# 소옹 <br> Active Transporation ACTION PLAN 

City of La Crescent, Minnesota

Growing from River to Ridge


## Acknowledgement

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## DEPARTMENT OF <br> TRANSPORTATION

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## Learn more:

https://www.dot.state.mn.us/ac tive-transportation-program/

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## Plan Purpose and Need, Executive Summary

## Contents

## 1. Introduction

Why an Active Transportation Action Plan - How Active Transportation Benefits La Crescent \& Minnesotans - Why Trails \& Active Transportation - Safe System Approach - Making Safety a Top Priority Over Speed - Active Transportation Principles - All Ages and Abilities

## 2. Plan Process

How the Plan Was Developed - Vision and Goals

## 3. Assessment of Existing Conditions

Building on Existing Plans and Efforts - Existing Conditions Summary - Existing Conditions Maps - Multi-Use Path Options: Challenges and Opportunities - Trail Options: Design Along Highway Corridor

## 4. Envisioning a Multimodal Corridor

What We Learned from the Community - Why Focus on Highway 16 Corridor - Highway 16 Today - From Vision to Starter Concept - Multi-Use Alignment Preferences and Considerations - Options: In-Town Routes - Hwy 16/MRT Vision Concept - Rural Section - Path Within Existing Pavement Width - Interim Option: Buffered Shoulder or Bike Lanes

## 5. Action Plan

Key Action Items for the Multi-Use Connection - Key Action Items for Active Transportation Connections - Future ReEnvisioning of the Highway
6. Active Transportation Toolbox

Active Transportation Planning \& Design - Trail and Bicycle Facility Design Guidance - Multi-Use Paths - Rural Paved Paths/Trails - Pacific Rim Trail, Tofino, BC - Rail-with-Trail - Buffered and Separated Bike Lanes - Rural Bike Lanes - RightSizing Streets - Roundabouts - Protected Intersections - Pedestrian Hybrid Beacons - Trail Amenities - Winter Maintenance - State and Federal Funding Opportunities for Active Transportation
7. Moving Forward

## Plan Purpose and Need



The need for a Root River Trail (RRT) connection between La Crescent (Wagon Wheel Trail (WWT) terminus) and the Cities of Hokah and Houston has been a major challenge to address over the past 30 years. The cities and region need to define a safe corridor between Walnut Street (WWT bridge terminus) and Miller's Corner (MN 16/26). The WWT bicycle and pedestrian bridge was completed over U.S. Highway 14/61 in the summer of 2022 into downtown La Crescent.

Connecting the region from the WWT to La Crosse, WI and to the Mississippi River Trail (MRT) / U.S. Bike Route 45 and the Root River Trail has been a long-term goal of the city and county to address transportation inequities of underserved populations. The La Crescent Bicycle and Pedestrian Plan Update (2017) identifies the connection from downtown La Crescent to Miller's Corner as a critical link but lacks an implementable corridor plan (p. 59). Houston County, Hokah, Houston and La Crescent have entered into a formal agreement to cooperate to complete the RRT trail corridor. The first RRT plan was approved 40 years ago in 1983.

## Executive Summary

The Active Transportation Action Plan is the result of a eight－month collaboration from October 2022 to May 2023．A diverse Local Planning Team came together to set direction，co－create strategy and lead a walking audit， bicycle audit and trail planning workshop．An online interactive map and survey was used to collect broader input．

The study corridor is along Highway 16，which is under the jurisdiction of MnDOT． Part of the corridor is in the City of La Crescent and part is within unincorporated Houston County．Therefore，implementation of this plan will rely upon a strong partnership between the City，County and MnDOT．The route is also adjacent to an active railroad line and the Upper Mississippi River National Fish and Wildlife Refuge．
The Action Plan serves as a living guide．It establishes clear，evidence－based and action－oriented priorities to guide future investments in developing a trail connection from the Wagon Wheel Trail Bridge in La Crescent to Miller＇s Corner （intersection of Highways 16 and 26），with a longer－range goal to connect to the Root River Trail．The preferred vision is to construct a multi－use sidepath to the east of Highway 16，with separation from both the highway and the parallel railroad．Due to the complexity of the project，an interim measure to paint buffered bike lanes along the highway＇s paved shoulders would provide a short－ term incremental improvement．

The Plan builds on existing plans，conversations with residents，lessons learned from other cities and careful observation to establish recommendations that can help La Crescent，Houston County and MnDOT move toward achieving this trail connection．



## Why an Active Transportation Action Plan

The City of La Crescent is working to be the hub where local, regional and state trails, including a national bike route-Mississippi River Trail-meet. A key goal is to connect to the Root River Trail, which currently terminates in the City of Houston. A vision for this connection has been recognized in numerous plans. La Crescent has made significant progress to achieve its vision for a biking and walking friendly community. The Wagon Wheel Trail connects to La Crosse, WI. The pedestrian and bicycle bridge (opened Fall 2022) provides trail users direct access to downtown La Crescent with a grade separated crossing of U.S. 14/61-MN Highway 16.

The next step: a multi-modal connection from the Wagon Wheel Trail and bridge terminus south to the intersection of Minnesota Highways 16 and 26, locally referred to as "Miller's Corner." Due to physical and jurisdictional constraints along the corridor, the vision of the trail in this segment has been murky. There are bluffs characteristic of the driftless region, constrained sections of highway right-of-way, an active Canadian Pacific Kansas City Railroad line, privately-owned properties and the U.S. Fish and Wildlife Service (Upper Mississippi Fish and Wildlife Refuge

However, the physical constraints of bluffs and wetlands are also what makes this a scenic and desirable route. This segment of Highway 16 is designated as the Great River Road National Scenic Byway/All American Highway, Historic Bluff Country National Scenic Byway and the Mississippi River Trail/U.S. Bicycle Route 45.

This Action Plan includes alignment options and offers incremental steps to continue to build momentum, awareness and support. This project will be a centerpiece for how bicycle and pedestrian facilities can advance city, regional and statewide active transportation network goals connecting residents and visitors alike to nature and neighboring towns.


Source: Root River Trail Extension Master Plan, 2011

## How Active Transportation Benefits La Crescent \& Minnesotans

Multi-use paths/trails and other active transportation facilities are valuable assets for communities. From large cities to small towns, communities see active transportation as a prime opportunity to benefit equitable mobility, environmental resiliency, economic vitality and community well-being. Multi-use paths offer separated routes that are inviting for people of all ages and abilities. They are often built along river valleys, active and abandoned railroad lines, rural highways, main streets and through parks and natural spaces. Additional facilities help connect to places we live and work for everyday transportation needs.
La Crescent is working to create family-friendly connections to the national and regional trails that showcase the beauty of the bluffs, valleys and wetlands.

| HEALTH | ACTIVE LIVING \& MODE SHFIT | ENVIRONMENTAL RESILIENCY | ECONOMIC VITALITY | COMMUNITY IDENTITY \& PRIDE |
| :---: | :---: | :---: | :---: | :---: |
| Provide recreational opportunities helping to increase physical activity and connections to nature, improving well-being. | Create a seamless, regional multi-modal transportation system, connecting people to the places they want to go in a low-stress environment. Trails give people a safe and enjoyable transportation choice, encouraging people to walk/bike more often. | Benefit the natural habitat through native plantings and bioretention to better manage stormwater and protect and preserve wetlands and animals. They can provide routes that support emergency evacuation. | Strengthen the local economy through trailbased tourism, connecting people to downtowns and providing a significant economic driver for many small communities. | Make the community stronger by being a source of community identity and pride. |

The envisioned corridor will expand the comfort and reach of the MRTI-one of two official U.S. Bicycle Routes in Minnesota-for families by providing a separated multi-use path along Highway 16 and/or through the adjacent wetlands.

Long-term, the corridor will expand the 42-mile Root River State Trailone of the longest paved trails in Minnesota-creating a continuous multi-use path from Houston (east end of Root River Trail) through Hokah to La Crescent. When completed, and paired with the HarmonyPreston State Trail, the route will be approximately 120 miles.
The benefits of active transportation infrastructure are many and include:

## Why Trails \& Active Transportation

## Health

Minnesota's multimodal transportation system maximizes the health of people, the environment, and our economy."
-Minnesota GO Vision Statement

Trails, paths and safe streets encourage physical activity as part of daily life.

Walking and biking is as effective as structured workouts for improving health. Only 52\% of Minnesotans meet daily physical activity recommendations.


Bike commuting at least 2 miles,
3 times per week is linked to:

46\% lower odds of heart disease or diabetes
31\% lower odds of obesity
28\% lower odds of high blood pressure
All of which lowers medical costs.
"Minnesota Walks," Minnesota Department of Transportation, n.d.
"Active Transportation: Benefitting health, safety and equity," American Public Health Association, n.d.
"Health Benefits of Bicycle Commuting," Minnesota Department of Transportation and University of Minnesota, n.d.

## Why Trails \& Active Transportation

## Economy

Active transportation stimulates local economies: job creation, tourism, and business development.


Economic impact of cycling in MN is \$780 Million annually.

Over 5,500 jobs tied to biking industry.

Assessing the economic impact and health effects of bicycling $\mathrm{MN}^{\prime \prime}$, University of Minnesota and Minnesota Department of Transportation, n.d.

## Environment

Less driving means cleaner air.


Minnesota must reduce transportation related greenhouse gas emissions by $80 \%$ and vehicle miles traveled by $20 \%$ by 2050 .

Active transportation networks help people shift from driving, reducing carbon emissions.

## Equity

Active transportation supports equitable mobility.


Owning one car costs roughly \$10,730 per year (AAA). Vehicle ownership should not be a requirement for getting around safely and efficiently.
$10 \%$ of U.S. households don't have access to a car; 56\% of no-car households are in rural communities.
"Complete Streets." Advancing Transportation Equity - Complete Streets - MnDOT.
Bellis, Rayla. "More than One Million Households without a Car in Rural America Need Better Transit." Smart Growth America.

## Safe System Approach

Minnesota Department of Transportation (MnDOT) follows the Safe System Approach to traffic safety, advocated by the Federal Highway Administration (FHWA), which aims to eliminate fatal and serious injuries for all road users, including people walking and bicycling.

Safe Systems Approach focuses roadway safety efforts on ways to effectively:

1. Design for the people in the system;
2. Manage vehicle speeds by design;
3. Employ proactive tools to manage risks across an entire roadway network, especially for the most vulnerable users; and
4. Foster integrated, collaborative and coordinated action.

## Street Design Influences Behavior

The design of streets and highways directly influences behavior. Most motorists drive to match the "design speed" of the road, using cues such as lane width, street texture, the distance between buildings, street trees, other edge features and sight-line distances rather than solely relying on the posted speed limit. In turn, streets should be designed to promote safety by taking a proactive design approach to ensure lower "target" speeds-the speed drivers should be going.

The design of intersections and crossings become very important, especially on higher speed roads. Roadway crossings must be designed to promote visibility and ensure safety of the most vulnerable users by slowing motorized traffic and encouraging trail users and motorists to see one another. This way, the physical design of the crossings reinforces the legal protections granted to people walking and biking.

## Safe System: When to Mix, When to Separate?



Chart adapted from Federal Highway Administration Bicycle Selection Guide. Note: Chart assumes operating speeds are similar to posted speeds. If they differ, operating speed should be used rather than posted speed

The greater the vehicle speed, the greater the physical separation needs to be between vehicle traffic and people walking, biking and rolling.

A shared street environment, where users are mixed, can be created for people walking, biking, rolling and driving when target speeds are at or below 20 mph .

Separate and protect people from traffic when vehicle speeds are above 20 mph .

## Making Safety a Top Priority Over Speed

## Why Speed Matters

The impact of motor vehicle travel speed on crashes that involve people walking and biking is well-documented. For example, a person walking has a 95 percent chance of surviving the crash if struck by a person driving at 20 mph . The chances of survival decrease by almost 50 percent when the person driving is traveling only 10 mph faster. Traffic crashes that kill and injure people are a serious transportation and public health concern. Many communities are joining the Vision Zero initiative, which works toward eliminating all traffic fatalities and serious injuries to ensure safe, healthy and equitable movement for all.

Lower speed streets also better support businesses by increasing visibility. At lower speeds, drivers can see more of their surroundings and have more time to react, yield and stop for people crossing, parking and to avoid potentially fatal crashes.


National Traffic Safocty Board (2017) Reducing Speeding-Related Crashes Involving Passenger Vehicles Available from: https//www.ntsb.gov/sofety/safety-studies/Documents/SS1701.pdi


Field of vision at 15 MPH


Field of vision at 30 to 40 MPH

## Active Transportation Principles

## To provide transportation choice and ensure active trips, routes must be:

Safe: Does the route minimize risk of injury and danger (both traffic and personal security)?

Comfort: Does the route appeal to a broad range of age and ability levels and are there user amenities (e.g., places to sit, protection from the weather)?

Coherent: How easy is it to understand where to go, how to navigate a crossing or an intersection? How connected is the network?

Direct: Does the route provide direct and convenient access to destinations?

Attractive: Is the route green, well-maintained, and celebrate local identity?

These Active Transportation Principles are founded in a Safe System approach. As we consider how to make our built environment more conducive to walking and biking, we apply the Active Transportation Principles. The significance of each principle may vary from route to route and from person to person. For example, people walking or biking to the grocery store often prioritize directness. Whereas people out for a recreational bike ride value attractiveness and comfort more than a direct route. Regardless of trip type, safety is paramount for all users, especially when ensuring children have safe routes to school and parks.

## All Ages and Abilities



## Who Will Active Transportation Facilities Serve?

La Crescent envisions a multi-use path along MN Highway 16 to better support people of all ages and abilities in safely and comfortably connecting to where they want to go while enjoying the natural environment.

Highway 16 creates a gap in local, regional and state active transportation networks due to high vehicular speeds and paved shoulders. Today, the road only caters to the "highly confident" bicyclist who will ride regardless of roadway conditions and bicycle facility. Highly confident riders represent the smallest category of people willing to bike.

## Interested but Concerned

To create a complete corridor and maximize the potential for more people to bike, it is important to design active transportation facilities with the "interested but concerned" bicyclist in mind.

MnDOT and national research continue to confirm just over half of the population are interested in bicycling more often but are concerned about having to share the road with motor vehicles. This group of "interested but concerned" people is who MnDOT typically considers when selecting a bicycle facility type (as noted in MnDOT Bicycle Facility Design Manual). Designing for this type of bicyclist will ensure a route and facility type that is lower stress and higher comfort to a wider audience, attracting more people of all ages and abilities to walk, bike and roll.


## How the Plan Was Developed

La Crescent Corridor Planning Team met with the MnDOT Planning Assistance Team over the course of the planning process to:

## INSIGHT

Process of discovery
OCTOBER-NOVEMBER 2022
Planning Team meetings (October 6 and November 3) to:

- Assess current policies, plans and existing built environment conditions
- Co-develop engagement strategy
- Develop and refine vision and goals Lead outreach for community mapping, walk and bike workshop


## IDEATE $\rightarrow$

Turning key insights into actions
NOVEMBER 2022 - JANUARY 2023
Community Engagement (November 3):

- Walking audit in town
- Bike audit along Hwy 16 from Wagon Wheel Trail Bridge to Miller's Corner
- Community mapping workshop with over 34 people to identify preferred route
Conduct broader public engagement and outreach with online survey316 responses, providing additional feedback

Curbside Coaching


## ITERATE $\rightarrow$

Putting the plan together

## FEBURARY-MAY 2023

Two Planning Team meetings (March 2 and April 26) to collaboratively:

- Assess and vet alignment options to confirm preferred alternative
- Review concepts and priorities
- Review and finalize Action Plan Take action, move Plan forward with final Planning Team Meeting on September 7, 2023

Curbside Coaching

## How the Plan Was Developed




- Photos (clockwise from top left): Community members mapped opportunities, challenges and discussed potential solutions; walking audit participants discuss in-town connections and potential improvements; Corridor Planning Team members gathered for a bike audit of the Highway 16 corridor.

The Corridor Planning Team met with the MnDOT Planning Assistance Team four times over the course of the planning process. Together, they established vision and goals, identified stakeholders, evaluated route options based on existing plans, built and natural environment existing conditions and community input, discussed facility types and concepts and set a path forward.

The Corridor Planning Team hosted community members at a
mapping workshop. They also conducted a walking audit in town and a bike audit along Highway 16 between the Wagon Wheel Trail Bridge and Miller's Corner.

An online survey drew a strong response with input from 316 community members, providing valuable feedback for the team to consider as they developed this Action Plan.

## How the Plan Was Developed

To develop this Plan, the Corridor Planning Team:


## Vision and Goals

The Corridor Planning Team completed a series of exercises during the first two committee meetings to identify a vision and goals for the Active Transportation Action Plan.

La Crescent is a family-friendly hub of national and regional trails that showcase the beauty of the bluffs, valleys and wetlands.


## - OUR GOALS

NATURE: Connect and educate residents and visitors with the natural beauty of the driftless region along the trail corridor.

INCLUSIVE: Appeal to people of all ages and abilities by creating a safe, comfortable and welcoming trail and street network.

TOURISM: Create a trail that connects destinations, attracts visitors and sparks economic development.

HEALTH: Improve community physical and mental wellbeing by providing accessible outdoor activity.


## Building on Existing Plans and Efforts

## First Priority is Safety

People have been historically left out of the design of Highway 16 through La Crescent. La Crescent is working to ensure people have a safe, comfortable route to enjoy the Mississippi River Trail and driftless region. Safety for all users is a top priority for MnDOT through its Complete Streets Policy and system plans. The Statewide Bicycle System Plan (SBSP) identifies four goals:

1) Safety and comfort: build and maintain safe and comfortable bicycling facilities for people of all ages and abilities
2) Local bicycle network connections: support regional and local bicycling needs
3) State bicycle routes: develop a connected network of state bicycle routes with partners
4) Ridership: increase ridership of people who already bicycle and people who don't


## EXISTING PLANS



MnDOT District 6 Bicycle Plan (2019)

A section of Highway 16 in La Crescent is identified in MnDOT District 6 Bicycle Plan as a Tier 1 priority route.

## MnDOT Bicycle Facility Guide

"MnDOT is committed to supporting safe and comfortable bicycling travel for people of all ages and abilities."
Through the SBSP development, MnDOT learned that most people prefer bicycling on low-stress facilities separated from motor vehicle traffic. The Bicycle Facility Guide provides guidance to create projects and a complete transportation system that are: usable, balanced, flexible and maintainable.

## Building on Existing Plans and Efforts

EXISTING PLANS, CONTINUED

## MN DNR "Bluffland State Trail"

Preliminary Trail Alignment (1997)
Preliminary engineering designs with trail alignment on the east side of Hwy 16 between the highway and railroad.

## Coulee Regional Bicycle Plan

La Crosse Area Planning Committee, Metropolitan Planning Organization, 2010 As a regional plan, it shows a vision for regional routes to provide connectivity across communities with local routes completing intown connections to "identify significant bicycling corridors and recommend bicycle treatments that accommodate all classes of bicyclists" and "encourage tourism and economic development."


ROOT RIVER STATE TRAIL EXTENSION - HOUSTON TO LA CRESCENT


# Root River State Trail Extension Houston to La Crescent Master Plan 

Minnesota Department of Natural Resources, December 2011
"From the west end of the Wagon Wheel Trail, the trail corridor would turn south on the east side of MN 16. Given physical constraints, the most viable route for the trail is to continue between the railroad and MN 16 through La Crescent and south to Miller's Corner, where Highways 16 and 26 diverge."

This location fulfills the criteria for the location of a trail as identified in this plan:

- Provide a scenic route that showcases the Blufflands landscape.
- Minimize trail user exposure to vehicular traffic.
- Minimize impact on wetlands and floodplain. Avoid negative impacts on rare and endangered species and avoid fragmentation or disturbance of significant native plant communities.
- Provide snowmobile and horseback riding access where they can be safely accommodated.

In 1997, MnDNR prepared a preliminary alignment of the "Bluffland State Trail" between Miller's Corner and La Crescent. The preliminary design positioned the trail between Highway 16 and the railroad.

## Building on Existing Plans and Efforts

EXISTING PLANS, CONTINUED



The Hwy $14 / 61$ and 3rd Street intersection is challenging for people walking and bicycling. Above are recommendations to improve the intersection for walking and bicycling

Bicycle and Pedestrian Plan Update identifies the connection from downtown La Crescent to Miller's Corner as a critical link but lacks an
implementable corridor plan (p. 59).

## Bicycle and Pedestrian Plan Update

City of La Crescent, 2017
This plan's vision is to create, "A vibrant community that encourages walking and bicycling for transportation and recreation."

The proposed network includes neighborhood bikeways (bike boulevards) through traffic calming, access management and crossing treatments and buffered bike lanes along Oak Street. The plan recommends installing buffers along the paved shoulders to make the Mississippi River Trail route (MN 16) more comfortable, while improving wayfinding signage and the intersection of Highway $14 / 61$ and S $3^{\text {rd }}$ Street.

## Building on Existing Plans and Efforts

## EXISTING PLANS, CONTINUED

## Safe Routes to School (SRTS) Plan

City of La Crescent \& Minnesota Department of Transportation, 2020

Relevant to this Active Transportation Action Plan, the SRTS Plan noted several issues along the Oak Street corridor, which could also serve as a connection between the Wagon Wheel Trail Bridge and the proposed trail along Highway 16 south of town.

South $3^{\text {rd }}$ Street and Oak Street - This crossing is a challenge for walking to school. Despite the Rectangular Rapid Flash Beacon (RRFB), marked crosswalk and adult crossing guard, students and families are still uncomfortable with crossing four lanes of traffic. Two curb extension crossings are planned to be installed.

Oak Street South of $3^{\text {rd }}$ Street - Motorists sometimes use Oak Street as a north/south alternative to Highway 16. To make sure this route remains pedestrian- and bicycle-friendly, traffic calming and diversion was recommended through tools like chicanes and curb extensions.

Oak Street Mid-Block Crossing - Near the Montessori and STEM school, a crosswalk is needed to alert drivers and provide a preferred location for students to cross from the school on the west to the sidewalk on the east side of Oak Street. Other recommendations include curb extensions, crosswalk signage and pavement markings.

South $14^{\text {th }}$ Street and S Oak Street - South $14^{\text {th }}$ Street has a painted bike lane, and this intersection is a logical connection between the Middle and High Schools along S $14^{\text {th }}$ Street and the Montessori and STEM schools on S Oak Street. This intersection is adjacent to Highway 16 with large turn radii, which creates higher speed right turns. A crosswalk has been added across S Oak Street. Recommendations include curb extensions.

Kistler Court - The plan also recommends a path to connect the mobile home park to South $14^{\text {th }}$ Street.


## Building on Existing Plans and Efforts

## EXISTING PLANS, CONTINUED

## Pedestrian and Bicycle Scoping Recommendation Report

Minnesota Department of Transportation, 2020
The state will be doing a mill and overlay along a portion of the highway in 2026; this report provides the following recommendations within the Trail Action Plan study area:

A - Provide a continuous, separated 6-feet-wide sidewalk along Chestnut and Sycamore Street. Consider a 10 -feet-wide shared use path to include bicycle facilities. If shared use path cannot be provided, consider an advisory shoulder between Chestnut and Main Street.

B - Provide a 10-feet-wide shared use path connection from the mobile home park at Kistler Drive to the local neighborhood sidewalk and bicycle network on Oak Street.

C - Provide an RRFB at $7^{\text {th }}$ Street to provide a crossing for people walking and bicycling to reach South Chestnut Street and for people using the Mississippi River Trail (MRT) route.

F - Provide a minimum 10-foot-wide shared use path separated from the roadway on the northeast and southeast corners of the intersection. Provide smaller turning radius and narrower lane width for the channelized right turn lanes. Provide crosswalk markings and stop bar across turn lanes; consider a raised crosswalk or RRFB. Provide a leading pedestrian interval on the signals. Consider a protected intersection.

H - Consider bike lanes and neighborhood bike boulevards, especially along South Oak Street as it provides a parallel route to Highway 16.


## Building on Existing Plans and Efforts

EXISTING PLANS, CONTINUED

## The Blufflands Plan

City of La Crescent, November 2017
This plan sets a vision to "establish an exceptional network of protected blufflands and recreational trails in and around the City of La Crescent. Our cooperative efforts will enhance the health of residents, visitors, natural eco-systems and our local economy."

This plan included a proposed trail connection through the blufflands at the south end of town and connecting to Highway 16. There are multiple private property owners including allotment lands owned by indigenous families who are ancestors of the HoChungra (Winnebago). The current use of the land is woodlands, farmland and open space with an elevation change of 430 feet. The proposed trail would be either paved or crushed stone maintained for summer use for people walking/running, wildlife viewing and bicycling.


## Existing Conditions Summary

A key focus of the November community walk- and bike-audit was to better assess and identify potential opportunities to address both in-town routes and a safe route along Highway 16 to close the gap between the Wagon Wheel Trail, residents of the mobile home park, and the future Root River Trail connection. These connections would enable more people of all ages and abilities to enjoy the benefits of active transportation, and support local livability and economic vitality.



COMPLEX INTERSECTION; LACK OF GATEWAY Hwy 16 and US 14/61 is a complex intersection with overly wide turning radii, long crossing distances due to multiple lanes and no bicycle facilities, which create an autodependent environment. This is a key intersection into La Crescent. It lacks a gateway or sense of welcome.


## Existing

## Conditions



IMPORTANT CONNECTION
S $1^{\text {st }}$ Street is an important route into downtown La Crescent for residents and a key connection to the Wagon Wheel Trail bridge. It is an overly wide neighborhood street and lacks marked bike lanes.


## Existing Conditions



CHALLENGING INTERSECTION
Highway 16 and Miller's Corner (Hwy 26) is a challenging intersection for people on bikes to navigate, especially when turning south on Mn 26, because they need to mix with vehicular traffic going $55+\mathrm{mph}$ and there is a curve at this junction.

 Multiple travel lanes, wide shoulders and long sight distances encourage motorists to travel faster than the posted speed limit
Railroad divides people from the National


## Path Options: Challenges and Opportunities

|  | West side of highway | East side of highway | Both sides of highway | Through wetland | Through blufflands |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Opportunities | - No crossing needed in town <br> - Creates connection for mobile home neighborhood | - Connects directly to Wagon Wheel Trail <br> - Provides elevated view of wetlands <br> - May be least impactful to private property owners | - Narrower travel lanes required, may slow traffic <br> - May reduce need for roadway modification | - Most comfortable and scenic <br> - Unique trail experience could be tourism attractor <br> - Connects people to nature <br> - Most preferred at mapping workshop | - Fewest/no dangerous roadway/railroad crossings <br> - Scenic <br> - Connects trail users closer to nature |
| Challenges | - Inside of curve at Miller's Corner could be most hazardous <br> - Private property owners may oppose potential acquisitions | - Narrowest space to fit trail <br> - Elevation difference between highway and railroad requires retaining walls <br> - Could be challenging due to railroad agreements <br> - Riders coming from the east would be able to "bypass" the downtown area. Signage may help encourage riders to connect to downtown. | - Not easily navigable by users (may get wrongway riders) <br> - May not be comfortable to all users <br> - One-way travel emphasizes bike traffic, rather than multi-use trail <br> - Occupies shoulder space typically reserved for vehicular emergency stops | - Most interagency coordination <br> - Private property owner <br> - Requires 2 new railroad crossings <br> - Wetland impacts require mitigation (and avoiding alreadymitigated wetland at SE Miller's Corner <br> - More trains expected in future <br> - Extensive boardwalk may be difficult to access in an emergency | - Hills may discourage less enthusiastic riders <br> - Indirect route <br> - Private property owners may have opposition to potential acquisitions <br> - ADA considerations are necessary but may cause the trail footprint to be bigger and increase chances for drainage and erosion issues |



## Envisioning a Multimodal Corridor

## What We Learned From the Community

## COMMUNITY SURVEY

An online survey was open from December 7, 2022 to January 23, 2023 to gain additional insight from residents and visitors on how people walk and bike.

- 68\% say they would use a path to Miller's Corner and continue along the highway to Hokah!
- $53 \%$ of respondents walk at least weekly
- $48 \%$ of respondents bike at least monthly
- 76\% reported that Root River Trail trips are with another person (for recreational and social purposes)

316 responses
67\% were La Crescent residents
52\% Female, 43\% Male
65\% age 35-64, 9\% under 35

What are you most excited about?


## What We Learned From the Community

The community-wide survey asked participates to rank the importance of the active transportation principles to inform path alignment.

Safety was the most important. Considering the challenges of high traffic speed and the traffic volume along Highway 16, ensuring a safe space for people walking and biking is critical.

Comfort was ranked as the second most important to ensure a route will maximize separation and broaden usage of the trail to people of all ages and abilities.

Coherence fell in the middle. Considering the location of the corridor along the highway, the only decision-making points will be getting in and out of town and at Miller's Corner.

Attractiveness was close behind coherence. The beauty of the corridor is largely impacted by the setting in the driftless region.

Finally, directness ranked last. The linear nature of the corridor and the primary purpose of the trail for recreational use is likely why this characteristic was less important to respondents.

Which qualities are most important for the trail?
Rank the qualities shown below from 1 (most important) to 5 (least important).


## What We Learned From the Community

## COMMUNITY MAPPING WORKSHOP




## PROCESS

- Attendees worked in groups to identify origins and destinations such as schools and parks.
- Next, they identified preferred routes and challenges such as major street crossings, steep topography and the active rail line.
- Using walking and biking infrastructure tools, they identified how challenges might be overcome.


## KEY FINDINGS

- Strong support for creating a path connection to Miller's Corner and beyond.
- The idea of a path through the wetlands was most preferred because of the opportunities for a scenic and quiet route, but attendees recognized the challenges of approval for construction in the sensitive environment along with crossing the railroad multiple times, including a new rail crossing.
- The next best option for the path was along the highway to provide a scenic route while connecting most people to key destinations within town.


## Why Focus on Highway 16 Corridor

As a result of the community workshop and existing conditions assessment, the Corridor Planning Team identified MN Highway 16, a state trunk highway, as being instrumental to supporting a future multi-use path alignment.

Taking a Complete Street and multi-modal approach to the future design of MN Highway 16 will:

- Provide transportation equity, connecting residents of two mobile home neighborhood located along Highway 16, and south of Downtown La Crescent, to schools and town
- Allow active transportation users to enjoy the beauty and unique characteristics that make Highway 16 a National Scenic Byway
- Ensure people of all ages and abilities can safely and comfortably enjoy a U.S., state and regionally designated bicycle route -Mississippi River Trail
- Close the gap in the Root River Trail extension, helping spur bicycle tourism

The need to address in-town routes and the Highway 16 corridor to better support active transportation users has been identified in numerous plans including:
> MN DNR Preliminary Trail Alignment for the "Bluffland State Trail" along Highway 16 (1997)
> Coulee Regional Bicycle Plan (2010)
> Root River State Trail Extension - Houston to La Crescent Master Plan (2011)
> City of La Crescent Bicycle \& Pedestrian Plan Update (2017)
> MnDOT District 6 Bicycle Plan (2019)
> La Crescent Safe Routes to School Master Plan (2020)
> MnDOT Pedestrian \& Bicycle Scoping Recommendation Report (2020)

## Why Focus on Highway 16 Corridor

## Who Will the Multi-use Path Serve?

La Crescent envisions a path that safely and comfortably connects people of all ages and abilities to where they want to go while enjoying the natural environment.

To maximize the potential for more people to bicycle, walk, roll and create a complete corridor that will bring residents, commuters, through bicyclists and recreational riders to La Crescent, it is important to design active transportation facilities to support safe and comfortable (separated, lower stress) travel for people of all ages and abilities along Highway 16.

MnDOT has a suite of policies, plans and guidance to support this shift in transportation funding, planning and design, including:

- Complete Streets Policy and Handbook
- MN GO Vision for Transportation
- Statewide and District Bicycle Systems Plans
- Bicycle Facility Design Manual

The following pages/slides outline starter concepts towards a multimodal corridor.

MnDOT is committed to improving the safety and comfort of local bicycle facilities by investing in infrastructure along or across state trunk highways - even if not part of a designated state bicycle route or a district bicycle plan.

[^0]
## Highway 16 Today

## FOCUS AREA | CORRIDOR AT A GLANCE

| HWY 16 between US 14/61 \& HWY 26/Miller's Corner | Street/County Rd 6 |
| :---: | :---: |
| Corridor Length | ~2.5 miles |
| Annual Average Daily <br> Traffic (AADT) (2021) | 10,090 vehicles per day between Miller's Corner and S $14^{\text {th }}$ Street; <br> 13,069 vehicles per day between S $14^{\text {th }}$ Street and south side of US 14 intersection; 16,839 vehicles per day north of US 14 intersection |
| Right-of-Way Width | Varies from $\sim 55$ feet to 100+ feet |
| Posted Speed | 55 miles per hour (mph) between Miller's Corner and Pine Creek bridge; <br> 40 mph within city limits between Pine Creek bridge and US 14 intersection |
| Active Transportation User Facility Type | Paved shoulders |
| Route Designation | National Scenic Byway, State Scenic Byway, Mississippi River Trail/U.S. Bicycle Route 45 |



Source: Right of Way Mapping and Monitoring (arcgis.com)

## From Vision to Starter Concept

To envision the multi-use path concept, the Corridor Planning Team separated the corridor into two main segments based upon their existing characteristics:

1. In-town Route(s) - This segment would connect between the Wagon Wheel Trail Bridge and South $14^{\text {th }}$ Street, a distance of approximately 0.7 miles. Highway 16 through this section is a four-lane divided highway. There are multiple route options for this connection including through town along South Oak Street as an on-street bikeway, and a combination of trail and on-street bikeways on the east side of the highway. If the four-lane cross section were to be re-envisioned as a two-lane cross section, a trail or other biking and walking facilities could be added along the entire corridor.
2. Rural Highway 16 Segment - This segment connects from South $14^{\text {th }}$ Street to Miller's Corner, a distance of approximately 1.75 miles. The rural 2-lane highway cross section begins near Kistler Drive (just south of South $14^{\text {th }}$ Street) and continues south. To evaluate the trail options, the Corridor Planning Team considered routes through the wetlands, along the east and west sides of the highway, and even an alternative through the blufflands. Due to the complexities of this segment, the Corridor Planning Team's efforts were focused on vetting these trail alignment options, concluding that further conversation and
 feasibility with MnDOT and the railroad are needed.

## Trail Alignment Preferences and Considerations

As described in the vision, the multi-use path should be family-friendly and showcase the natural beauty of the corridor.

A popular option to achieve this vision south of $S 14^{\text {th }}$ Street is to construct a boardwalk through the wetlands immediately east of the highway and railroad. The challenges with this option may result in it being unattainable due to:

1) Crossing the active rail line twice. Per the Rails to Trails Conservancy, "New at-grade trail-rail crossings... should only be proposed where there is no other reasonable alternative." Railroads often do not allow new crossings.
2) Securing approval for the boardwalk though the Fish and Wildlife Refuge owned by the U.S. Fish and Wildlife Service (USFWS), including an amendment to their Park Master Plan. Also, some of the wetland near Miller's Corner is a wetland mitigation bank which cannot be altered and must be protected.
3) Acquiring private land north of the USFWS Refuge to complete the connection into town.
4) Need for an improved highway crossing at $\mathrm{S} 14^{\text {th }}$ Street.


A second alignment option is to construct the trail along the east side of Highway 16, between the highway and railroad, while maximizing separation from both the road and the railroad to the extent possible. Considering that this route is also the Mississippi River Trail, a state and national bike route, biking and walking infrastructure improvements would be supported by those designations. This alignment also faces challenges, with suggested solutions, as noted below:

1) Lack of sufficient highway right-of-way along an approximately 0.3 -mile and an approximately 0.5 -mile segment in which the highway shoulder is constructed on an easement from the railroad.

- Possible solution - Trail would be physically separated where possible. In constrained segments, the trail could be along the side of the highway, preferably with a vertical barrier between the motorized traffic and the trail.

2) Changes in topography

- Possible solution - Retaining walls and barrier rails may be necessary in some segments or shifting the trail closer to the existing roadway with a vertical separation.

3) Need for an improved highway crossing at $\mathrm{S} 14^{\text {th }}$ Street

- Possible solution - Preferably, some intersections could be reconfigured to roundabouts to facilitate both vehicular traffic and safer trail crossings. Alternative, a Pedestrian Hybrid Beacon could be added at the intersection with South $14^{\text {th }}$ Street.

In coordination with MnDOT, this alignment provides an option with fewer hurdles than going through the wetlands, yet it would still be family-friendly and scenic. In addition, the trail along the highway could increase safety for all users and enhance the attractiveness of the state's highway and city's gateway corridor into town.

For all options, the intersection of Highways 16 and 26 could be converted to a roundabout or a pedestrian hybrid beacon with a pedestrian refuge to facilitate crossing the highway(s).

Hwy 16/MRT
Vision Concept
$\qquad$ Existing Bikeways Possible Trail Corridor K Existing RR Crossing Proposed Routes

- Bikeway
- Trail


## Rural Section

(Between S 14 ${ }^{\text {th }}$ Street and Miller's Corner)

## Existing Highway Cross Section

- Existing travel lanes are 12 -feetwide
- Right-of-way width varies
- Paved shoulder width varies
- Some sections of highway shoulder are located on an easement on railroad right-of-way



## Path Within

## Existing Pavement Width

## Constrained Section 1

- Narrow west shoulder, shift and narrow lanes to 11 feet wide



## Interim Option: Buffered Shoulder or Bike Lanes

The Corridor Planning Team evaluated the facility option of buffered or separated bike lanes on both sides of the highway. While the Team felt that this concept fell short of fulfilling the vision of a "family-friendly" trail, they acknowledged that this treatment option may provide an incremental improvement since today people bike along the shoulder and could help to build momentum for a trail facility in the future.
Since buffered bike lanes could be implemented by paint and signage alone, this would be the lowest cost facility and could be installed in the near-term without construction or lane shifting.

Interim Option: Buffered Bike Lanes or Buffered Bikeable Shoulder

- Mark as bike lanes with pavement markings (pedestrians and other active transportation users still can use)
- Paint buffers (ideally at least 3 -ft) to provide visual separation between active transportation users and motorists


## Optional Enhancements

- Narrow lanes to allocate more space to paved shoulders (as shown)
- Colorize bikeable shoulder with paint (e.g green or coral) to provide more visual separation
- Provide physical separation with a vertical element in the buffer, such as flexible posts, with gaps for emergency stopping for vehicles
- If providing a vertical element, may need a 4 -feetwide buffer space to allow for shy distance and narrow bike lane to 6 feet wide
"The decision to modify the bikeway design should consider allowable flexibility and tradeoffs. If the preferred facility type is not feasible, the next best facility should be considered. Only after balancing roadway cross-sectional elements within the right-of-way based on context and after exhausting a variety of design configurations should designers consider implementing the next best bicycle facility type." FHwa Bikeway Selection Guide




## Key Action Items for the Multimodal Connection

The Corridor Planning Team and public engagement process identified the following projects as priorities to fulfill the vision.

| Priority | Design Considerations/Strategies | Next Steps | Partners |
| :---: | :---: | :---: | :---: |
| 1. THE BIG PICTURE <br> Connect La Crescent to the Root River Trail to expand recreational opportunities and attract tourism. | - Focus on creating a safe multimodal connection from La Crescent to Miller's Corner, then through Hokah and on to Houston. <br> - Plan a route that shows off the unique natural beauty of the driftless area. <br> - Due to the complexity of fulfilling the vision, consider interim approaches for incremental improvement to biking and walking. | - Incremental Infrastructure Step: Paint a 2- to 4-foot-wide buffer along the paved shoulders of MN Hwy 16. Add bike lane pavement markings and signage. <br> - Conduct bicycle and pedestrian counts both before and after the buffers are painted to document any change in use. <br> - Survey bicyclists and pedestrians to get feedback on the incremental improvements. <br> - Conduct a Feasibility Study: Work with MnDOT District 6 to determine right-of-way needs, alternatives to acquiring right-of-way in constrained sections and cost opinions. <br> - Use the trail alignment from MnDNR's 1997 preliminary design as starting point. <br> - Use the preferred and constrained sample sections in this Action Plan for guidance. <br> - Meet with representation from the railroad to discuss right-of-way impacts. <br> - Seek Funding: After completion of the feasibility study, apply for grant funding to construct the preferred vision of a trail along the east side of the highway. <br> - Use the bicycle and pedestrian counts and user feedback to support the application. <br> - Continue Root River Trail Extension: Actively participate in Citizen Exploratory Committee meetings to plan larger connection through Hokah to Houston and promote ongoing collaboration. | - City of La Crescent <br> - Houston County <br> - MnDOT <br> - MnDNR <br> - Canadian Pacific Kansas City Railroad <br> - Citizen Exploratory Committee |
| 2. MILLER'S CORNER <br> Improve traffic safety at Miller's Corner (Hwys 16 and 26), while also providing pedestrian and bicycle facilities. | - Evaluate potential to install a roundabout with marked and signed crosswalks. | - Incremental Infrastructure Step: Use green paint to mark dashed bike lanes through the intersection. Add bike warning signs to alert motorists to the presence of bicyclists in the area. <br> - Conduct a Study: Apply a roundabout-first approach to: <br> - Evaluate safety risk factors of intersection for all modes and improvement provided by a roundabout as a countermeasure <br> - Identify right-of-way needs for a roundabout <br> - Provide cost opinion for roundabout | - City of La Crescent <br> - Houston County <br> - MnDOT <br> - MnDNR |

## Key Action Items for Active Transportation Connections

## Priority

Design Considerations/Strategies
Next Steps

- Improve the intersection of $S 3^{\text {rd }}$ Street and Highways 16/14/61 for people using the regional trail network.


## 4. HIGHWAY CROSSINGS

Ensure that people walking and biking along the Mississippi River Trail can cross Highway 16 safely.

## 5. IN-TOWN ROUTES

Improve key routes through town for biking and walking.

- Provide dedicated time and space for people walking and biking to cross the highway.
- Shorten the distance of bicycle and pedestrian crossings to reduce the time people are exposed to motorized traffic while walking or biking.
- Develop bike- and walk-friendly routes on both the east and west sides of Highway 16 between the Wagon Wheel Trail and south end of town.
- Connect to parks, schools and downtown.

Construct a bicycle and pedestrian crossing at S $14^{\text {th }}$ Street to create a connection between the future trail on the east side of the highway with the bike boulevard along S Oak Street that terminates at S $14^{\text {th }}$ Street.

- For both crossing locations, evaluate the potential for a roundabout that can slow traffic and serve as a gateway announcing a change in the character of the highway. A single-lane roundabout is preferred.
- City of La Crescent
- For the S $3^{\text {rd }}$ Crossing location, consider a protected intersection as an alternative to the roundabout. This would be consistent with the 2017 Bicycle and Pedestrian Plan Update and MnDOT's 2020 Pedestrian and Bicycle Scoping Recommendation Report.
- For the $\mathrm{S} 14^{\text {th }}$ Street crossing location, consider a pedestrian hybrid beacon as an alternative to the roundabout.
- On the west side of Highway 16, use Oak Street as a bike boulevard. Follow the recommendations of the SRTS Plan and MnDOT's 2020 Pedestrian and Bicycle Scoping Recommendation Report.
- On the east side of Highway 16, construct a sidepath trail consistent with the preferred vision.
- City of La Crescent
- Fill sidewalk gaps to ice arena.
- Consider four to three lane conversion of S $3^{\text {rd }}$ Street.


## 6. CONNECT

## NEIGHBORHOODS*

Enable residents of the mobile home neighborhood to bike or walk to the rest of the city.

[^1] and S $14^{\text {th }}$ Street will become even more critical with a trail on the east side of the highway

## Future Re-Envisioning of the Highway

| Priority |
| :--- |
| 7. RE-ENVISION THE |
| HIGHWAY |
| Re-envision Highway 16 as a |
| leisurely driving route that |
| appreciates the scenic byway, |
| provides a welcoming |
| entrance to the community, |
| and enables bicycle and |
| pedestrian mobility and |
| crossings. |

Design Considerations/Strategies

- Convert Highway 16 to two-lanes in town and narrowed lanes throughout the study area to reduce prevailing speed, improve safety and character, and comfortably accommodate biking and walking (even through constrained sections).
- Consider unique entry features to announce arrival into La Crescent.
- Add pedestrian and bicycle crossings - consider roundabouts and pedestrian hybrid beacons.

Next Steps

- Conduct a traffic study to determine suitability to reduce four lanes to two lanes in-town.
- Develop graphic concepts for each section of the highway to convey the vision

Partners

- City of La Crescent - MnDOT


## Active Transportation Planning \& Design

A next step is to refine starter ideas and concepts presented in this Plan for the preferred location (alignment) of a multi-use path on the east side of MN Highway 16. Given right-of-way, topographic, railroad and wetland challenges, the facility type might need to vary.

This requires balancing community priorities based on relevant project constraints, data analysis and engineering judgement. There are many important factors, including the need for separation between modes, when determining location and where facility type may vary, all of which will drive trade-offs, conversations and decisions.

This Toolbox presents design techniques that can be used to create a multi-use path and experience that fulfills the active transportation principles of safety, comfort, coherence, directness and attractiveness. It provides a starting point to


Photo: MnDOT Bicycle Facility Design Manual illustrate core concepts and further guide conversations, analysis and decision-making to advance the concept of an attractive, safe and comfortable roadway with bicycle and pedestrian facilities that serves the transportation needs of all users.

## Trail and Bicycle Facility Design

The recommendations presented in this Plan emerge from evidence-based best practices in active transportation design.


## Bicycle Facility Design Manual

Minnesota Department of Transportation (MnDOT), 2020



Small Town and Rural Design Guide

Federal Highway Administration<br>(FHWA), 2016



## Bikeway Selection Guide

> Federal Highway Administration (FHWA), 2019

There are many excellent resources available for trails and bikeways. The MnDOT Bicycle Facility Design Manual serves as a key resource for how to design Minnesota's transportation system to support the safety, comfort and convenience for all people bicycling. The Small Town and Rural Design Guide provides design details for trails as well as on-street bikeways for rural settings. The Bikeway Selection Guide builds on FHWA's support for design flexibility to assist transportation agencies in the development of connected, safe and comfortable bicycle networks that meet the needs of people of all ages and abilities.

In addition to these, FHWA has a suite of other design guidance and references on proven safety countermeasures. It is time to put these into practice.

## ILLUSTRATING CORE CONCEPTS

## Multi-Use Trails / Shared Use Paths

## fULLY SEPARATED PATHS / MULTI-USE TRAILS

Paved trails (also known as shared use paths) are completely separated from motorized traffic and are shared by people walking, biking and rolling traveling in both directions. They are generally 10 to 14 feet wide. In constrained circumstances, 8 feet wide is allowed.
Source: AASHTO (2012), Guide for the Development of Bicycle Facilities, 4th Edition


People rolling and strolling along a multiuse trail or side-path.
Photo: Small Town \& Rural Design Guide


ILLUSTRATING CORE CONCEPTS

## Rural Paved Trails

Physically Separated


NW 'quววรวว

ACTIVE TRANSPORTATION ACTION PLAN

## Pacific Rim Hwy, Tofino, BC

## MULTI-USE TRAIL CONNECTING COMMUNITIES \& LOCAL CULTURE

Completed in 2022, the 15.5-mile multi-use trail called Papsčiik tašii (pronounced: ups-cheek ta-shee; meaning going in the right direction on the trail) connects the towns of Tofino and Ucluelet on the west coast of Vancouver Island, British Columbia. Not only does the trail connect communities by providing a safe path that is family-friendly, but it is also beautiful, celebrating local culture. It weaves through the temperate rain forest, along boardwalks over bogs, aside rural-style bioswales and improved creek crossings help restore important fish habitat. While the facility treatments vary to meet the constraints of the road and surrounding environment, it offers a very coherent path for all to travel.

## Rail-with-Trail

## Side by Side Uses

The Rails to Trails Conservancy has inventoried over 1,000 examples of rails with trails. Many of these were built with exceptions to the rules and polices that the railroads have in place, due to mitigations that the entities managing the trails were able to incorporate with the trail development (e.g., barriers between the trail and railroad).

The distance between the edge of the trail and the centerline of the closest active railroad track is referred to as the "setback." If no vertical barrier, such as a 6-feethigh fence, is included, the preferred minimum setback is 25 feet. The range of setbacks on existing rails-with-trails varies considerably, from 7 to 200 feet, with an average of approximately 32 feet. A comparison of rail-with-trail setbacks with both train speed and frequency reveals little correlation, with some trails reporting a narrow setback existing along high speed and frequently traveled rail lines.

Factors to consider in the setback include:

- Train speed, frequency and type
- Rail maintenance and operational needs
- Track curvature
- Topography and other environmental or physical constraints
- Trespassing patterns
- Type of separation, such as fences or vegetation
- Any applicable state standards



## Rails-with-Trail, Various Communities

## RAIL WITH TRAIL SUCCESSES

Trails have been developed successfully along active rail lines with various setbacks. Trail managers report few problems with trail operations or incidents due to the proximity to the rail line.

- La Crosse River State Trail (1987) - La Crosse, Wisconsin - This 21-mile-long trail is separated from the active rail line by approximately 100 feet of marshland or prairie. There are approximately 16 freight and Amtrack trains per day, with speeds up to 80 mph
- Cedar Lake Trail (1980s) - Minneapolis, Minnesota - This 3.5-mile-long trail operates in a 25 -feet-wide easement in the BNSF Railway. There are 10 to 12 trains per day traveling between 25 and 50 mph .
- Inland Rail Trail - San Diego County, California - There is a seven-foot setback between the trail and rail line. There are 70 trains per day traveling up to 60 miles per hour.
- Frisco Trail (2006) - Fayetteville, Arkansas - The trail is as close as two feet away from the Arkansas and Missouri Railroad line thorough downtown.
- Camp Chase Trail (2016)-Columbus Ohio - Parts of the trail are 10 feet from the Camp Chase Railway line at its narrowest point.
- Montour Trail - Allegheny County, Pennsylvania - Setback of 14 feet along the Wheeling and Lake Erie Railway line, which hosts one train per day traveling at 10-20 miles per hour. Source: Rails to Trails Conservancy

Photos (from left to right):

- The Inland Rail Trail is separated from the active rail line by an attractive fence (Source: Keep San Diego Moving)
- North Cedar Lake Regional Trail is separated by a chain link fence. (Source: Minneapolis Public Works Department)
- The Camp Chase Trail runs alongside the active rail line with no vertical barrier.
(Source: Trail Link and orangedoug)


## Buffered and Separated Bike Lanes

## FOR MANY USERS

The standard 5 -feet-wide bike lane has evolved to better meet the needs of all types of bicyclists. Increasing separation and protection of people biking improves comfort and safety for riders. It also improves coherence since the preferred place for people riding is clearly marked on the pavement and with signage.

Bike lanes are typically located on both sides of the road so that people biking are traveling the same direction as traffic.

In rural settings where sidewalks are not typically present, people may want to also use bike lanes for walking or running. Wider bike lanes can better accommodate multiple uses and allow for faster users to pass slower users.


Buffered Bike Lanes: provide a painted buffer between the bike lane and the travel lane to increase the separation between the two modes. The buffer width is typically 2 to 3 feet wide, while the bike lane is typically 5 to 7 feet wide. In rural settings, rumble strips within the painted buffer can help to alert motorists if they start to veer toward the bike lane. Since buffered bike lanes do not provide a vertical barrier, they may be uncomfortable for some people when traveling along highspeed traffic.


Physically Separated Bike Lanes: provide a vertical barrier between the bike lane and the motorized travel lane. This may be in the form of flexible bollards, a raised curb, guard rails, concrete barriers, landscaped planters and more! A non-flexible vertical barrier would provide the most comfort for users. A wider buffer of 3 to 4 feet accounts for a "shy distance" for the bicyclist from the vertical element. (Separated bike lanes are also known as protected bike lanes or cycle tracks.)

## Separated Bike Lanes

Vertical elements can vary in the degree of "protection" provided. They may take the form of flexible bollards, parking stops, raised medians, or concrete barriers. Guard rails may also serve as separation.

Source: Separated Bike Lane Planning and Design Guide, FHWA, 2015

FORMS OF SEPARATION Concrete Barrier



## ILLUSTRATING CORE CONCEPTS

## Rural Bike Lanes

## FOR CONFIDENT RIDERS

A paved shoulder may be marked as a bike lane in rural areas. A slight upgrade would be to highlight the shoulder with a different color of paving material. Confident bike riders may be comfortable riding under these conditions and if traffic volumes are very low, some more cautious riders may join them. However, this type of treatment is unlikely to be comfortable to all ages and abilities.


## Right-Sizing Streets

To make streets safer for people walking, biking and driving, many communities are reallocating the number of vehicle lanes or lane widths in order to direct additional space towards trails, wider sidewalks, bike lanes, street trees, on-street parking and more.

Narrower Lanes: Narrowing lanes can reduce the operating speed of traffic while also providing the width needed for bikeways. Ten-feet-wide lanes have a positive impact on a street's safety without impacting traffic operations (NACTO.org). A default street width of 10 feet, with allowances to widen to 11 feet in certain circumstances (e.g., transit or truck routes), can improve traffic safety communitywide. On multiple-lane transit or truck routes, the outside lane may be 11 -feetwide, while the inside lanes remain at 10 -feet-wide.

AASHTO's A Policy on Geometric Design of Highways and Streets-commonly referred to as the "Green Book"-provides flexibility to use 10-feet-wide travel lanes in a variety of situations depending on operating speeds, volumes, traffic mix, horizontal curvature, use of on-street parking and street context. Ten-feetwide lanes do not result in an increase in crashes or reduce vehicle capacity on roads with speeds of 45 mph or less. Narrower lane widths can contribute to lower vehicle operating speeds, which can increase safety for all roadway users (FHWA Bicycle Selection Guide).

Reduced Number of Lanes: Right-sizing streets from 5- or 4-lane roads to 3- or 2lanes works best on streets that have daily traffic volumes of less than 20,000 vehicles. As streets reach the higher traffic volumes additional intersection treatments such as the modern roundabout might be needed to more effectively manage the vehicular traffic.


## Roundabouts

## CONFLICT RESOLUTION

Intersections present the most conflict points between motorists and people biking and walking. Modern roundabouts are a Federal Highway Administration (FHWA) "Proven Safety CounterMeasure," creating a safer intersection for all users:

- $90 \%$ reduction in fatal crashes
- $75 \%$ reduction in injury crashes
- 30-40\% reduction in pedestrian crashes
- $10 \%$ reduction in bicycle crashes
- $30-50 \%$ increase in traffic capacity

Roundabouts slow traffic to the design speed, often $15-23 \mathrm{mph}$, while accommodating up to $\mathbf{2 5 , 0 0 0}$ vehicles per day. The slower design speed increases drivers' ability to judge and react to other people driving, walking and biking. Roundabouts can be designed with dedicated space for people biking or walking with pavement markings, signage, and separation.

Roundabouts at the intersections of highways entering town can also serve as a gateway with landscaping or signage that signifies that travelers are now entering town and should slow down from their faster highway speeds. Consider roundabouts at the intersections of Highways 16 and 26 (Miller's Corner), Highway 16 and South $14^{\text {th }}$ Street, and Highways 16 and 14/U.S. Highway 61/S $3^{\text {rd }}$ Street.


## Protected Intersections

## DEDICATED SPACE FOR EACH MODE

Protected intersections provide dedicated space for each mode of travel：walking，biking and driving．They can be implemented at stop－controlled or signalized intersections and are most often used with separated bike lanes，but may be used with conventional bike lanes， paved shoulders，or even shared lanes．A variation on the standard protected intersection can also be designed for two－way bicycle traffic on one side of the road．

## Benefits include：

－Provide clear right－of－way assignment between modes
－Maintain physical separation between bicyclists and motor vehicles through an intersection
－Place queued bicyclists in front of and in clear view of drivers
－Improve visibility of bicyclists for motorists＇while turning
－Clearly define pedestrian and bicycle operating spaces
－Reduce pedestrian and bicycle crossing distance
－Reduce motor vehicle turning speed

A protected intersection could be considered at the intersection of Highways 16 and U．S． Highway 61／S $3^{\text {rd }}$ Street．


## Pedestrian Hybrid Beacons

## MAKE MULTIPLE LANE, HIGH SPEED STREET CROSSINGS SAFER

Pedestrian Hybrid Beacons (PHB) (also known as HAWK - High-Intensity Activated Crosswalks) are a proven safety countermeasure suitable for crossing higher speed ( 35 mph or more) and higher volume ( 9,000 vehicles per day or more) roadways.

The signal remains dark until activated, then turns yellow to slow traffic before tuning red to allow pedestrians to cross while motorists wait behind a
 stop bar. The crossing must also include a marked crosswalk and pedestrian countdown signals.

Pedestrian Hybrid Beacons are proven to reduce:

- Pedestrian crashes by $55 \%$
- Total crashes by $29 \%$
- Serious injury and fatal crashes by $15 \%$

Source: https://highways.dot.gov/safety/proven-safety-countermeasures/pedestrian-hybrid-beacons

## Trail Amenities

Amenities along the trail can help achieve the active transportation principles. For example, lighting can improve user safety by improving visibility. Wayfinding signage can improve coherence and directness. Restrooms, water, and seating areas can improve comfort. Artwork, scenic overlooks can improve aesthetics. Together, amenities can support a unique trail experience while also establishing character and sense of identity for the trail.

- Restrooms and water
- Wayfinding signage
- Bike fix-it stations
- Doggy waste stations
- Lighting and safety improvements
- Resting points, seating or picnic areas
- Scenic overlooks
- Offshoot trails into natural areas, such as a boardwalk into the wetlands
- Mountain bike trail offshoots or similar dirt trails
- Nature and signage describing the environment
- Historic features and signage describing history
- Play areas for children
- Outdoor exercise equipment
- Artwork/murals/sculpture



## Winter Maintenance

## PEOPLE WALK \& BIKE YEAR ROUND

People biking and walking are susceptible to the negative impacts of delayed maintenance. People walking, biking or using a mobility aid are often discouraged from venturing outdoors when snow and ice can impede their ability to safely access their destination. Year-round maintenance of walking and biking surfaces, pavement markings, and signage are necessary to ensure equitable mobility for all.

## Key principles to guide winter

 maintenance policy and practice:- Priority Network: Identify which routes are the highest priority for snow clearing (e.g., route to school).
- Frequency of Clearing: Specify the amount of accumulated snow that is acceptable before clearing will commence. Common accumulation is
 1 inch.
- Clear Width: What minimum width of cleared path along a bikeway or multi-use trail is allowable? For example, cities specify a minimum of 4 feet for narrowest operable space along a separated bike lane.
- Responsibility: Identify the responsible party and put into place necessary agreements.


All Clear: Historic snow volumes didn't stop Cambridge, MA from prioritizing snow removal of separated bikeways. A small bobcat style plow was used.


A small portion of a trail could be plowed for biking and walking while another portion could be left unplowed for skiing and snowshoeing. Alternatively, some communities do not plow rural trails (but do plow intown), to allow for snowmobile, skiing, or snowshoeing usage Snowmobiles with metal traction devices can damage paved surfaces and should not be used on trails.

| Source | Funds | Purpose |
| :---: | :---: | :---: |
| US DOT | Safe Streets and Roads for All (SS4A) | Low-cost infrastructure; education; monitoring and evaluation |
| US DOT | Rebuilding American Infrastructure with Sustainability and Equity (RAISE) | Infrastructure funds as well as planning for eligible surface transportation capital projects |
| US DOT | Rural Surface Transportation Grant | Improve and expand transportation infrastructure in rural areas |
| FHWA | National Byways Program | Funds improvements along byways, such as facilities, safety improvements and interpretive information implementation |
| FHWA | Carbon Reduction Program | Projects designed to reduce transportation emissions |
| MnDOT Active Transportation Program | Infrastructure Grants, Planning Assistance, Quick Build/Demonstration Projects | Support active transportation capacity building and facilities |
| MnDOT Safe Routes to School | Infrastructure Funds | Construct sidewalks; improve crossings |
| MnDOT (Federal Funding) | Transportation Alternatives (TAP) | New pedestrian and bike facilities |
| MnDOT | $\begin{aligned} & \text { Local Road Improvement Program } \\ & \text { (LRIP) } \end{aligned}$ | Funding for constructing or reconstructing local roads |
| MN DNR | Regional Trail Grant | Motorized, non-motorized and joint trail usage |
| MN DNR | Outdoor Recreation Grant Program | Matching grant for the cost of acquisition, development, and/or redevelopment of local parks and recreation area |
| MN DNR | Local Trail Connections Program | Supports acquisition and development of trail linkages |
| MN DNR (Federal funding) | Federal Recreational Trail Program | New trails, trail maintenance and trailhead construction |
| Greater Minnesota Regional Parks and Trails Commission | Parks and Trails Legacy Grant Program | "Regionally Designated" parks and trails can be funded |
| Legislative-Citizen Commission on Minnesota Resources (LCCMR) | Environment and Natural Resources Trust Fund (ENRTF) | Activities that protect, conserve, preserve and enhances Minnesota's air, water, land, fish, wildlife and other natural resources |

## State and Federal Funding for Active Transportation

In addition to local Capital Improvement Program funds, local jurisdictions may seek state and federal funding to assist with development of the active transportation network. Most programs involve applying through one or more of these agencies:

- United States Department of Transportation (US DOT)
- Federal Highway Administration (FHWA)
- Minnesota Department of Transportation (MnDOT)
- Minnesota Department of Natural Resources (MN DNR)
- Greater Minnesota Regional Parks and Trails Commission (GMRPTC)
- Legislative-Citizen Commission on Minnesota Resources (LCCMR)

Grants are also available through organizations that support economic development and tourism, public health, and conservation. Parks and Trails Council of Minnesota has a guide: https://www.parksandtrails.org/grants with additional recourses. Private donations are popular for projects that support community recreation and well-being.


## Next Steps

1) Keep building momentum, awareness and participation. Share the vision for a trail alignment along the Highway 16 corridor and starter concepts with residents, partners and other stakeholders.

- Host an Open House
- Present to the City of La Crescent Planning Commission, Park and Recreation Commission, Bike-Ped Committee, Safe Routes to School Committee, Green Step Committee, Natural Resources Committee
- Share with the Root River Trail Extension - Citizen Exploratory Committee
- Share with US Fish and Wildlife Service (USFWS) and MN DNR representatives
- La Crescent City Council and Houston County Commission adoption
- Host conversations with businesses and landowners
- Inform local legislators/representatives
- Create a marketing and advocacy campaign

2) Continue to coordinate, develop and maintain governmental partnerships.

- Work closely with MnDOT District 6 to advance the corridor vision through a design and engineering study
- Further conversations with MN DNR on State Trail designation
- Work with USFWS to understand flood mitigation measures and opportunities to strengthen the message on how trails provide environmental and emergency evacuation co-benefits
- Continue to position the multi-modal/multi-use facility as a priority in regional planning with La Crosse Area Planning Committee (Metropolitan Planning Organization)
- Establish a joint-governmental group for further coordination and negotiation with Canadian Pacific Kansas City (CPKC) Railroad

3) Leverage upcoming projects. Continue to take incremental steps in improving the active transportation network and steps toward a fully separated trail with MnDOT District 6 mill and overlay project of a section of Highway 16, scheduled for 2026.

## A Call to Action

## COMMUNITY CHARGE

It has been a long-held and studied vision to create a multi-use trail connection from La Crescent to the Root River Trail. Multiple plans and processes, including this one, keep affirming the need to reenvision the Highway 16 corridor to ensure it offers all people, regardless of mode, the ability to enjoy the natural beauty of the region, while also maximizing the health of people, the environment and local economies. La Crescent isn't new to trail building. The recent Wagon Wheel Bridge is a testament to the fortitude and collaboration it takes to successfully build trails and facilities dedicated to active transportation users. Continue to act together and take trail building in segments. Celebrate wins. Focus on incremental ways to further build momentum.

The MnDOT Active Transportation Program supports community-led Active Transportation planning in communities, cities, and counties across Minnesota. This planning process includes an analysis of existing conditions, public outreach and identification of potential infrastructure and non-infrastructure solutions that contribute to the State's goal of helping more people walk and bicycle safely to destinations where they live, work and play. Plans help lay the foundation for future engineering, design and construction work that will bring projects to fruition. A unified community vision and a commitment to advocacy are key to moving those projects forward. The following Plan is a living document that can be used to guide continued conversation and close collaboration with MnDOT and District 6 leaders, among other partners, to take the next steps in advancing active transportation for the City of La Crescent and surrounding region. La Crescent and MnDOT have a unique opportunity to model how rural highways can balance recreation, transportation and economic development needs by creating a multimodal corridor that maximizes public benefit.


[^0]:    - Statewide Bicycle Systems Plan

[^1]:    *The mobile home neighborhood connection is important to ensure transportation equity and a safe route to school. In addition, ensuring safe crossing of MN Hwy 16 near Kistler Drive

