



FARGO-MOORHEAD METROPOLITAN
**BICYCLE AND
PEDESTRIAN
PLAN**

August 2022

METROCOG

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Executive Summary

This plan updates the 2016 Fargo-Moorhead Metropolitan Bicycle and Pedestrian Plan.

It provides new and updated information about the people and communities within the region, including how transportation systems support and inhibit people from walking and biking to their desired destinations.

This plan also provides recommendations for ways in which Metro COG; local, county, and state governments; non-profit organizations; and community members can work to create better bicycle and pedestrian transportation systems, policies, and programs. These recommendations include: a bicycle network for all ages and abilities of people on bicycles; improvements to pedestrian crossings; design guidelines; policy and program recommendations; and process improvements.

Implementation is critical to realizing the vision and guiding principles of the Plan. Implementation includes identifying bicycle and pedestrian network priorities, determining their possible configuration and estimating

their costs.

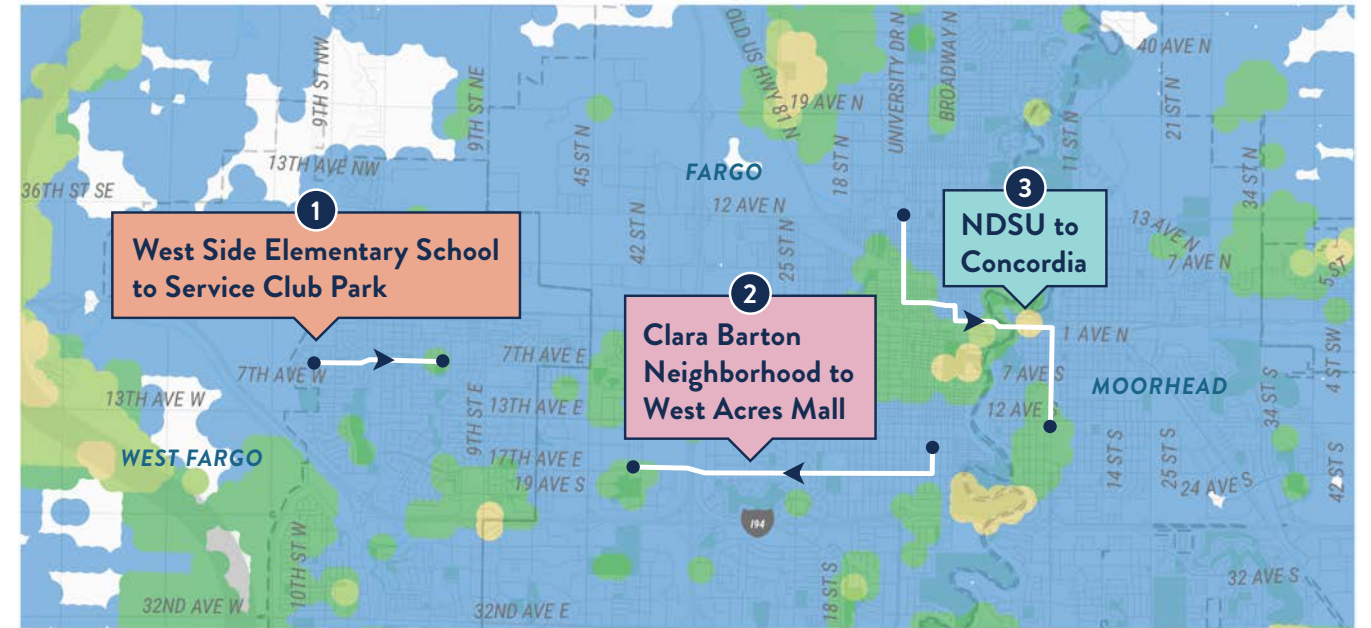
At each phase of the planning process, input from the public, key stakeholders, and agency staff shaped the focus of the Plan, including how recommendations were identified and prioritized. Public input also informed development of the Plan's Vision statement, which reflects a shared regional philosophy about walking and biking and will be used to guide future bicycle- and pedestrian-related policy, infrastructure, and programming decision-making.

The Vision reads:

"Walking and bicycling are primary, year-round modes of transportation that equitably connect all people and places in Metro COG's planning area."

We invite you to explore the Plan below, and then to turn to the critical work of building better bicycle and pedestrian systems throughout the community.

Bicycle Network Improvements for a More Connected Fargo-Moorhead Community



NEARLY 50% OF TRIPS IN THE FARGO-MOORHEAD REGION ARE THREE MILES OR LESS.

INCREASE IN AREA ACCESSIBLE BY BIKING WITH THE IMPLEMENTATION OF LOW STRESS BIKEWAYS

- 0%
- 0-10%
- 10-50%
- 50-200%
- >200%

Every day, people in the Fargo-Moorhead area take nearly half a million trips that are three miles or shorter. While a 3-mile trip takes only takes about 15 minutes by bicycle, people drive cars for most of these short trips. As part of engagement for this plan, most people said that they would bicycle more if there were more and better-connected bikeways separated and protected from vehicle traffic.

Building out an all ages and abilities bicycle network across the Fargo-Moorhead area would make it easier for everyone—older adults, families, college students, workers, and more—to get where they need to go by bicycling. In areas of the community with few existing comfortable bicycle routes, building out the network would more than triple the area accessible by biking!

WHEN THE NETWORK IS BUILT, PEOPLE WILL BE ABLE TO MAKE MANY TRIPS IN UNDER 3 MILES ON LOW-STRESS BICYCLING FACILITIES. FOR EXAMPLE:

1

5th graders going to baseball practice at Service Club Park after school.

2

Clara Barton neighborhood resident traveling to their job near West Acres Mall.

3

NDSU student visiting a friend at Concordia College.

Introduction

Every five years, Metro COG updates the Fargo-Moorhead Metropolitan Bicycle & Pedestrian Plan. Since the last Plan was completed in 2016, Metro COG and member jurisdictions have completed many Plan recommendations, including installing 39 bicycle and pedestrian infrastructure projects, maintaining the bikefm.org education website, being awarded a Bronze-level Bicycle Friendly Community, launching a mobile bikeways map application, and more.

The Plan describes a **Vision, Guiding Principles, Objectives, and Performance Measures** that will help to inform, design, and evaluate transportation investments by Metro COG and its constituent jurisdictions until the next plan update. This plan examines the existing bicycle and pedestrian networks, considers input from the public and local jurisdictions, and provides recommendations and guidance to meet the needs of the community and improve transportation systems for all users.

The Plan goals include:

- Expand on the work done for the 2016 Plan through **extensive public engagement**;
- Prepare **existing conditions analysis** of spatial and quantitative data to describe the physical and social environments of the region;
- **Prioritize bicycle and pedestrian infrastructure project recommendations**, including planning-level cost estimates and suggested typical sections visualizing possible layouts for these projects; and
- **Assessments of local and state policy, processes, and programming** to identify opportunities to eliminate barriers to walking and biking and to incentivize more active transportation.

Metro COG staff, in collaboration with a consultant team and a study review committee which included local government and community representatives, undertook this process during 2021 and 2022.

The resulting Plan, presented here, provides an actionable set of recommendations for improving the physical and policy environments that shape walking, biking, and rolling throughout the region.

This report is organized sequentially, building from the philosophy underlying the planning process (Plan Vision) to information gathering and analysis (community engagement and existing conditions analyses) into development of recommendations (for policy, infrastructure, processes, and programs) and finally implementation considerations. The body of this report provides high-level summaries and key takeaways; the appendices provide more detailed information about each phase of the planning process.



An existing trail underpass in West Fargo

Annual cost of transportation modes



\$6,312 / year (MN)

Per Move.org (2021)



\$5,988 / year (ND)

Per Move.org (2021)



\$504 / year

Per 2022 MATBUS monthly adult fare



\$350 / year

Assumes a \$1,000 bike purchased every seven years with \$200 maintenance & equipment per year



Negligible

Plan Vision

Walking and bicycling are primary, year-round modes of transportation that equitably connect all people and places in Metro COG's planning

Context

This plan aims to chart a clear, consistent, and actionable course toward policy and bicycle and pedestrian improvements. The vision, guiding principles, objectives, and performance measures presented here, which were developed in collaboration with the Study Review Committee and based on community input, provide a framework for future policy-making and transportation system investments. By establishing a desired future for walking and biking throughout the Fargo-Moorhead metro area (the Vision), and by relating fundamental values around active

transportation (Guiding Principles) to more specific desired outcomes (Objectives) and metrics by which to evaluate progress toward those outcomes (Performance Measures), this chapter provides a comprehensive framework for change.

In order to support prioritization of future investments and policy changes, the following guiding principles are ranked in order of importance. In the short-term, this ranking can inform the weighting assigned to the different analysis results described in the Existing Conditions section.

Guiding Principles and Objectives

1 - HEALTH AND SAFETY

Transportation systems proactively promote the comprehensive health and wellbeing of all community members through active transportation facilities that equitably connect users to key destinations.

- Eliminate all fatal and serious injury crashes involving people walking and bicycling
- Center active transportation safety by focusing on reducing vehicle speeds, reducing the right-of-way allocated to vehicles, and prioritizing safety in design and maintenance investments and policies
- Include individual and community health effects when evaluating and prioritizing transportation investments and policy changes

2 - MAINTENANCE

The maintenance and upkeep of transportation systems are imperative to reducing long-term costs, providing quality and safe facilities, and ensuring they are usable year-round for all users.

- Maintain and upkeep existing facilities to maximize the value of investments

- Ensure facilities are kept clear of debris, snow, and ice by means of policies, necessary funding, encouragement, and enforcement so that facilities can be used year-round

3 - CONNECTIVITY

People walking and bicycling can quickly access everyday destinations via low stress, accessible, and inviting facilities.

- Close missing links in sidewalk and bicycle networks, especially along key corridors in neighborhoods with high equity need
- Implement high priority pedestrian and bicycle connections to create continuous, protected facilities
- Prioritize infill development in areas that are centrally located and already are or easily can be served by comprehensive active transportation facilities; discourage future low-density, auto-centric development

4 - EQUITY

Transportation systems are designed to benefit all people, especially those who have been excluded from equitable access in the past on the basis of characteristics such as income, race, gender, ability, and age. Transportation funding will be targeted to areas experiencing disparities and

underinvestment. All people region-wide are able to access and benefit from active transportation facilities and opportunities.

- Engage with communities impacted by transportation inequities and underrepresented communities and use residents' stated needs and priorities to shape active transportation investments and policy changes
- Prioritize active transportation policy changes and infrastructure investments in identified environmental justice area

5 - COLLABORATION

Active transportation systems are a shared asset, created and maintained through coordinated efforts across jurisdictions, agencies, and communities, that work synergistically with related systems, including employment, education, housing, and health.

- All jurisdictions in the region work together, through coordinated investments and policy changes, to create a cohesive regional active transportation system
- Active transportation infrastructure and policy are produced with input from relevant agencies and organizations to maximize the benefits of walking and biking systems

- Implement education and encouragement initiatives that support a culture of walking and biking as primary modes of transportation throughout the area

6 - SUSTAINABILITY / ENVIRONMENT

Transportation policy and infrastructure decision-making accounts for the environmental benefits of active transportation and the environmental costs of motorized transportation.

- Emphasize projects that integrate shade trees, minimize and mitigate stormwater runoff, and integrate other environmentally-friendly features
- Focus on projects and policies that encourage non-motorized travel and remove incentives for motorized travel, thereby reducing air, water, and noise pollution

Performance Measures

Performance measures are divided into two categories: outcomes and investments. Outcome performance measures track indirect results, while investment performance measures track the direct results of government actions. These measures should be tracked both regionwide and for equity priority areas. Results in equity

priority areas should meet or exceed citywide results. Results should be reported in the next update to the Bicycle and Pedestrian Plan in 2027.

OUTCOME PERFORMANCE MEASURES

| PERFORMANCE MEASURE | METRO COG BASELINE | 2027 TARGET | RATIONALE |
|--|------------------------------------|----------------|--|
| Percent of commuters who bike | 0.7% (2018 -BFC Application) | 3.5% (By 2027) | 3.5% is the benchmark for Bicycle Friendly Community Silver status. |
| Percent of commuters who walk | 2.8% (2019 ACS 5-year estimate) | 5% (By 2027) | Comparable metro areas in cold climates have achieved 4-7%. |
| Percent of trips between 1 and 3 miles made by walking or biking | 12% (2019 - Replica analysis tool) | 20% (By 2027) | Converting trips between 1 and 3 miles from car trips to active trips reduces vehicle trips, pollution and improves health outcomes. |
| Percent of trips under 1 mile made by walking or biking | 40% (2019 - Replica analysis tool) | 50% (By 2027) | Converting trips under 1 mile from car trips to active trips reduces vehicle trips, pollution and improves health outcomes. |
| Number of pedestrian and bicycle-involved crashes resulting in severe injury or fatality | 30 (2016-2020) | 0 (2022-2027) | Aligns with NDDOT and MnDOT commitment to end traffic fatalities and serious injuries. |

INVESTMENT PERFORMANCE MEASURES

| PERFORMANCE MEASURE | METRO COG BASELINE | 2027 TARGET | RATIONALE |
|--|---|--|---|
| Total bicycle network mileage to total road network mileage | 29% (2018 -BFC) | 30% (By 2027) | 30% is the benchmark for Bicycle Friendly Community Silver status. |
| Percent of arterial streets with bicycle facilities | 6% (2018 -BFC) | 45% (By 2027) | 45% is the benchmark for Bicycle Friendly Community Silver status. All facilities should be separated from traffic and designed to serve riders of all ages and abilities. |
| Density of low stress crossings of key barriers | Unknown | Arterials: Four per mile Interstates: Two per mile Rivers: Every two miles (By 2027) | More frequent crossings of barriers reduce out of direction travel time and encourage use of active modes. |
| Number of trees adjacent to sidewalks and bikeways within new or reconstructed corridors | Unknown | 135 trees per mile (2022-2027) | Trees make bicycle and pedestrian travel more feasible & comfortable by providing shade and blocking wind. Trees also provide many environmental benefits and contribute to community beautification. 135 trees per mile produces full tree canopy cover when trees mature. |
| Percent of short-term bicycle and pedestrian projects completed | 55% of 2016 Plan short-term projects were complete as of 2021 | 60% of short-term projects identified in 2022 plan completed by 2027 | Implementation of short-term projects is a measure of the degree to which the Bicycle and Pedestrian Plan results in change. |
| Miles of sidewalk gaps closed | Unknown | 75% of existing gaps closed in developed urbanized areas | Sidewalk gaps deter people walking and impact accessibility for people with disabilities. |
| Year-round accessibility of active transportation network | Unknown | To be determined | Poor and inconsistent winter maintenance prevents walking and biking from being reliable year-round modes of transportation. |

Engagement

The development of this Plan featured two phases of engagement. Phase I started in July 2021 and concluded in November 2021 to align with the existing conditions analyses; Phase II began in March 2022 to align with the development of recommendations and concluded in April 2022 to allow time for comments to be incorporated into the final recommendations

Both phases employed a combination of strategies, including passive online activities and active in-person and hybrid virtual meetings.

A Study Review Committee (SRC), which comprised stakeholders from local and state government agencies as well as two citizen representatives, also guided the planning process and provided feedback.

Key findings and themes from engagement and SRC meetings are highlighted below. Full engagement summaries are provided in Appendices A and B.

PUBLIC ENGAGEMENT

During Phase I, more than three-hundred (347) responses were received through the survey. However, engagement participants were less demographically representative of the study area. People of color and people living in households earning less than the study area median income were underrepresented compared to the study area. Phase II gathered over 950 interactions with the interactive map, and 32 responses to the voluntary demographic survey. Phase II engagement was generally more representative of regional demographics.

Respondents identified a number of priorities and concerns, including:

- Bicycle and pedestrian facilities that are physically separated from, and, ideally, set back from the roadway are preferred. Of particular interest is a continuous river trail on both sides of the Red River, as well as more continuous east-west connections from Moorhead to West Fargo.

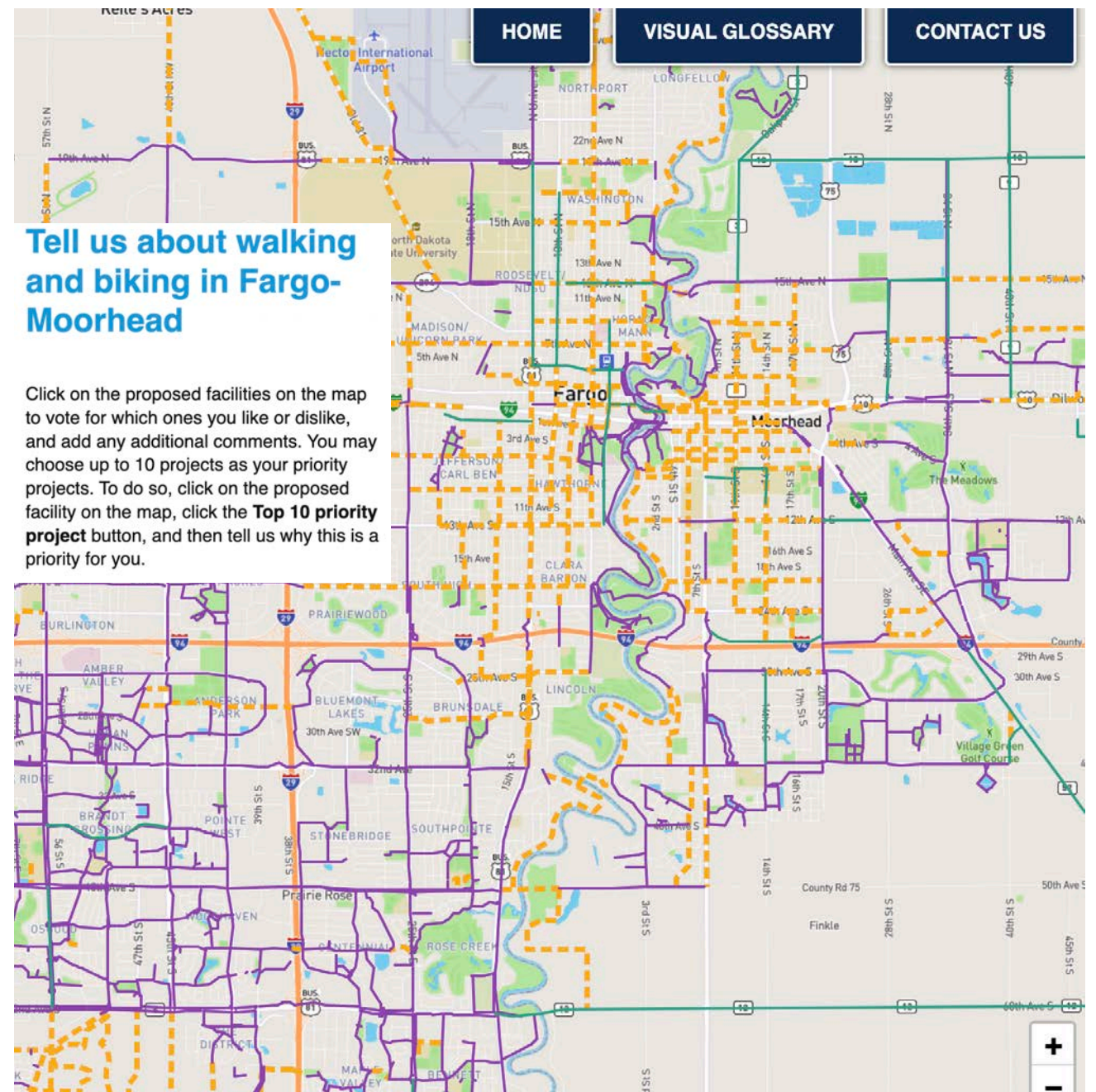
- Regular upkeep and winter maintenance of facilities remain a challenge from the perception of engaged participants, although there is potential for streamlining snow removal policies and treatments coordinated at the regional level to reduce confusion of users traveling between municipalities and neighborhoods.
- Flooding, winter weather, lack of lighting and signage, and poor trail conditions all negatively impact recreational walking and biking, yet people engaged most often cited parks and river-adjacent areas as being desired destinations and routes for improvement with immense potential to provide a regionally significant amenity.
- River crossings remain challenging, especially where existing bridges and facilities do not provide enough passing room for bicyclists and pedestrians either on-street or behind the curb.
- More education is needed around the rules of the road, especially for people driving aggressively around people walking and biking and/or parking in such a way to block sidewalks, accessibility ramps and curb cuts, and trailhead access points. Educational campaigns for cyclists, particularly e-bike users,

and pedestrians, particularly people walking dogs, may be needed to ease relations between active transportation users sharing paths.

- Reviving resources such as Community Bike Workshop and coordinated partnerships with university students groups and/or Black, Indigenous, and People of Color (BIPOC) organizations are desired to increase education and encourage more people to walk and bike.
- The Fargo-Moorhead area has pent up demand for walking and biking as suggested by survey responses and open-ended comments supplied by participants across all passive and active engagement platforms.

STUDY REVIEW COMMITTEE

The Study Review Committee (SRC) provided input on planning processes and findings. SRC members included staff from local jurisdictions, Metro COG, Minnesota and North Dakota Departments of Transportation, Cass and Clay Counties, and local nonprofits, as well as community members. The SRC met four times over the course of the planning process and directly shaped the Plan’s vision and guiding principles; approach to community engagement; and bicycle and pedestrian improvement recommendations and prioritization.



An interactive online mapping application allowed users to provide feedback on proposed bicycle network improvement projects.



Existing Conditions

A quantitative analysis of existing conditions helped to inform subsequent stages in the planning process, including community engagement efforts, development of proposed bicycle and pedestrian network improvements, and the project prioritization process.

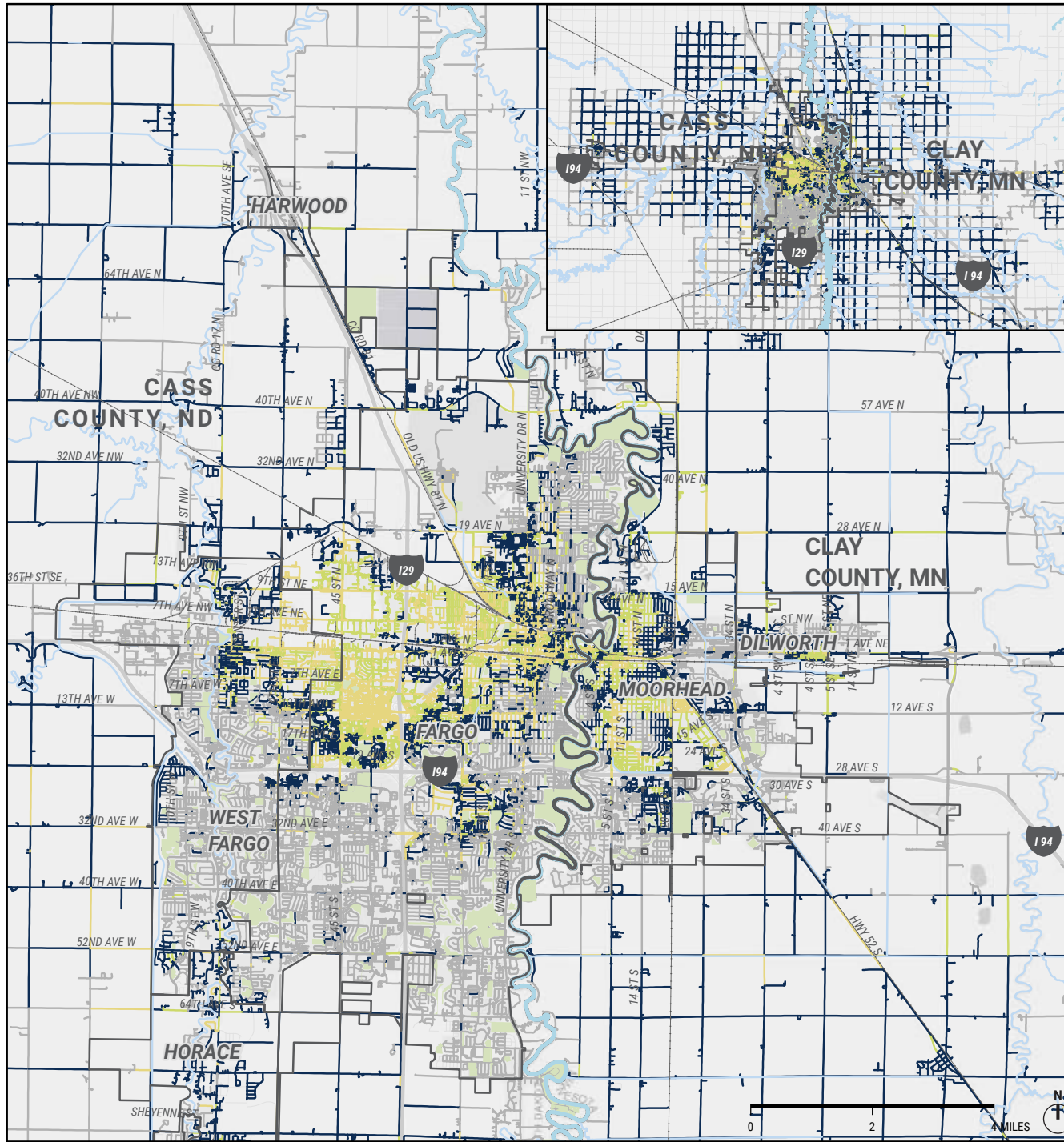
The final priority investment areas scores that resulted from the existing conditions process combined, weighted and normalized scores across equity, active trip potential, connectivity, level of traffic stress, and crash analyses for each network segment in the Metro COG planning area. To align this process with the Plan's Guiding Principles, analyses were weighted to reflect the relative priority of the principle to which they corresponded. Crashes and level of traffic stress were weighted by a factor of two, reflecting the importance of the Safety Principle; Connectivity and Equity were weighted at 1.5, and active trip potential was weighted at 1, corresponding to the "Sustainability/Environment" Guiding Principle.

Separate priority investment areas maps were produced for both the pedestrian and bicycle networks.

For the bicycle priority investment areas analysis, the largest clusters of highly ranked network links are located in the core of Moorhead, downtown Fargo, the area around NDSU, and a large area between downtown Fargo and downtown West Fargo, including the industrial park and the West Ares Mall area.

For the pedestrian priority investment areas analysis, clusters of highly ranked links are located around Downtown Moorhead and Downtown Fargo, the West Acres mall and Brundale neighborhood in Fargo, and North Dakota State University.

A full description of the existing conditions analyses and methods is available in Appendix C, and maps corresponding to the analyses are available in Appendix D.



PRIORITY INVESTMENT AREAS ANALYSIS

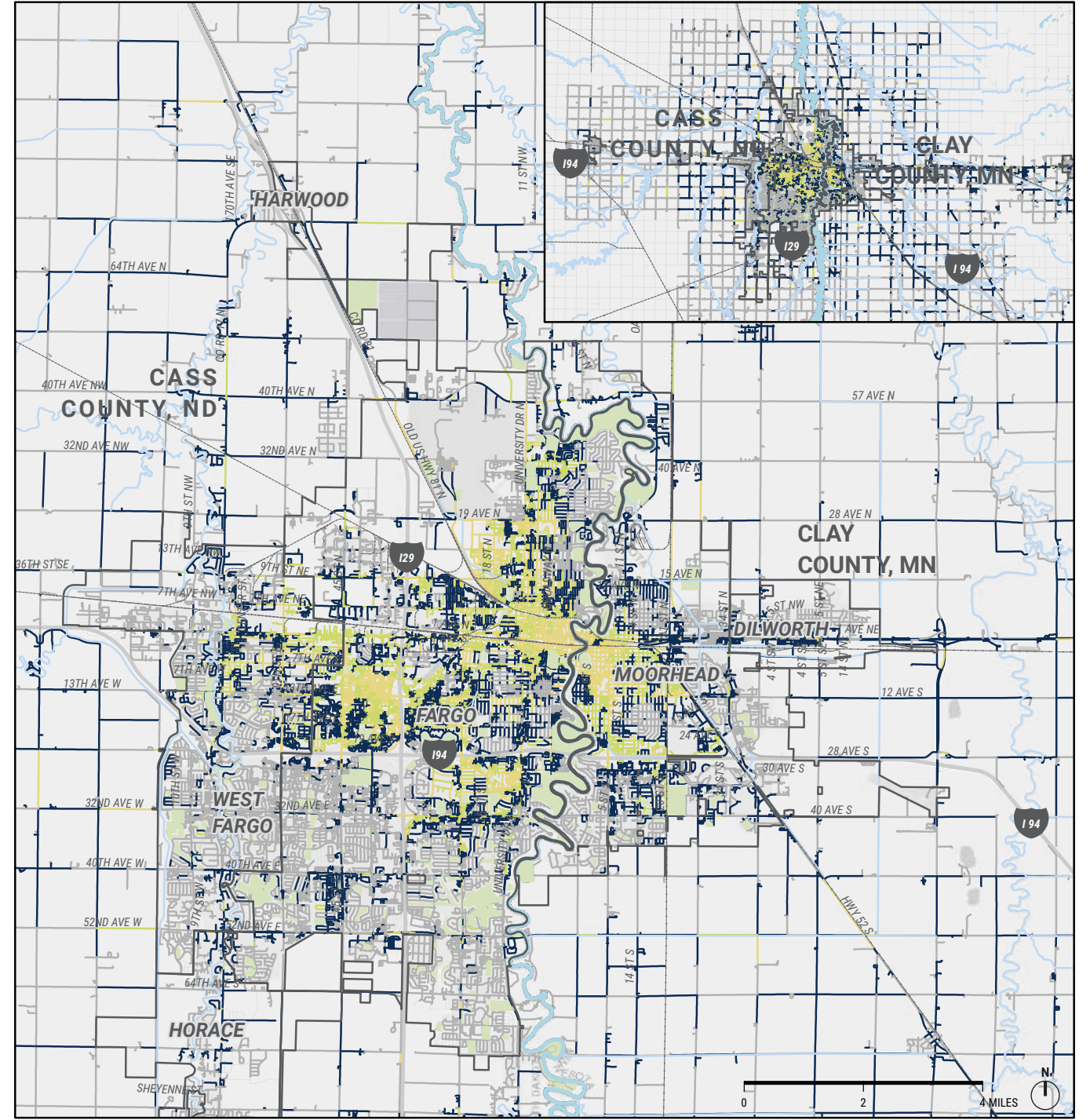
FARGO-MOORHEAD METROPOLITAN BICYCLE & PEDESTRIAN PLAN

BASEMAP

- Railroad
- River
- Park
- Cities
- Counties
- Fargo-Moorhead COG

BICYCLE PRIORITY INVESTMENT AREAS

- Bottom 50%
- Top 50-20%
- Top 10-20%
- Top 0-10%



PRIORITY INVESTMENT AREAS ANALYSIS

FARGO-MOORHEAD METROPOLITAN BICYCLE & PEDESTRIAN PLAN

BASEMAP

- Railroad
- River
- Park
- Cities
- Counties
- Fargo-Moorhead COG

PEDESTRIAN PRIORITY INVESTMENT AREAS

- Bottom 50%
- Top 50-20%
- Top 10-20%
- Top 0-10%



POLICY AND PROGRAMS

To better understand how existing policies at the local and state levels influence walking and biking in the Fargo-Moorhead area, the planning process included an analysis of the following policy domains: municipal vehicle parking requirements, municipal bicycle parking requirements, and municipal and state regulations regarding pedestrian and bicyclist rights, duties, and behaviors on public roads and paths.

Key findings from these analyses included: vehicle parking requirements are prevalent, substantial, and inequitably applied, contributing to the massive amount of urban and suburban space dedicated to parking lots; bicycle parking requirements are non-existent, meaning that much development lacks adequate facilities to ensure bicyclists can securely and accessibly store their bicycles; and existing regulations can create barriers to walking and biking. The full policy and program review is included in Appendix E.

AGENCY PROCESSES

Through interviews with local government staff, the planning team identified challenges and opportunities to expanding and improving walking and biking in the Fargo-Moorhead area. Staff emphasized the importance of land use planning to promote compact, infill development in existing urban cores and to limit new, low-density development. Staff experienced challenges with communicating the full benefits of active transportation projects, including their economic benefits. Staff noted that there is limited external funding available to support pedestrian and bicycle projects. The full agency processes evaluation is included in Appendix F.



The painted bike lane along 4th St S in Fargo is inaccessible to users because snow has not been adequately plowed.

Recommendations

The recommendations produced as part of this planning process cover five interconnected but distinct domains:

- **Design Guidelines** describe best practices in bicycle and pedestrian facility selection and design, and are intended to support local staff when they are developing designs for street projects.
- **Bicycle Network** recommendations identify opportunities for new or upgraded bicycle facilities that will support a safer, more accessible, and more convenient bicycling experience.
- **Pedestrian Improvements** reflect some of the highest-priority intersections in the region where facility upgrades and reconstruction can address pressing safety, accessibility, and convenience considerations.
- **Policy and Program** recommendations identify opportunities to revise government policies, such as parking minimums and bicycling regulations, and to improve or expand programming

options, such as in-school educational curricula, to support active transportation outcomes.

- **Process Improvements** reflect opportunities identified during interviews with local and county government staff to facilitate bicycle and pedestrian planning, construction, and maintenance processes.

Design Guidelines

The design guidelines (full document in Appendix G) presents guidance for local planners, engineers, and advocates to improve the walkability and bikability of the Fargo-Moorhead area and create safer, more comfortable streets for pedestrians and bicyclists of all ages and abilities. Planners and project designers should refer to these guidelines in developing the infrastructure projects recommended by this plan, but they are not a substitute for thorough project-by-project evaluation by a landscape architect or engineer upon implementation.

Future roadway planning, engineering, design and construction will continue to strive for a balanced transportation system that includes a seamless, accessible bicycle and pedestrian network and encourages bicycle and pedestrian travel wherever possible. There are many reasons to integrate bicycle and pedestrian facilities into typical roadway development policy. The goal of a transportation system is to better meet the needs of people — whether in vehicles, riding a bicycle or walking — and to provide access to goods, services, and activities.

Supporting active modes gives users important transportation choices, whether it is to make trips entirely by

walking or bicycling, or to access public transit. In urban areas, walking and bicycling are often the fastest, cheapest, and most efficient ways to complete trips. Convenient non-motorized travel provides many benefits, including reduced traffic congestion, user savings, road and parking facility savings, economic development, and a better environment by helping reduce air pollution. The design guidelines in this document are for use on roadways in the Fargo-Moorhead area. Projects must not only be planned for their physical aspects as facilities serving specific transportation objectives; they must also consider effects on the aesthetic, social, economic and environmental values, needs, constraints and opportunities in the larger community setting. This is commonly known as Context Sensitive Design, and should be employed when determining which standard is applicable in each scenario. All walkway and bikeway design guidelines in this document meet or exceed the minimums set by the Americans with Disabilities Act Accessible Design Guidelines (ADAAG) and the Public Right of Way Accessibility Guidelines (PROWAG).

EXAMPLE FROM DESIGN GUIDELINES: SIDEWALK ZONES & WIDTHS (pg. 16)



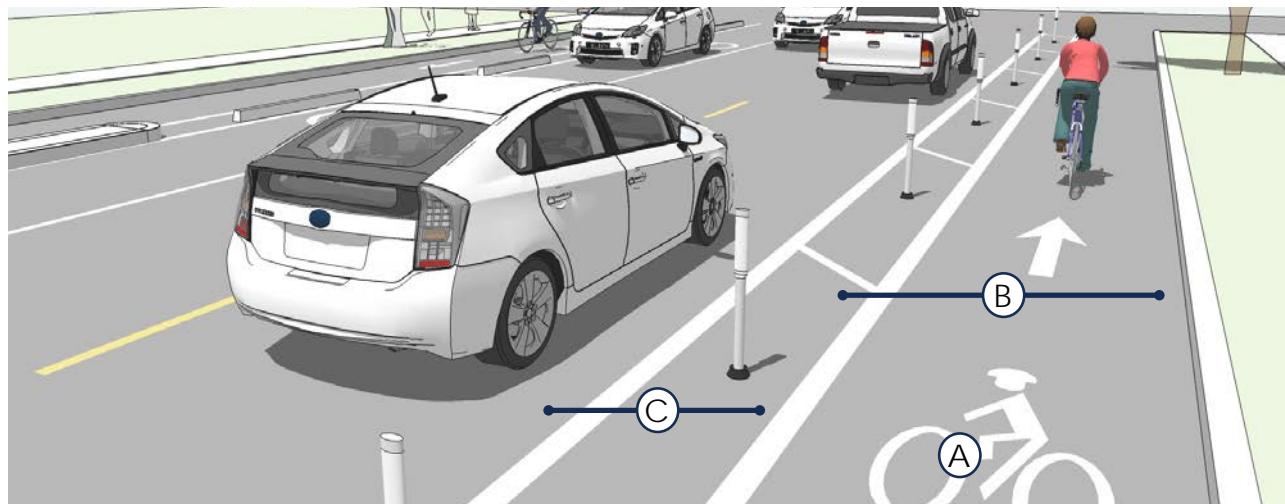
| Enhancement Zone | Amenity Zone | Pedestrian Through Zone | Frontage Zone |
|--|--|---|--|
| The curbside lane can act as a flexible space to further buffer the sidewalk from moving traffic, and may be used for a bike facility. Curb extensions and bike corrals may occupy this space where appropriate. | The amenity zone, also called the furnishing or landscaping zone, buffers pedestrians from the adjacent roadway, and is also the area where elements such as street trees, signal poles, signs, and other street furniture are properly located. When context and space allows, this is the ideal zone to include stormwater infrastructure and plantings such as bioswales and infiltration basins, as well as shade trees. | The pedestrian through zone is the area intended for pedestrian travel. This zone should be entirely free of permanent and temporary objects. Wide pedestrian zones are needed in areas or where pedestrian flows are high. | The frontage zone allows pedestrians a comfortable “shy” distance from the building fronts, fencing, walls and vertical landscaping. It provides opportunities for window shopping, to place signs, planters, or chairs. |

Bicycle Network

Metro COG’s vision for the area’s bicycle network is that users of All Ages and Abilities are able to safely and comfortably bike to and from their destinations. For purposes of identifying recommended improvements, the consultant team identified network density targets to make bicycling comfortable and convenient for all users: facilities every half-mile in suburban areas, and facilities as dense as every quarter mile in denser urban areas and adjacent to major educational and residential centers. Specific recommended improvements

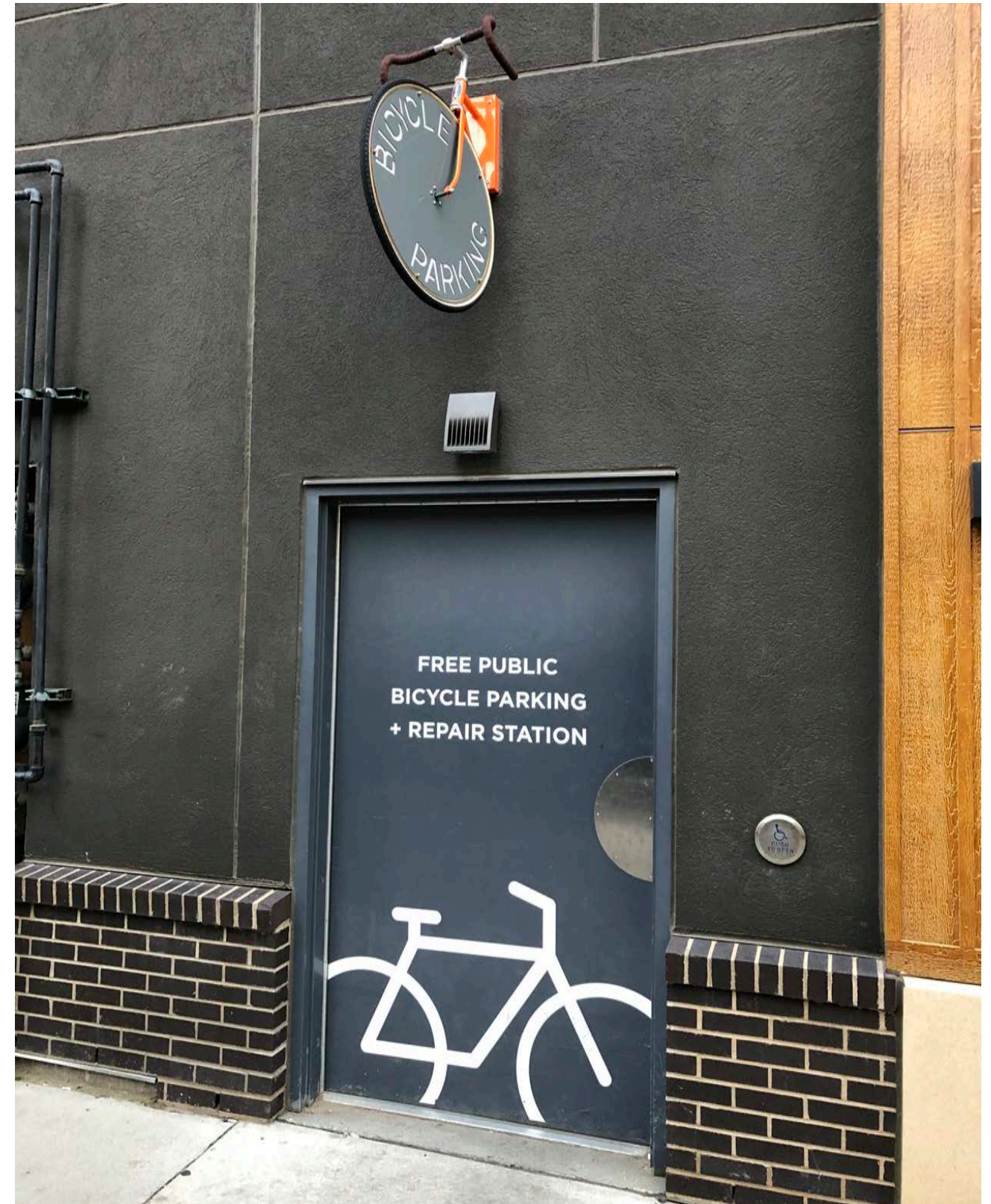
to the bicycle network were identified by evaluating prior planning efforts, community engagement results, Study Review Committee input, and existing conditions. Road segments with existing bicycle facilities that did not meet the facility standards outlined in the design guidelines were also added as recommendations to ensure that the recommended network meets this Plan’s vision for accessibility to All Ages and Abilities. A map of this proposed bicycle network can be seen on page 34.

EXAMPLE FROM DESIGN GUIDELINES: SEPARATED BIKE LANES (pg. 30)



Design Features

- (A) Pavement markings, symbols and/or arrow markings must be placed at the beginning of the separated bikeway and at intervals along the facility based on engineering judgment to define the bike direction. (MN MUTCD 9C.04)
- (B) 6’-7’ foot width preferred in areas with high bicycle volumes or uphill sections to facilitate safe passing behavior.
- (C) When placed adjacent to parking, the parking buffer should be 3 ft wide to allow for passenger loading and to prevent door collisions. When no buffer is present, buffers as narrow as 18 inches may still provide value.



Publicly accessible bicycle parking and repair station

ALL AGES AND ABILITIES BICYCLE FACILITIES

FARGO-MOORHEAD METROPOLITAN BICYCLE AND PEDESTRIAN PLAN

RECOMMENDATIONS AND EXISTING FACILITIES

Existing Facilities

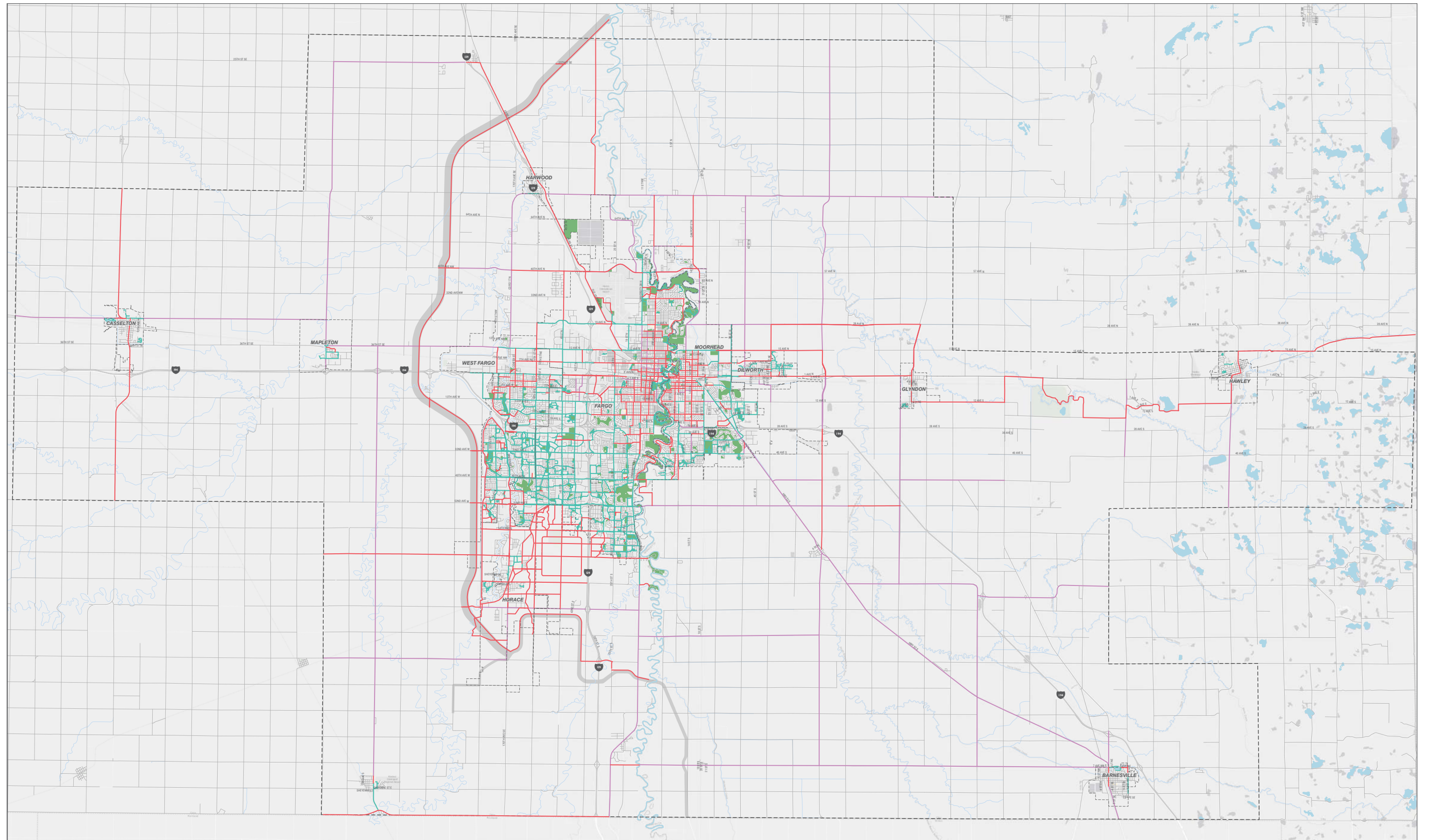
- Physically Separated Facilities
- Visually Separated Facilities

Recommendations

- Bike Facility Recommendations (New/Upgraded Facilities)

Context Features

- Schools
- Park
- Fargo-Moorhead COG Boundaries
- FM Flood Diversion Area



0 2.5 5 MILES

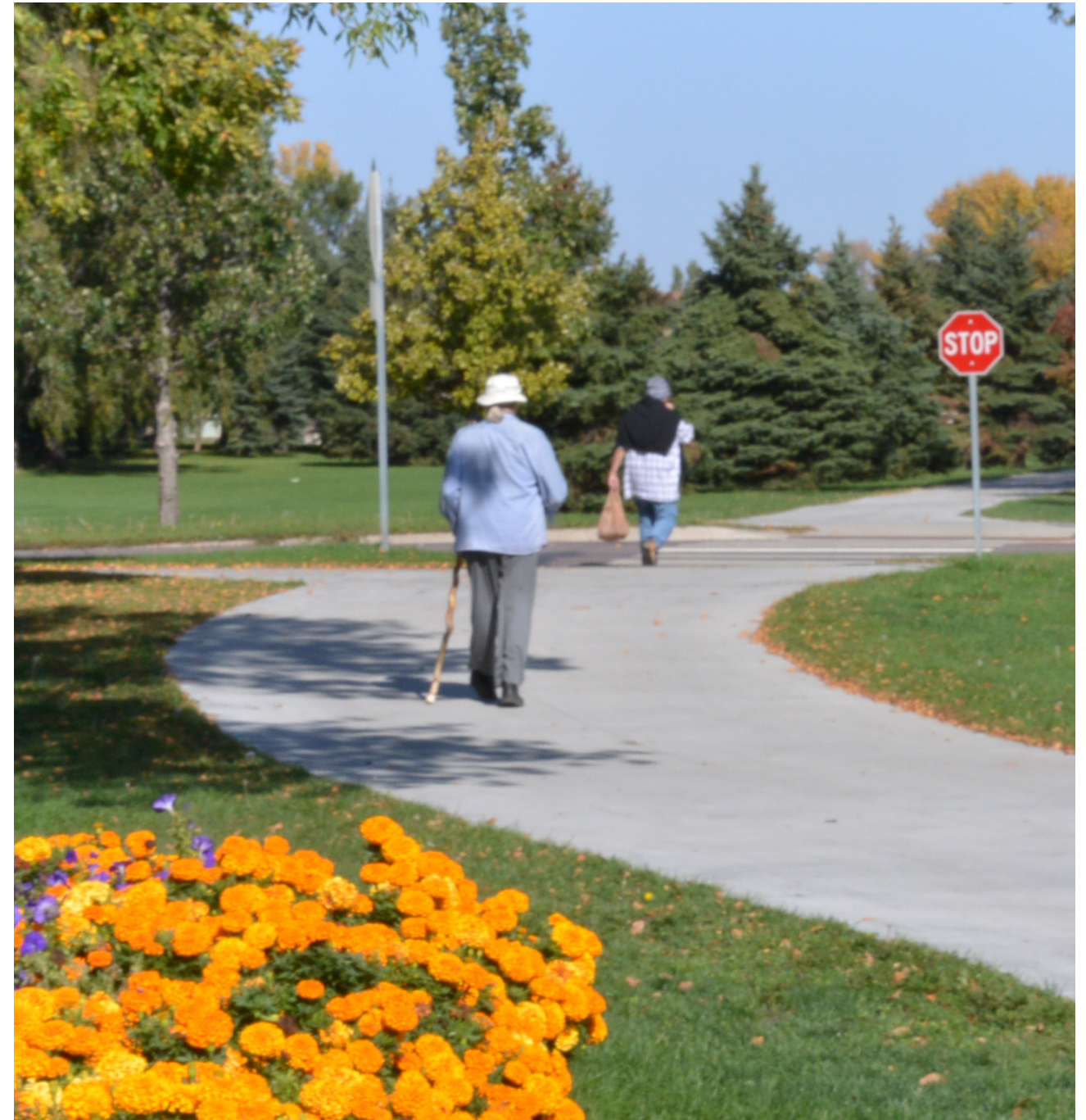


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Pedestrian Improvements

The intersections below were identified as high-priority sites for pedestrian crossing improvements throughout the Fargo-Moorhead metropolitan area. Intersections were identified via the existing conditions analyses conducted as part of this planning process—including Pedestrian Level of Traffic Stress (LTS), equity, collision, and connectivity analyses—as well as with input from staff from Metro COG and its member jurisdictions. In some cases, bicycle network recommendations (presented separately) overlap with pedestrian improvement intersections presented here. Bicycle network recommendations will be implemented to create an All Ages and Abilities

network, and that in many cases these improvements will also improve conditions for pedestrians. It is important to note that improvement recommendations are conceptual only, and do not include engineering or funding considerations. Additional evaluation is required to identify the improvements that are most appropriate to each location. Many of the treatment opportunities identified here are additive, not exclusive. Further evaluation of site-specific conditions will help to inform decisions about the suite of improvements to be implemented at a given location, including how pedestrian and bike facility improvements can be designed synergistically.



People walking on a shared-use pathway

PRIORITY PEDESTRIAN IMPROVEMENTS

FARGO-MOORHEAD METROPOLITAN BICYCLE AND PEDESTRIAN PLAN

- Recommendations**
 - Priority Pedestrian Improvements
 - Bike Improvements
- Priority Pedestrian Segments**
 - Top 10th Percentile
- Context Features**
 - ▭ Fargo-Moorhead COG Boundaries
 - ▭ FM Flood Diversion Area
 - ▭ Parks
 - ▭ Schools



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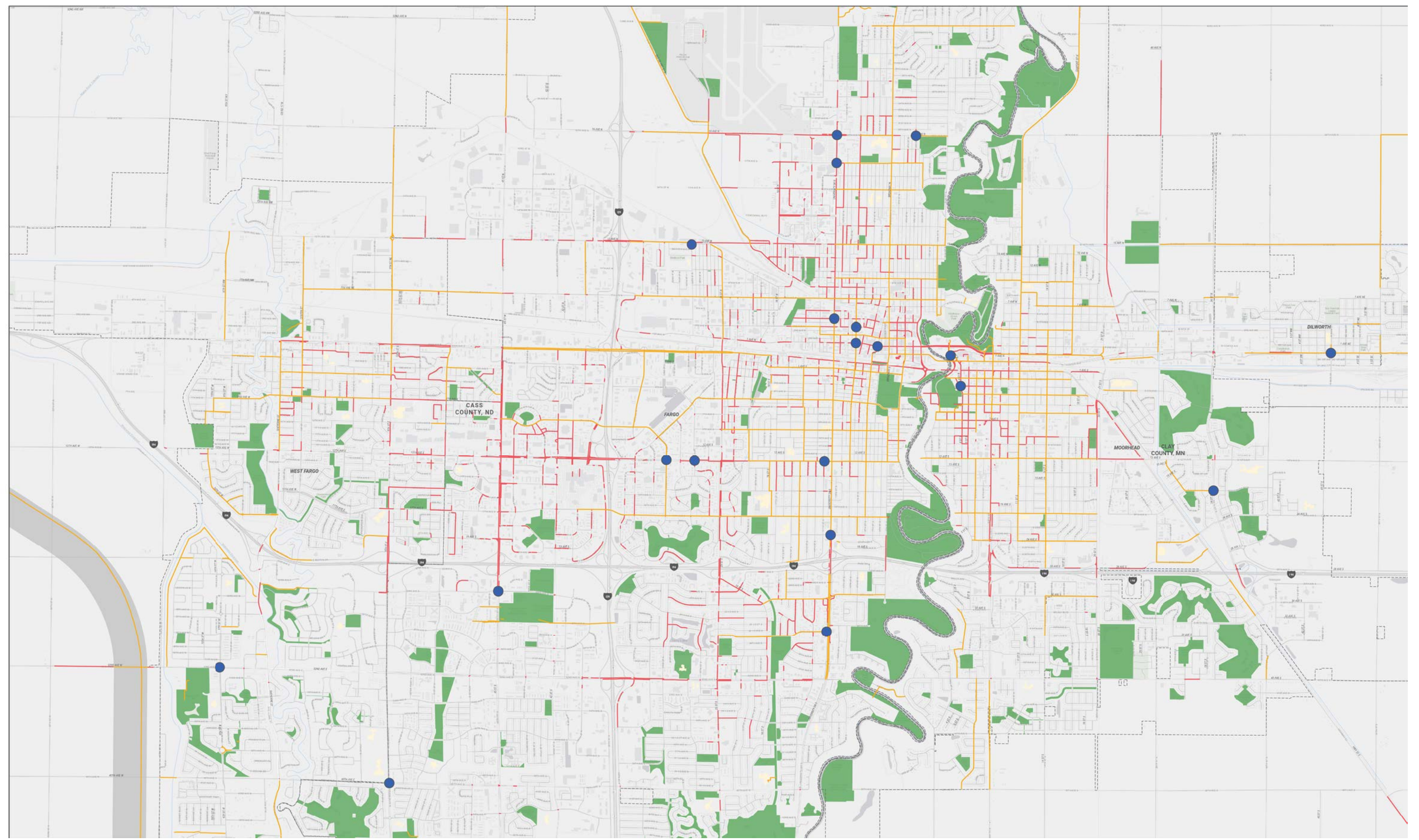


TABLE OF PEDESTRIAN IMPROVEMENTS

| Location | Marked Crosswalk | Raised Crosswalk | Curb Extension | Corner Radii Reduction | Raised Intersection | Median Refuge Island | Rectangular Rapid Flashing Beacon (RRFB) | Pedestrian Hybrid Beacon (PHB) | Full Signals | Road Right-sizing* | Accessibility Check / Upgrades** | Notes |
|--------------------------------------|------------------|------------------|----------------|------------------------|---------------------|----------------------|--|--------------------------------|--------------|--------------------|----------------------------------|---|
| University Dr & 19th Ave N (Fargo) | E | | | X | | E | | | E | X | X | Opportunity to convert dedicated right turn lanes to combined through-right lanes; corner radii reduction especially relevant on NE, NW, and SW corners |
| 3rd St & 19th Ave N (Fargo) | X | | X | | | | | | | | X | |
| University Dr N & 17th Ave N (Fargo) | E | | | X | | | | | E | X | X | |
| 29th St & 12th Ave N (Fargo) | E | X | X | X | | E | | | E | | X | Curb radii reductions can reduce crossing distances to existing median refuge island across 29th St |
| University Dr & 4th Ave N (Fargo) | X | | | X | | | | | | X | X | Opportunity to install protected intersection as a form of curb radii reduction to benefit pedestrians and bicyclists |
| 10th St & 3rd Ave N (Fargo) | X | | X | | | | | | | | X | |
| Roberts St & 1st Ave N (Fargo) | E | | X | | | | | | E | | X | Curb extensions can reduce the degree of intersection offset |
| 3rd St N and 4th St N (Moorhead) | X | | | X | | X | | | | X | X | Install crosswalks to promote pedestrian crossings on the southern side of 4th St N across 3rd St N; modify the existing median to accommodate a pedestrian refuge island; move the curb cut and ramp on the western side of 3rd St N accordingly |
| US Hwy 10 & Main St (Dilworth) | X | | X | | | X | | | E | X | X | Opportunity for a median refuge island or curb extensions |
| 3rd St, 4th St, & 3rd Ave (Moorhead) | E/X | X | X | | X | | | | | | X | Install ADA-compliant, high-visibility crossing of northern leg of 3rd St S; remove curb ramp leading to Daily Park |

| Location | Marked Crosswalk | Raised Crosswalk | Curb Extension | Corner Radii Reduction | Raised Intersection | Median Refuge Island | Rectangular Rapid Flashing Beacon (RRFB) | Pedestrian Hybrid Beacon (PHB) | Full Signals | Road Right-sizing* | Accessibility Check / Upgrades** | Notes |
|---------------------------------------|------------------|------------------|----------------|------------------------|---------------------|----------------------|--|--------------------------------|--------------|--------------------|----------------------------------|---|
| 32nd St & 13th Ave (Fargo) | E/X | | | X | | E | | | E | X | X | |
| Gateway Dr & 13th Ave S (Fargo) | E/X | | | X | | E | | | E | X | X | |
| 13 ½ St & 13th Ave (Fargo) | X | | X | X | | | | | | | X | |
| 34th St & Ridgewood Blvd (Moorhead) | E/X | | X | X | | X | X | X | X | X | X | |
| University Dr & 18th Ave S (Fargo) | E | | | X | | X | | | E | X | X | Install median refuge islands across University Dr |
| 45th St & 23rd Ave S (Fargo) | E/X | | | X | | E | | | E | X | X | |
| University Dr & 27th Ave S (Fargo) | E/X | | | X | | E | | | E | X | X | Implement curb radii reductions on curbs between University Dr southbound and the frontage road |
| Veterans Blvd & 40th Ave (West Fargo) | E | | | X | | E | | | E | X | X | |
| 10th St & 1st Ave N (Fargo) | E/X | X | X | X | X | | | | E | X | X | |
| 9th St W & 32nd Ave W (West Fargo) | E | | | X | | X | | | | X | X | |

Key: E = existing; X = recommended / for consideration; E/X = partially existing, but opportunities remain for expansion (e.g., crosswalk markings exist but could be upgraded; curb extension exists on one corner of intersection, but could be implemented on other corners)

* "Road right-sizing" refers to the reduction of lanes (and/or lane widths) to achieve geometries that better align with community needs, including those around multimodal transportation, accessibility, safety, comfort, and sustainability.

** "Accessibility Check / Upgrades" refers to an assessment of a location's current accessibility, including but not limited to whether all features of the intersection meet ADA standards. Where components of an intersection do not meet ADA standards or do not achieve accessibility for "All Ages and Abilities", corresponding improvements should be included alongside other intersection treatments.

Policy and Program Recommendations

Policies, including both those that explicitly target walking and biking as well as those that influence walking and biking via their effects on the built environment and use of automobiles, profoundly shape the availability, accessibility, and utility of different transportation modes. Programs, meanwhile, can contribute to individuals' awareness and knowledge of walking and biking, helping to build a culture of walking and biking. The following are recommended policies and programs for the Fargo-Moorhead metro area. Please see Appendix E for a full review and report of these policies and programs.

POLICIES

Local ordinances and state statutes define the legal landscape for pedestrians, bicyclists, and drivers.

- Eliminate or significantly reduce minimum vehicle parking requirements across the area for all land use types. Consider vehicle parking maximums. Ensure that requirements are applied equitably across use-types.
- Consider implementing requirements

for bicycle facilities for commercial, office, and multi-family residential developments, including bicycle parking and shower and locker facilities.

- Work with state governments to update statutes to provide the right-of-way to pedestrians at all unsignalized intersections and at all marked mid-block crossings, regardless of the presence of alternate facilities (e.g., pedestrian tunnels and bridges).
- Work with state governments to update statutes to allow pedestrians to cross mid-block, including when abutting intersections are signalized and no marked crosswalk is present.
- Allow bicyclists to use all road facilities including sidewalks, where necessary, while maintaining pedestrian right-of-way on sidewalks.
- Adopt model ordinance language specifying where bicyclists may ride when in the road.

PROGRAMS

Education programs relating to walking and biking in the area were identified by Metro COG staff for this review, including: Walk! Bike! Fun!; the Bicycle Alliance of MN (BikeMN); I Got Caught!; and Bicycle Information, Knowledge, and Education in Fargo-Moorhead (BIKE FM). Each program was evaluated along four topic areas, including the program's (1) audience; (2) coverage; (3) effectiveness; and (4) equity. The results of this review are intended to help Metro COG, other organizations funding and implementing these programs, and members of the public in planning for future bike and pedestrian education efforts within the region. Feedback from community engagement activities has also been included, where relevant.



Bike parking provided for private development

- Coordinate with Walk! Bike! Fun! (WBF) to implement the curriculum in Minnesota- and North Dakota-based schools within the metropolitan area. Provide supplemental funding to schools to support staff training, staff time, and resource needs (e.g., bike fleets). Pursue evaluation opportunities, including process and outcome evaluations that help inform program improvements and quantify the program's effects.
- Coordinate with other local and regional organizations, including local bike shops, local bicycling clubs, and BikeMN, to co-develop bicycling events, resources, and communications for the region. Consider whether BIKE FM could be an effective home for this work, or whether BIKE FM's work could be more effectively incorporated under an umbrella initiative or organization.
- Work with existing education partners to create an equitable program to encourage safe cycling for children. This could involve renaming and adapting the existing "I Got Caught" program to focus on equitably providing cycling safety education.

Process Improvements

Supporting administrative agencies and their staff in their work around active transportation is critical to improving multiple domains of active transportation systems. Agencies and staff also have unique insight into opportunities for and barriers to developing better active transportation infrastructure and related policies. Interviews with public agency staff drove the recommendations below.

- Support land use planning practices that discourage low-density greenfield development on the urban fringe and that prioritize infill development. Metro COG should promote the above land use policy goals when conducting planning studies, allocating transportation funding, and in all other planning efforts.
- Focus on communicating the myriad benefits of investments in bicycle and pedestrian infrastructure, especially communicating the economic benefits, to generate greater support from potential stakeholders. Evaluation to better quantify the benefits of existing and proposed active transportation projects can support these communications goals.
- Continue to support inter-agency and inter-disciplinary coordination

and collaboration around bicycle and pedestrian work. This could involve prioritizing these types of meetings and relationships, for example, through a walk audit or bike tour with elected officials and representatives from different disciplines. Because active transportation bridges planning, engineering, and public health, among other spheres, and because relevant infrastructure systems and travel patterns span municipal, state, and regional borders, these types of collaboration are critical.

- Develop strategies, processes, and resources to support member jurisdictions in pursuing and winning competitive funding awards from state and federal sources. This could include, for example, developing regional data products that demonstrate the value of and need for active transportation projects; providing grant writing expertise to member jurisdictions; and hosting technical assistance trainings for member jurisdictions.

Active Transportation and Land Use

How land is developed, including factors such as type of use (residential, commercial, open space), density of development, facades, and setbacks, is directly related to transportation. Compact, mixed-use development patterns facilitate walking, bicycling, and public transit and make driving less appealing. At the same time, transportation investments, such as shared use paths and high-frequency bus routes, can make more compact development feasible, because less space needs to be dedicated to moving and storing vehicles. Additionally, compact mixed-use development can save jurisdictions money due to the need for less infrastructure and services while saving citizens money due to the high cost of driving.

More compact, mixed-use development directly aligns with the vision and goals of this plan because it promotes walking and bicycling and reduces the environmental and safety harms caused by driving. While this plan is not itself a land use plan, it relates to existing land use plans and regulations, including Metro COG jurisdictions' comprehensive plans and zoning and subdivision ordinances, among others.



The painted bike lane along 7th Ave in Moorhead is no longer visible; periodic re-application of paint is required to maintain this facility.

Implementation

Determining near-term priority projects will help staff, stakeholders, and community members better understand and evaluate next steps leading to implementation. This Plan identifies 15 bicycle and 20 pedestrian priority projects for which cost estimates and have been produced. In addition, typical sections have been developed for the bicycle priority projects, which will provide an understanding of the potential for each project. The bicycle network priority projects are shown on the map on page 52, while the priority pedestrian improvements are shown on the map on page 37.

The methodology used for determining pedestrian priorities is described in the Recommendations section (Page 36). Two methods were used to establish bicycle priority projects. This was done using both technical analysis and public feedback.

- The technical analysis priority projects were identified using the median score from the Priority Investment Areas Analysis (described in the Existing Conditions section of this Plan) for each segment of the overall project. The Priority Investment Areas Analysis weighted each of the component analyses

according to the Plan's guiding principles and objectives. These scores were then ranked, with the highest ranked projects being the highest priorities.

- The public priorities included all projects where at least three respondents ranked that project as a priority from the public engagement survey.

Some of the highest scoring technical and public priorities are already moving forward to implementation or are being addressed through separate studies. As such, these projects that are already in progress did not have cost estimates or typical sections produced, but are still shown on the priorities map on page 52 for context. Projects shown with a number on the map have cost estimates and/or typical sections, which can be cross-referenced with the projects listed in the table on page 47 or in Appendix H.

This Plan is a high-level strategy which does not recommend specific facility types for implementation. For the purposes of establishing planning-level cost estimates and typical sections, the Design Guidelines were used to inform the possible facility type for each priority project based on the traffic

speed and volume, and road context. More detailed study of the facility type that is appropriate for each project should occur before implementation.

The cost estimates are based on general assumptions for the cost to implement each facility type or improvement per mile or intersection, which were then applied to the length of each of the bicycle and pedestrian priority projects. The cost estimates are high level and do not include grading, drainage, utilities, or landscaping. The cost estimates for each bicycle priority project are included in the table on page 47. Cost estimates for each pedestrian priority project can be found in the table on page 49.

The project team developed typical sections of the priority bicycle projects, with the exception of the Heartland Trail and Red River Trail East between 32nd Ave S and 40th Ave S as they have variable or unusual configurations. The typical sections show possible bicycle facilities, vehicular lane widths, sidewalks, and their dimensions within the overall right-of-way. The typical sections are included in Appendix H.

There are several options for implementing active transportation facilities. Implementation can occur as part of planned capital works projects, including road resurfacing or road

reconstruction. A road reconstruction may provide an opportunity to move curbs and alter drainage, utilities, or other elements within the right-of-way, which will impact the design of the proposed facility. A road resurfacing project will not alter existing curbs and drainage, and there will likely be less opportunity to move or alter road elements to accommodate the proposed facility. Demonstration, quick-build, and interim implementation can be used to implement different road and facility designs in a shorter timeframe. Quick-build and interim facilities are designed to be altered or removed, while demonstration projects are intended to test out a design temporarily.

TABLE OF BICYCLE PRIORITY COST ESTIMATES

| Project Number | Project Location and Extents | Facility Guidance | Project Length (ft/ mi) | Project Costs (2022 dollars) |
|----------------|---|--|-------------------------|------------------------------|
| 22 | 7th Ave NE from Center St to 45th St N (West Fargo / Fargo) | Install shared use path on southern side of roadway | 9500/1.80 | \$1,839,600 |
| 28 | 1st St from 7th Ave E to Main Ave E (West Fargo) | Separated on-road bicycle facilities on each side of road. Eliminate eastern parking lane | 2700/.17 | \$71,400 |
| 50 | Main St N from Park Dr to Wall Ave (Horace) | Eliminate parking on western side of Main St; install painted bike lanes on each side of road | 1300/.25 | \$35,000 |
| 71 | New segment from intersection of 63rd St S and 81st Ave S due west (Horace) | Shared use path along existing residential street(s) with a right-of-way of 70 ft. Green buffer between roadway and path | 8000/1.52 | \$1,489,600 |
| 198 | New segment from 40th Ave S along river to S 32nd Ave (Moorhead) | Shared use path | 7800/1.48 | \$1,450,400 |
| 406 | University Dr from 13th Ave S to 4th Ave N (Fargo) | Remove one driving lane, install on-road separated one-way bicycle facility | 6800/1.29 | \$361,200 |
| 440 | 32nd St S from 17th Ave S to Fiechtner Dr S (Fargo) | Replace existing parking lane and re-allocate lanes and lane widths to accommodate appropriate-width bicycle facilities | 3900/.74 | \$103,600 |
| 450 | Main Ave from 45th St S to 18th St S (Fargo) | Convert the existing sidewalk on the south side of the roadway to a shared use path, widen existing sidewalk | 23500/4.45 | \$4,512,200 |

| Project Number | Project Location and Extents | Facility Guidance | Project Length (ft/mi) | Project Costs (2022 dollars) |
|----------------|--|--|------------------------|------------------------------|
| 470 | 10th St S from 13th Ave S to 4th Ave N (Fargo) | Remove one driving lane, install on-road separated one-way bicycle facility, widen existing sidewalk | 6900/1.31 | \$366,800 |
| 480 | Broadway from 1st Ave S to 35th Ave N (Fargo) | Separated on-road bicycle facilities on each side of road. Replace existing parking lane and re-allocate lanes and lane widths to accommodate appropriate-width bicycle facilities | 19400/3.67 | \$513,800 |
| 521 | 7th Ave N from 38th St N to Elm St N (Fargo) | Eliminate shared turn lane, reallocate lane space, separated on-road facilities on each side of road, widen existing sidewalk | 14700/2.78 | \$1,167,600 |
| 733 | S 21st St from Center Ave to 2nd Ave N (Moorhead) | Expand sidewalk on eastern side of road to create a shared use path | 700/.13 | \$135,800 |
| 906 | 7th St N from E Center Ave to 3rd Ave N (Dilworth) | Install shared use path, linking to existing facilities | 900/.17 | \$180,600 |
| 950 | Heartland Trail (Moorhead and Dilworth) | 10' wide paved path, 2 ft shoulders (gravel), 5 ft unpaved treadway | 83000/15.72 | \$15,405,600 |
| 5005 | 9th Ave S from 45th St S to Fiechtner Dr S (connects to Project #440; Fargo) | Separated on-road bicycle facilities on each side of road. Eliminate southern parking lane, widen existing sidewalk | 7200/1.38 | \$193,200 |

General notes:

- 20% design contingency and 25% engineering costs are included in the estimates
- Planning level estimates do not quantify grading, minor storm sewer modification, and removals, but these should be covered by estimate and contingency figures
- Right-of-way costs and major utility modifications are not included in the cost estimates

TABLE OF PRIORITY PEDESTRIAN IMPROVEMENT COST ESTIMATES

| Project Location | Existing Conditions | Recommended Improvements | Project Costs (2022 dollars) |
|--------------------------------------|---|---|------------------------------|
| University Dr & 19th Ave N (Fargo) | Marked Crosswalk, Full Signals, Median Refuge | Corner Radii Reduction, Road Right-sizing, Accessibility Check Upgrades | \$23,925 |
| 3rd St & 19th Ave N (Fargo) | | Marked Crosswalk, Curb Extension, Accessibility Check Upgrades | \$36,250 |
| University Dr N & 17th Ave N (Fargo) | Marked Crosswalk, Full Signals | Corner Radii Reduction, Road Right-sizing, Accessibility Check Upgrades | \$8,700 |
| 29th St & 12th Ave N (Fargo) | Marked Crosswalk, Full Signals, Median Refuge | Raised Crosswalk, Corner Radii Reduction, Curb Extension, Accessibility Check Upgrades | \$37,700 |
| University Dr & 4th Ave N (Fargo) | | Marked Crosswalk, Corner Radii Reduction, Road Right-sizing, Accessibility Check Upgrades | \$20,300 |
| 10th St & 3rd Ave N (Fargo) | | Marked Crosswalk, Curb Extension, Accessibility Check Upgrades | \$15,950 |
| Roberts St & 1st Ave N (Fargo) | Marked Crosswalk, Full Signals | Curb Extension, Accessibility Check Upgrades | \$13,050 |
| 3rd St N and 4th St N (Moorhead) | | Marked Crosswalk, Corner Radii Reduction, Median Refuge Island, Road Right-sizing, Accessibility Check Upgrades | \$52,925 |

| Project Location | Existing Conditions | Recommended Improvements | Project Costs (2022 dollars) |
|--------------------------------------|---|---|------------------------------|
| US Hwy 10 & Main St (Dilworth) | Full Signals | Marked Crosswalk, Curb Extensions, Median Refuge Island, Road Right-sizing, Accessibility Check Upgrades | \$53,650 |
| 3rd St, 4th St, & 3rd Ave (Moorhead) | Partial Marked Crosswalk | Raised Crosswalk, Curb Extensions, Raised Intersection, Accessibility Check Upgrades | \$52,200 |
| 32nd St & 13th Ave (Fargo) | Partial Marked Crosswalk, Full Signals, Median Refuge | Marked Crosswalks, Corner Radii Reduction, Road Right-sizing, Accessibility Check Upgrades | \$31,900 |
| Gateway Dr & 13th Ave S (Fargo) | Partial Marked Crosswalk, Full Signals, Median Refuge | Marked Crosswalks, Corner Radii Reduction, Road Right-sizing, Accessibility Check Upgrades | \$31,900 |
| 13 ½ St & 13th Ave (Fargo) | | Marked Crosswalk, Corner Radii Reduction, Road Right-sizing, Accessibility Check Upgrades | \$18,850 |
| 34th St & Ridgewood Blvd (Moorhead) | Partial Marked Crosswalk | Marked Crosswalks, Curb Extension, Corner Radii Reduction, Median Refuge Island, RRFB, PHB, Full Signals, Road Right-sizing, Accessibility Check Upgrades | \$21,750 |
| University Dr & 18th Ave S (Fargo) | Marked Crosswalk, Full Signal | Corner Radii Reduction, Median Refuge Island, Road Right-sizing, Accessibility Check Upgrades | \$37,700 |

| Project Location | Existing Conditions | Recommended Improvements | Project Costs (2022 dollars) |
|---------------------------------------|---|---|------------------------------|
| 45th St & 23rd Ave S (Fargo) | Partial Marked Crosswalk, Full Signals, Median Refuge | Marked Crosswalk, Corner Radii Reduction, Road Right-sizing, Accessibility Check Upgrades | \$30,450 |
| University Dr & 27th Ave S (Fargo) | Partial Marked Crosswalk, Full Signals, Median Refuge | Marked Crosswalk, Corner Radii Reduction, Road Right-sizing, Accessibility Check Upgrades | \$30,450 |
| Veterans Blvd & 40th Ave (West Fargo) | Marked Crosswalk, Full Signals, Median Refuge | Corner Radii Reduction, Road Right-sizing, Accessibility Check Upgrades | \$18,850 |
| 10th St & 1st Ave N (Fargo) | Partial Marked Crosswalk, Full Signals | Marked Crosswalk, Corner Radii Reduction, Road Right-sizing, Accessibility Check Upgrades | \$20,300 |
| 9th St W & 32nd Ave W (West Fargo) | Marked Crosswalk | Corner Radii Reduction, Median Refuge Island, Road Right-sizing, Accessibility Check Upgrades | \$42,500 |

General notes:

- 20% design contingency and 25% engineering costs are included in the estimates
- Planning level estimates do not quantify grading, minor storm sewer modification, and removals, but these should be covered by estimate and contingency figures
- Right-of-way costs and major utility modifications are not included in the cost estimates

BIKE NETWORK PRIORITY PROJECTS

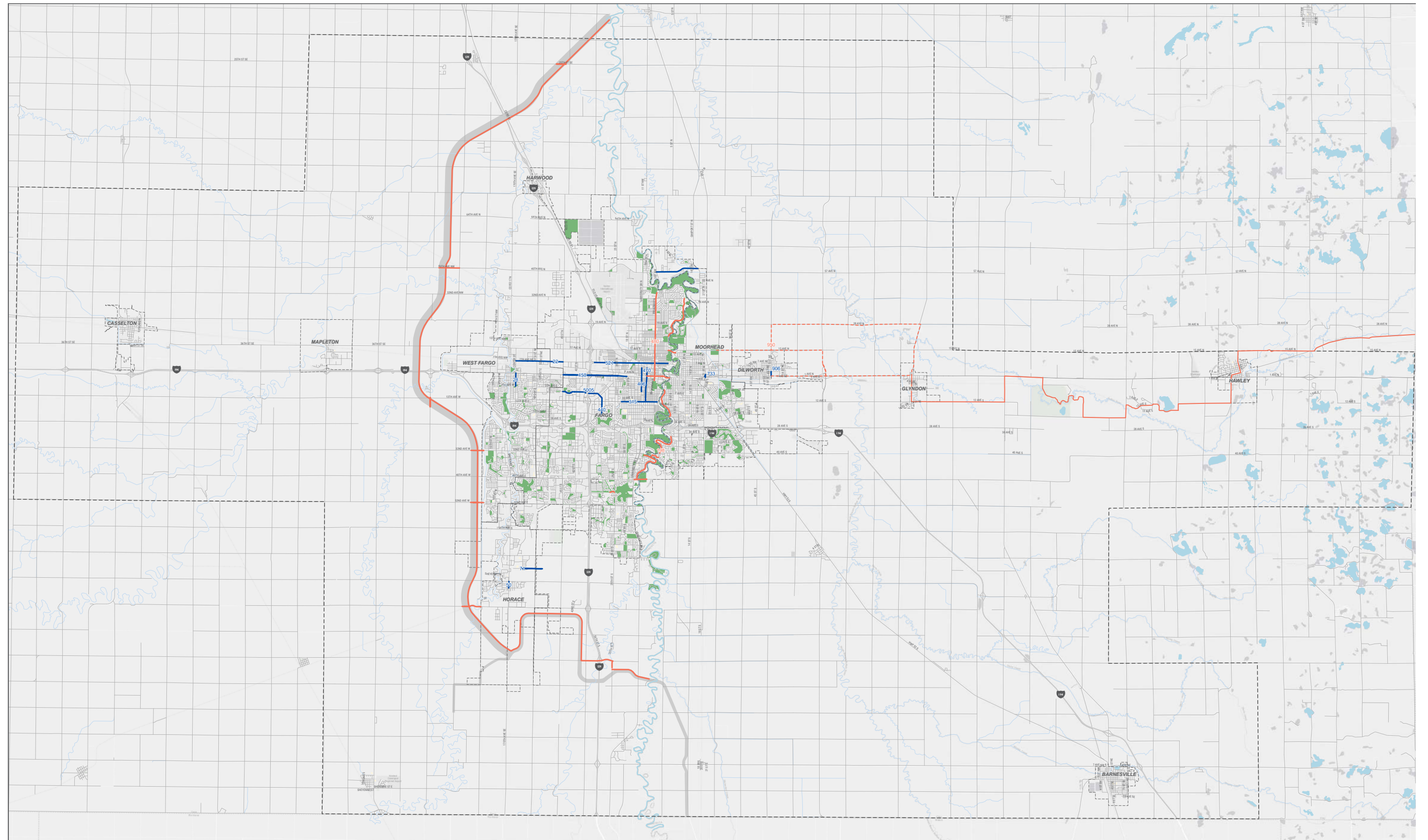
FARGO-MOORHEAD METROPOLITAN BICYCLE AND PEDESTRIAN PLAN

Recommendations

- Technical Analysis Priority Projects
- Public Priority Projects
- - - Heartland Trail Routing Options

Context Features

- Fargo-Moorhead COG Boundaries
- FM Flood Diversion Area
- Parks
- Schools



0 2.5 5 MILES



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Appendices

Appendices are provided as separate attachments to reduce file size and simplify organization and readability of this report.

APPENDIX A - ENGAGEMENT SUMMARY - PHASE I

APPENDIX B - ENGAGEMENT SUMMARY - PHASE II

APPENDIX C - EXISTING CONDITIONS MEMO

APPENDIX D - EXISTING CONDITIONS MAPS

APPENDIX E - POLICY AND PROGRAM REVIEW MEMO

APPENDIX F - PROCESS EVALUATION MEMO

APPENDIX G - DESIGN GUIDELINES

APPENDIX H - TYPICAL SECTIONS