-street paths zig-zag up the hill.
- b. Improve bike-to-transit connections (*first- and last-mile connections*)
- c. Support e-bikes, through incentive programs to financially purchase them, install e-bike charging infrastructure in public spaces, and educational campaigns.
- d. Allow for on-board transit bicycle options and improve existing bike racks on DTA buses to better accommodate e-bikes and fat tire bikes
- e. Install staircase bicycle ramps.

4. Inconvenient – distance and can’t carry other items

- a. Create direct routes for bicycle facilities.
- b. Highlight community resources that work to address the need for immediate, zero cost, hands on mechanical education that is accessible to all ages, incomes, and abilities, such as the Bike Cave at the Loaves & Fishes and the We Bike Series by Zeitgeist.
- c. Show what is possible – educate the public about commuter gear at events, demonstrate the latest gear for helping people carry items by

bike. This is especially important for e-bike education and outreach, since many interested users have not had the chance to try these.

5. Do not have a bike

- a. Expand all-season bike share, particularly in areas of low income, low car ownership, and at key destinations. E-bikes are a critical part of bike share in the area.
- b. Continue bike maintenance workshops and support, especially free pop-up bike shops.
- c. Connect equipment and resources to the people who do not have a bike by creating a program to utilize the numerous bicycles that are picked up by transit and the police.
- d. Promote bike swaps and resale events.

Key Bikeway Implementation Guidance

FHWA – [*Incorporating On-Road Bicycle Networks into Resurfacing Projects*](#)

FHWA – [*Small Town and Rural Multimodal Networks*](#)

MNDOT- [*Bicycle Facility Design Manual - Bicycling - MnDOT*](#)

NACTO – [*Urban Bikeway Design Guide*](#)

NACTO – [*Design for All Ages & Abilities –Contextual Guidance for High-Comfort Bicycle Facilities*](#)

General Recommendations

Provide direct connections to major trip generators (schools, shopping, jobs, etc.).

Include improvements to bikeway infrastructure in local development standards. Increase local access to schools, businesses and services by creating direct, separated connections between bikeway facilities and major entrance points into the destinations, and by including bikeways through parking lots.

Incorporate bikeway design best practices (separated bike lanes, creative place-making, public art opportunities, and green infrastructure) into street, transit and trail projects.

Identify corridors that are potential connections or bike network routes – any unused corridors that are potential connections or bike network routes. Assure that the jurisdictions have a process in place to consider and prioritize these when planning and constructing so we do not lose opportunities in the future.

Design for up and down the hill bicycling

- Provide wayfinding through mapping, signage and pavement markings on routes that have easier hill climbs.

- Add bike rails to public stairways, where streets or ramps do not exist and provide key connections between bikeways.
- Consider gondola or funicular infrastructure.

Install all bicycle facilities perpendicular to drainage grates and railroad crossings – Identify all locations where this is not the case and propose a timeline for addressing these areas.

Install high quality bicycle parking

Consider the users when deciding on parking by:

- Prioritizing bike parking facilities that locate racks near front doors, with natural surveillance and visibility. Do not place bike racks behind buildings in hidden corners (encourages theft, and feels unsafe).
- Prioritizing projects that include canopy, shelter, and adequate lighting for bike parking at schools and other spaces where large numbers of people leave bikes for longer periods of time.
- Providing bike parking at all government buildings used by the general public.
- Identifying hot spot areas where bicycles are frequently stolen or vandalized and devise

solutions to address this issue, including but not limited to:

- Installing bike racks that are more vandal resistant.
- Relocating bike racks to more visible areas with better natural surveillance.
- Providing options for secure bike parking options, including lockers, secure entry area.
- Using signage to help find bike rack locations.
- Utilizing movable/temporary bike racks for major events.

Provide bikeway transportation facility alternatives to trail corridors that are primarily used for recreation, while simultaneously encouraging trail bicyclists to use these corridors for transportation.

Provide detours for bike routes and infrastructure when construction disrupts safe passage. Provide clear signage. Detours shall provide the same level of safety as the route being disrupted. This is further explained in the MnDOT guiding document "[Accommodating People on Bicycles Through Work Zones](#)".

Try demonstration and pilot projects. Give people a taste of what the changes might be like. One-day road diets and pop-up protected bike lanes let people test the concept

before any large expenditures are made. Pilot projects need to be well thought-out, but they can be adjusted. Make adjustments based on actual data, not forecasts and fears of change.

Continue to research, develop and expand bike share options in the Duluth-Superior area.

Develop a functional classification system for bikeways.

Consider undertaking a study on traffic signal systems along the existing and proposed bikeway network to understand each signal's level of bicycle detection.

Ensure that existing apps and resources (Transit App, Google Maps, DTA App) have up-to-date information for users to find routes to everyday destinations.

Performance Measurement

This plan, while long range in vision, is meant to provide a method in which to track progress today as well as provide flexibility to learn through trial and error. The MIC and local jurisdictions and agencies are responsible for undertaking this performance measurement. A number of key indicators should be annually tracked including:

- **Level of Traffic Stress** – perform analysis on the bikeway system (while the City of Superior has done this, the City of Duluth has not). This grading system will provide jurisdictions an objective score on bikeway improvements.
- **Total bicycle network mileage**, analysis including road bike facilities and the mileage of all ages and abilities routes in the network. This includes tracking the condition of the bicycle network, such as through ADRC’s data for some trails.
- **Level of Use** – conduct an annual bike count in September (following the National Bike and Ped Documentation Project protocols) focusing on before and after changes with new and/or improved bikeway infrastructure. Additionally, use other key data sources like the permanent counters from Eco-Counter and other big data sources like Strava and Streetlight Data.
- **Students Level of Use** – count the number of bicycles parked at all schools each month.
- **Total percent of students** who have a high quality, all ages and abilities bikeway to school, based on census data.
- **Crash Rates** – serious and fatalities – *see also:* the MIC’s Safety Action Plan.
- **Sidewalk Riding** – track percent of people who bicycle on sidewalks.
- **Gender and Children Gap** – track the number, gender, and age of people who are bicycling.
- **Partner with larger employment centers** to see what level their employees are using bikes to commute and gather data from them.

Future Plan Updates

As is the case with all planning documents, this Plan will require future updates to remain useful and relevant. The current state of bikeway planning nationwide is rapidly evolving and U.S. cities are embarking on an age of experimentation with new bicycle facilities being deployed increasingly every year.

Cities are beginning to design and build new types of bikeways that were relatively unknown as little as five years ago. Trends for bike facilities point toward mixed-use adoption and shared-use with emerging micromobility devices. These devices are likely to necessitate greater mention in future updates.

Therefore, it is recommended that minor revisions and bikeway routing updates take place annually, and a major review takes place every 5 years, led by BPAC in consultation with the local jurisdictions. It is likely that over the coming years, new priorities or strategies will emerge, and new initiatives and programs will be desired.