

SUN PRAIRIE IN MOTION

ACTIVE TRANSPORTATION PLAN

FINAL DRAFT



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1 INTRODUCTION

The purpose of the *Sun Prairie in Motion Active Transportation Plan* (the Plan) is to make walking, biking, and rolling in our city easier and safer. It will help guide City staff and elected officials as they decide where to build new bikeways, paths, and sidewalks. And finally, it helps focus investment in new infrastructure in the areas that most need it.

1.1 Why Does Sun Prairie Need an Active Transportation Plan?

The City of Sun Prairie enjoys an extensive bicycling network of over 48 miles of off-street paved paths and 20 miles of on-street bike lanes. Most of the streets in the city also have sidewalks on one or both sides of the street, providing space for people walking, pushing children in strollers, or using wheelchairs to get around. Moreover, the level of interest in both bicycling and walking as a form of transportation and recreation has grown in Sun Prairie, especially since the onset of the COVID-19 pandemic. This active transportation plan will help the City in a number of ways.

A Plan for Developing Neighborhoods

Sun Prairie is the second largest city in Dane County, home to over 36,000 residents in 2020, and is among the fastest-growing communities in Wisconsin. The City has been able to capitalize on the rapidly-developing areas on the outskirts of the city by requiring developers to include paths and sidewalks as part of new development. However, those paths often terminate at the edge of the neighborhood, waiting for the adjacent property parcel to be developed. This Plan will identify where developers must continue paths and on-street bicycle facilities as part of development, with a focus on connecting to surrounding communities.



A teenager rides a bike on a Main Street sidewalk. City ordinance prohibits biking on sidewalks in downtown Sun Prairie but there are few alternative ways for bicyclists to get through downtown currently.

Guidance for When Trade-offs are Needed

In the older part of the city, many streets (such as Main Street above) do not have adequate or safe space for people walking, biking, and rolling. When those streets are reconstructed or when new buildings are built, staff and elected officials must make trade-offs between space for motor vehicles, and dedicating space for sidewalks or bike lanes. This Plan will highlight the streets where sidewalks, bike lanes, and paths are highly important and should be prioritized over other uses of the public right-of-way.

What do we mean by "rolling"?

We say "walking, biking and rolling" when talking about the travel modes considered in this Plan. Early on, Sun Prairie residents told us that "active transportation" seemed to exclude people using mobility scooters. "Rolling" includes devices such as mobility scooters and wheelchairs, as well as active modes such as skateboards or folding scooters.

Facility Selection Tools

Many of the infrastructure recommendations in this plan will be built as streets are reconstructed or when new development takes place. When that happens, the City will need to decide what kinds of bikeways or pedestrian infrastructure are safe and appropriate: a bike lane, or a shared-use path? A marked crosswalk, curb extensions, or both? The Design Toolkit for Walking, Biking, and Rolling in Chapter 4 provides design guidance and policy to decide what facility is best suited for each context.

A List of High-Priority Projects

Some projects are so critical for safety or access to destinations that the City should undertake them even if there is not a current opportunity to piggyback on another street project. This plan used an objective, data-driven prioritization process to identify high-priority projects that City staff should actively pursue with local funding, applications for federal or state grants, and partnerships with the Wisconsin Department of Transportation (WisDOT).

Updates to Policies and Programs

Changing policies and ordinances will ensure the City has the right tools in place to take advantage of opportunities as they arise. When land is subdivided or when a street is repaved or reconstructed, having policies in place that require or facilitate the construction of paths or sidewalks helps promote better bicycle and pedestrian networks over the long term. Programs that refocus enforcement efforts, encourage walking and biking, or dedicate funding towards maintenance can also ensure the City meets the long-term goals of this Plan.

Vision and Goals

The vision and goals define what we want Sun Prairie to be like in the future and directly shaped the recommendations of this Plan. The vision and goals were developed and refined from a review of past Sun Prairie plans, input from the general public, and feedback from the project Steering Committee. The vision and goal statements received strong public support during the development of this plan.

Vision

Sun Prairie has safe walking, biking, and rolling paths that connect all residents to the places they want and need to go.



Increase Walking and Biking

Increasing the number of people walking and bicycling benefits residents' health and City sustainability goals. The City can achieve this goal by constructing sidewalks and bikeways where people are likely to use them.



Improve Safety

This Plan recommends infrastructure that will make it safer for people walking and biking, and prioritizes projects in areas where crashes have occurred.



Promote Equity

Past decisions have led to streets and highways without safe places to walk in some of the lowest-income parts of the City. Residents with low incomes are more likely to depend on active transportation to get around: this Plan prioritizes investments in the areas where residents most need it.

1.2 Benefits of Building Active Transportation Infrastructure

Having a complete, safe, and comfortable walking, biking, and rolling network brings many benefits to Sun Prairie residents. Benefits include improved safety, more variety of and freedom in transportation choices, economic growth, improved public health outcomes, equitable access to transportation and recreation, and environmental sustainability.

Safety

The safety of pedestrians and bicyclists is of growing concern across the United States. Preliminary 2022 data traffic fatalities show that growth in pedestrian fatalities has outpaced rates of all other traffic deaths. Nationwide, pedestrian fatalities have continued to climb since the beginning of the COVID-19 pandemic: a 28 percent increase in pedestrian fatalities is reported from 2021 to 2022.¹ Bicycle and pedestrian infrastructure, including paths, sidewalks, bike lanes, and safety infrastructure at street crossings, can provide people with safer places to travel and recreate.

Equitable Access to Transportation and Recreation

Comfortable and accessible walking, biking, and rolling facilities provide a host of quality-of-life benefits. They increase the number of travel options for everyone and can lead to a sense of independence for seniors, young people, and others who cannot or choose not to drive. Providing a high-quality active transportation network is important for Sun Prairie residents who do not have full access to a motor vehicle. This includes people who are under 16 years old, unlicensed adults, suspended drivers, and people who live in households with more drivers than motor vehicles. Shared-use paths also have the benefit of providing no- to low-cost recreation opportunities for families and low-income individuals.

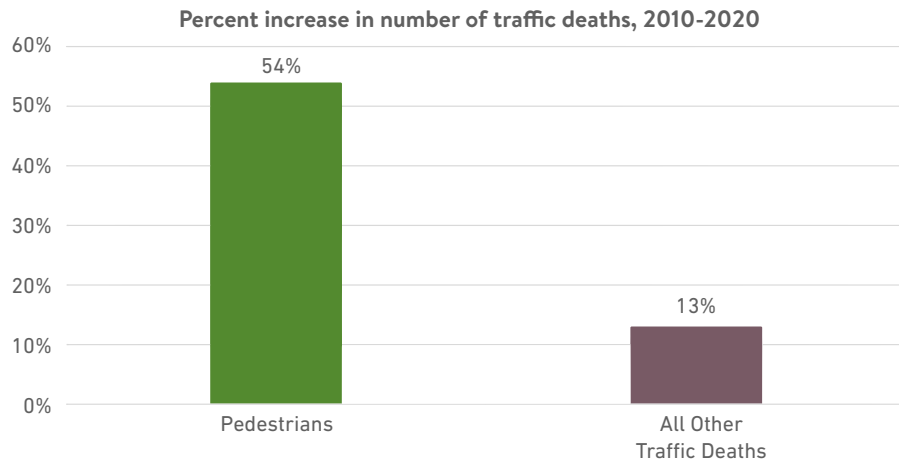
Access to Schools, Parks, and Other Destinations

Improving infrastructure for walking, biking, and rolling helps widen choice and access to schools, parks, jobs, and other important destinations. Improved bicycle and pedestrian conditions give people more options, reduce reliance on car ownership, and improve safety for people who do not have access to a motor vehicle. High-quality walking and biking facilities also provide a safe alternative to vehicle drop-offs for children traveling to and from school or families walking to their neighborhood park.

Attracting Visitors and Retaining Residents

A robust bicycle and pedestrian network has the potential to provide economic gains for communities by attracting tourists and attracting and retaining residents, including employees and families. There is broad consensus across the country that investing in infrastructure for walking, biking, and rolling produces a positive return on investment. This is especially true when it comes to paths, which can serve as attractions for visitors. Path-based tourism can be an economic boon for many small communities, supporting local businesses, creating jobs, and increasing property values.² Local spending by active users (visitors and locals alike) provide economic benefits for businesses.³

Figure 1. Pedestrian deaths in the United States have been increasing faster than all other traffic fatalities
(source: Governors Highway Safety Association)



Benefits to Local Business

Businesses often overestimate the importance of car parking and underestimate the importance of biking access. A recent study out of La Crosse, Wisconsin projected the economic benefits over time if the city expanded bicycle infrastructure (i.e., bike lanes, paths, and low-stress side streets) at over \$280 million.⁴ A Seattle study found that replacing motor vehicle travel or parking lanes with bike lanes had either neutral or positive economic benefit.⁵ Research also has found that people biking to businesses tend to spend more per capita than car owners.^{6,7}

Physical Health

According to the U.S. Health and Human Services Department's (USHHS) Physical Activity Guidelines for Americans, 150 minutes of moderate-intensity aerobic activity (for example, brisk walking) each week reduces the risk of many chronic diseases and other adverse health outcomes.⁸ For young people ages 6-17 the USHHS recommends participating in at least 60 minutes of physical activity every day. Engaging in physical activity beyond these amounts can impart additional health benefits.

Being overweight increases an individual's risk for many chronic diseases and certain cancers.⁹ Increased opportunity for recreation and destination-oriented trips using active modes of travel are key to reducing obesity and, by extension, the risk for developing chronic diseases. A 20-year study of 5,115 people in four U.S. cities found that walking and biking to work are associated with greater physical fitness among both men and women. The study called for strategies to enable and encourage active commuting interventions to reduce obesity and improve cardiovascular disease risk.¹⁰

Research has also found that the health benefits of bicycling instead of driving far outweigh the risks.¹¹ For example, one study found that on average, individuals who shifted from driving to bicycling gained an estimated three to 14 months of life expectancy, compared to five to nine days lost due to traffic crashes and inhaled air pollution.¹²

Mental Health

Physical activity, including walking and biking, can help prevent or treat some mental health conditions. Physical activity reduces depression, can improve the quality of sleep, and has been shown to improve cognitive function for older adults.¹³ Active transportation can also improve social conditions in communities, which contributes to positive mental well-being among residents. While there may be many reasons people feel socially isolated, land-use and transportation systems designed around the automobile can exacerbate these feelings. Car dependence reinforces solitary lifestyles and reduces opportunities for positive social interaction in public spaces.¹⁴

Environmental Benefits

Facilities for walking, biking, and rolling offer environmental benefits to the communities they serve in several ways. Path corridors can improve air and water quality, mitigate floods, conserve wildlife habitat, and provide carbon sequestration and storage. The expanding and connecting trails, bikeways, and sidewalks also has the potential to shift trips from driving to walking or biking. This shift can help to reduce the amount of motor vehicle travel, the need for added capacity, and associated carbon emissions.¹⁵



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2 COMMUNITY INPUT

Community input was an essential part of the plan development process. Listening to the concerns and ideas of people in Sun Prairie improved the quality of the Plan recommendations and instills confidence that the community will support implementation.

2.1 Listening to City Residents and Stakeholders

The planning process used several methods to gather input from residents and stakeholders. The process divided public engagement activities into three phases: Identifying Barriers and Needs (phase one); Testing Goals and Recommendations (phase two); and Reviewing Draft Plan (phase three).

2.2 Steering Committee

A committee comprised of community stakeholders, representatives of non-profits, and government agencies provided guidance and oversight at key points in the planning process. The Steering Committee members are listed in the Acknowledgments at the beginning of this document. The Steering Committee met four times during the development of this Plan. All meetings were in a virtual/online format:

- Meeting 1: September 1, 2022. Topics included an overview of the project and planning schedule, and a review of the public participation plan
- Meeting 2: November 29, 2022. Topics included a review of the existing conditions report and the public input in phase one
- Meeting 3: April 27, 2023. Topics included a discussion of the draft vision and goals, facility selection toolkit, and draft infrastructure recommendations
- Meeting 4: July 13, 2023. Topics included a discussion of the prioritization methodology and the draft program and policy recommendations.

Project Schedule



2.3 Identifying Barriers and Needs

The purpose of this first phase of public engagement was to raise awareness of the project, assess community values to work towards a vision and goals, and to identify needs and barriers. Four engagement methods were used during this phase:

- Online interactive map
- Group walk and bike ride
- Pop-up engagement at community events
- Focus Groups with African-American and Latino Sun Prairie residents

Online Interactive Map

The project team created an online community input map to gather location-specific public comments for the Plan. Respondents were asked to review the current bicycle and pedestrian facilities and share feedback on where they currently bike, walk, and roll or where they wish they could travel. A demographic survey on the welcome page gathered data such as race, what area of Sun Prairie they live in, age, and disability status.

The map was viewed by 267 unique individuals, and 198 people filled out the demographic survey on the welcome page. The largest demographic group participating were white residents between 35-54 years old, which is not demographically reflective of Sun Prairie's diverse population. The survey had respondents from all parts of the city, although the area east of USH 151 and north of Windsor Street/STH 19 was slightly overrepresented.

The mapping responses identified several major corridors that were necessary corridors for walking, biking, and rolling but were not viewed as safe. The locations included:

- Windsor Street/STH 19
- West Main Street
- Bird Street
- North Thompson Road
- Grand Avenue/Reiner Road



The Fall 2022 group walk demonstrated the ways in which the narrow sidewalks along Main Street are difficult to navigate in a wheelchair and do not accommodate people walking side by side.

Additional comments focused on smaller issues across the city. Issues identified included the need for pedestrian connections to parks and schools, a desire for safe crossings across the USH 151, and suggestions for streets that need a lane removed and/or bike lanes added. A key request was for more bike connections to Madison.

Group Walk and Bike Ride

The consultant team hosted a group walk and bike ride in Fall 2022, meeting at Cannery Square in downtown Sun Prairie. Six participants attended the walk; one person stayed for the bike ride. Key observations included:

- Throughout downtown, but especially along Main Street, sidewalks are extremely narrow and difficult for people to walk side by side

- Accessibility issues were present at many intersections, ranging from missing curb ramps and curb ramps that were too steep
- Pedestrian signals were not set to provide the walk phase automatically at several intersections on Main Street/STH 19 (at Bristol Street and Grove Streets, specifically)
- The recreational bike loop in Sun Prairie has many jogs and turns and some safety concerns where it crosses STH 19; participants discussed City plans to add wayfinding signs along that loop

Pop-Up Engagement

Outreach through “pop-up” engagement (i.e. engaging community members at events or places they are going to for other reasons, rather than asking them to attend a meeting or event specific to the project) is a best practice for community outreach in planning. The consultant team and City staff conducted extensive pop up engagement during this first phase of public input:

- Sun Prairie Multicultural Fair
- Sunshine Place supper drive thru
- Sun Prairie Farmer’s Market
- Sun Prairie Moves hosted City staff at a special meeting at the Colonial Club

A desire for more connections to Madison also appeared here. The public input focused on roughly the same set of overarching themes as seen in the map:

- The need for pedestrian connections to parks and schools
- A desire for safe crossings across the USH 151
- Suggestions for streets that needed bike lanes added

Focus Groups

The consultant team held two focus groups with members of underrepresented populations during this first phase of public input:

- An in-person focus group was held on October 25, 2022 at Sunshine Place with members of the Sun Prairie Latino/a community.



A Fall 2022 focus group at the Sunshine Place was conducted in Spanish with members of the Sun Prairie Latino/a community.

- A virtual focus group was held on November 6, 2022 via Zoom with members of the Sun Prairie African American community.

Key themes from both focus groups were:

- Lack of awareness and utilization of current paths
- Need for equitable access to paths and walking and biking infrastructure: the newer and wealthier parts of the city disproportionately enjoy more paths versus the older and “poorer” parts of the city.
- Concern about the safety of biking and walking
- Need to promote culture of walking and biking

2.4 Testing Goals and Recommendations

The purpose of the second phase of public engagement was to test the draft vision and goals of the Plan and gather feedback and comments on the draft infrastructure recommendations of the Plan. Four engagement methods were used during this phase:

- Online survey
- Steering committee Input
- Presentations to various Sun Prairie Committees
- Focus group with African American Sun Prairie residents.

Online Survey

Between April 27th and through June 8th, the city hosted an online survey for residents and stakeholders. PDF maps of the draft recommended bikeway and path network, and the draft recommended sidewalk recommendations, were posted on the website for comment.

Respondents were asked to review and comment on the draft infrastructure recommendations and provide input on draft plan goals, modal hierarchy, and prioritization factors. Steering Committee members and other City staff were asked to help promote the survey with their networks and via posts on social media.

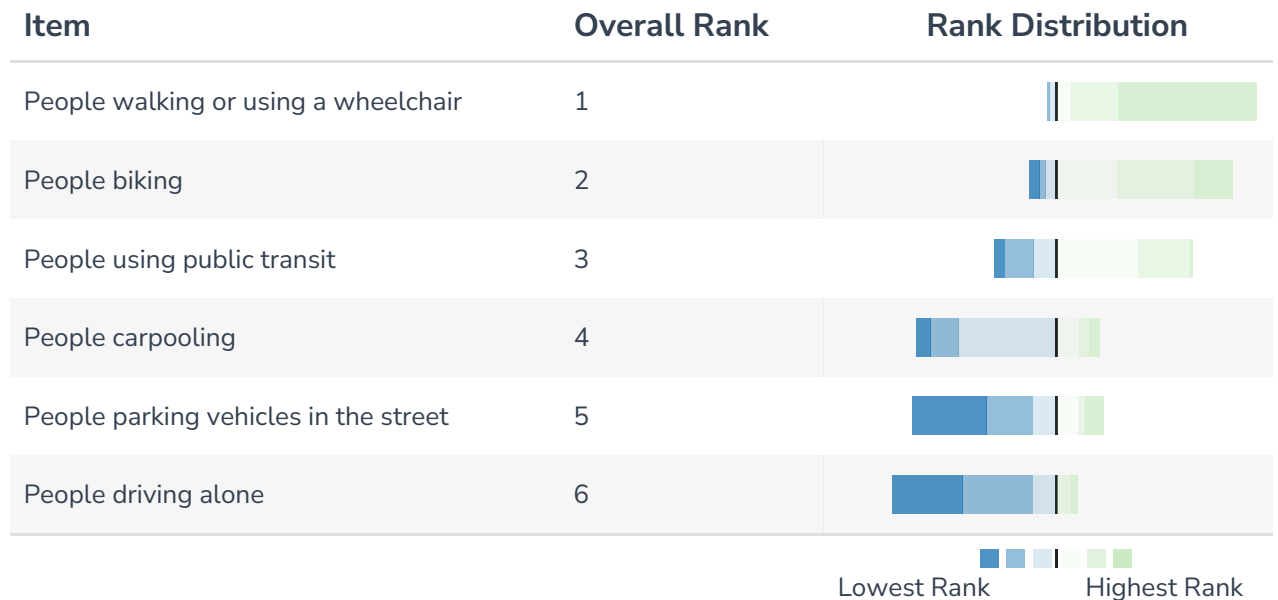
There were 58 respondents to the survey. 93% of respondents said they live in Sun Prairie while 29% and 14% responded that they work in Sun Prairie and visit Sun Prairie respectively.

The comments on the draft bicycle and path recommendations map were strongly supportive with about 69% of users stating they agreed or strongly agreed with the recommendations. Many of the comments related to this topic were related to the plan being a good step forward. Several commenters stated that safety was the reason that people don't use bicycles for transportation. There were also several requests for more connectivity between paths (fewer dead ends).

The response to the sidewalk recommendations map was supportive, with about 56% of users stating they agree or strongly agree with the recommended sidewalks. There was a strong desire for sidewalks, sidepaths and crossings. Safety for families and kids were the main reasons mentioned for their support.

The commentary on the plan goals and modal hierarchy were also strongly positive. As mentioned in Chapter 1, there was extremely strong support for the project goals of *Increase Walking and Biking*, *Improve Safety*, and *Promote Equity*, with 53% saying they strongly agree with the goals and an additional 25% saying they agree.

Figure 2. Survey respondents ranked the importance of six different street users in a spring 2023 online survey for this Plan.



When asked to rank who should hold the most importance when planning new streets, people walking or using a wheelchair was the clear top choice. Bicyclists were the clear second choice with another slightly smaller gap between them and transit users, which makes sense, given the very recent introduction of transit in Sun Prairie. The breakdown is shown in Figure 2.

Presentations to Committees

City and planning team staff presented on Plan progress to date and draft recommendations at four committee meetings:

- Transit Commission (April 19, 2023)
- Bike Subcommittee (May 22, 2023)
- Business Improvement District (May 4, 2023)
- Public Works Committee (June 3, 2023)

Committee members asked questions and provided comments for consideration. Key topics that were brought up during these meetings included:

- The plan should consider the needs of people with different physical abilities (ADA accessibility)
- Financial capacity should be a critical factor in the final plan
- The need to continue paths or pathways that currently end at dead-ends, due to the phasing of developments on the outskirts of the city
- Interest in sidewalk-level protected bike lanes on Main Street but concern about whether they

would be compatible with the sidewalk cafes desired by business owners on Main Street

African American Focus Group

The consultant team held one focus group meeting on April 24 via Zoom with members of the African American-identifying Sun Prairie community. The focus group shared several observations:

- Overall, the group supported the draft recommended paths and bikeways. They supported the focus on children, schools, and equity areas. They added that older adults should also be considered.
- There was concern about law enforcement using lack of helmets or behavior on paths to “punish” people.
- The group suggested implementing a program to provide bikes or bike repair for economically disadvantaged people in Sun Prairie.

2.5 Reviewing the Draft Plan

For the final phase of public input, the planning team staff shared drafts of this Plan with City of Sun Prairie oversight committees: the Bike Subcommittee of the Transit Commission; the Transit Commission, and the City Council. The following comments from committee members were incorporated into the final Plan document:

Insights from outreach to people of color in Sun Prairie

Neighborhood Navigators: A Potential Outreach Tool

Sun Prairie’s Neighborhood Navigators program could have been a helpful program for outreach initiatives such as this. Reinstating funding for the Neighborhood Navigators would create more consistent relationships and feedback loops with people of color on city initiatives, particularly given the strain on nonprofit and other community-based organizations.

Both the fall and spring focus group sessions did show there is interest by the Black, Indigenous, and People of Color (BIPOC) communities in active transportation efforts in Sun Prairie. Supporting and continuing the outreach (such as through the Neighborhood Navigators program) would be beneficial: The feedback was insightful and informed the Plan recommendations.

However, engaging Latino/a residents for the second phase of this plan was difficult due to the many demands on potential partner organizations and their need to prioritize their own work.

Bike Subcommittee of the Transit Commission

The Bike Subcommittee met on August 28, 2023. Members asked to re-insert recommendations for bike parking that had been provided in earlier versions of the policy and program recommendations. The plan now includes recommendations for high-quality bike parking for both City-owned facilities (such as parks and buildings) and a program to subsidize the installation of bike parking at privately-owned businesses. Other small revisions requested by committee members were also incorporated.

Transit Commission

The Transit Commission met on September 6, 2023, and reviewed and discussed the revised draft plan. Members discussed several aspects that relate to how the plan would be implemented, especially with respect to dealing with recommended facilities on private property, and removing on-street parking to install bicycle lanes. No changes were requested by Commission members.

City Council

The Sun Prairie City Council will meet on Tuesday, September 19 and will include a presentation to consider this Plan. Any discussion or decisions occurring during that meeting will be summarized [here](#).





3 EXISTING CONDITIONS

Sun Prairie in Motion builds upon many previous planning efforts and is informed by a solid understanding of the current conditions in the community.

3.1 Plan, Policy and Program Review

The project team reviewed relevant plans, policies, and programs to gain an understanding of the goals, objectives, and planned infrastructure for biking and walking in and around Sun Prairie. The following section is only a summary; Appendix B includes the full review of relevant plans, policies, and programs.

Relevant Plans

Previous plans helped the project team gain a better understanding of goals, objectives, and planned infrastructure for walking, biking, and rolling in Sun Prairie. The plans summarized here were identified in partnership with Sun Prairie staff. The plan review focused on four major topics: bicycle and pedestrian connections, equity, safety, and feasibility. These themes were related to the project objectives emphasized by staff and steering committee members and kept the focus on looking for recommendations consistent with Sun Prairie priorities.

Figure 3. Relevant Plans Reviewed

Plan or Document	Themes Present			
	Bike/Ped Connections	Equity	Safety	Feasibility
Sun Prairie Comprehensive Plan 2019–2039 (Adopted 2019)	▲	▲	▲	▲
City of Sun Prairie Parks & Open Space Plan 2017–2022 (Adopted 2017)	▲	▲		▲
Sun Prairie Recreational Loop Plan (May 2022 version)	▲			
Central Main Street Corridor BUILD Redevelopment Plan (Adopted 2018)	▲		▲	▲
Sun Prairie Stronger Master Plan 2020 (Adopted 2020)	▲			
Ad-Hoc Steering Committee on Transportation Final Report (2017)	▲			
Bike Friendly Community 2019 Submittal and Report Card	▲		▲	▲
Sun Prairie Safe Routes to School Plan (2008–2013)	▲			
Greater Madison MPO Bicycle Transportation Plan (2015)	▲	▲		
Connect Greater Madison Regional Transportation Plan 2050 (Adopted 2022)	▲	▲	▲	▲
Dane County Parks and Open Space Plan and Regional Trails Map (2018–2023)	▲			
City of Madison Reiner, Nelson, and Rattman Neighborhood Plans	▲			
Greater Madison MPO Pedestrian/Bicycle Facilities, Policies, and Street Standards Report	▲			
Greater Madison MPO Intersection Safety Network Screening by Greater Madison MPO			▲	

Relevant Policies

A scan of City policies and ordinances looked for language that could potentially discourage bicycling, walking, rolling, or prevent the construction of infrastructure to support active transportation. In general, the City's current zoning code has policies and standards that result in spread-out and separated land uses that effectively result in automobile transportation due to the distance between destinations. Selected specific issues in the policies and ordinances are presented on this page.

Sidewalk Policy: Specific Potential Issues

Section	Current Language	Potential Issue or Concern
Construction Standards	Sidewalks shall be five feet (5') in width and constructed of concrete. Multi-use paths shall be a minimum of ten feet (10') in width and constructed of bituminous pavement. Where located in areas with frequent driveway crossings, the City Engineer may require multi-use paths to be constructed of concrete.	It may be preferable to establish classes of sidewalk so that sidewalks in areas that will see heavy pedestrian traffic are built to wider standards.
Required Locations	Both sides of all new or reconstructed streets. One or both sides of repaved streets.	None

Sun Prairie Municipal Code

Chapter 10 (Streets): Specific Potential Issues

Section	Current Language	Potential Issue or Concern
10.32.060 Bicycle Regulations	Section A states that bicycle operators must make right and left turns according to specific turning rules. Section B states that more than one person on a bike is only allowed if the bicycle is so constructed or modified as to be ridden by more than one person.	Section A: The turning rules are complicated and difficult to understand, and are not in keeping with state law Section B: Could be interpreted to not allow children to ride on the back of bikes.

Chapter 16 (Subdivisions): Specific Potential Issues

Section	Current Language	Potential Issue or Concern
16.28.020 Streets	Section F states that local streets shall be arranged to discourage use by through traffic. Section H states that the use of cul-de-sacs shall be held to a minimum.	Circuitous streets make it hard to provide a low-stress biking alternative to a busy parallel street. Also, streets can be designed (not arranged) to slow traffic. Cul-de-sacs should be prohibited unless connected via sidewalk to a path or nearby street.
16.28.070 Easements	Section C states that pedestrian easements shall be a minimum of twelve (12) feet wide.	Too narrow for 10-foot shared use path connections (2-3 foot shoulders should be provided on both sides of a path).
16.32.070 Streets	Section B roadways establishes minimum right-of-way widths and pavement widths for different street classifications.	A Complete Streets approach would stipulate designs for a wider range of streets (e.g. pedestrian streets, bicycle boulevards, or streets with bus service).

Chapter 17 (Zoning): Specific Potential Issues

Section	Current Language	Potential Issue or Concern
17.36.040 Parking and Traffic Circulation Standards	Section G provides minimum parking spaces for different types of land uses. Parking lot design standards do not include guidance for separating pedestrians in parking lots Section K provides bike parking standards for new developments and building expansions.	Section G: Parking minimums have the potential to create more parking than necessary, encourage more driving, and discourage pedestrian-friendly site design by requiring people to walk through large parking lots to buildings. Section K: No issue
17.36.220 Design Standards for Suburban Commercial and Urban Commercial Zoning Districts	New buildings and uses in suburban commercial and urban commercial zoning districts that are larger than 25,000 square feet are required to follow certain site design standards, including parking lot location and pedestrian circulation standards.	These site design standards and pedestrian circulation standards should apply to a broader range of developments and zoning districts. Pedestrian circulation requirements should also encourage sidewalks to connect to adjacent sites.

Relevant Programs, Funding, and Staffing

In order to consider the feasibility of implementing different programs and adding new infrastructure for City of Sun Prairie to build and maintain, it is useful to consider the City's current operating and funding environment.

2022 City Adopted Budget

Wisconsin state law allows municipalities and counties to increase their levy over the prior year by the percentage increase in value from "net new construction." Currently the city is well within the state-imposed levy limit, however, it expects to meet this limit as early as 2025.

The City of Sun Prairie's Transportation Division operates under the Public Works department. The Transportation Division has one full-time staff person (the Transportation Coordinator) who oversees transit planning and operation (for both the shared-ride taxi service and fixed-route transit planning), bicycle and pedestrian planning and coordination, and who oversaw the development of this Plan.

The city currently allocates \$15,000 per year in the operating budget for routine sidewalk replacement or other standalone infrastructure for pedestrians and bicyclists.

Capital Improvement Plan (CIP) 2020–24

The CIP lists the major street transportation projects expected to be undertaken in a five-year period.

Street projects—especially street reconstruction projects—provide cost-efficient opportunities to add bicycle or pedestrian connections as part of other projects. The CIP identified several future planned bicycle or pedestrian connections under the "multi-modal" category, including a future Sheehan Park-Scenic Pointe path connection.

- The City plans on spending \$4 to \$6 million annually on street reconstruction projects, and \$400,000 to \$2.5 million annually for street pavement rehabilitation.
- The City plans on spending between \$100,000 and \$300,000 annually for standalone multi-modal connections and pavement replacement on paths.

3.2 Existing Walking and Biking Conditions

Development of this plan included several geospatial analyses of walking and biking conditions in Sun Prairie. These analyses shaped the recommendations and prioritization. The existing conditions review included five topics:

- Review of existing and planned paths and bikeways
- Low-stress bicycle network
- Trip potential analysis of areas where people are most likely to walk, bike, or roll
- Review of bicycle and pedestrian crashes
- Review of short trips (under 2-miles)

- Equity priority areas: concentrations of people of color, households with low incomes and legally-restricted affordable housing.

Existing and Planned Active Transportation Network

Existing Bikeways and Sidewalks

Existing bikeways, sidewalks and paths in Sun Prairie and environs are shown in Figure 4. Sun Prairie has an extensive network of multi-use paths, especially in the newer residential areas of the city. However, many streets lack sidewalks. Sun Prairie has some on-street bike lanes, but no other on-street bikeway connections such as marked bike routes or bicycle boulevards.

Previously Proposed Paths and Bikeways

Figure 5 shows the recommended paths and bikeways from the Greater Madison MPO's Bicycle Plan and 2050 Regional Transportation Plan. The regional bicycle plan does not prescribe specific on-street facilities, like bike lanes and paved shoulder. Instead, it divides the future bicycle network into two "bicycle functional classes" to distinguish between the primary and secondary bicycle network. Other local bikeway or pedestrian connections that serve local trips are not usually shown as part of the regional plan. The map also displays planned roads; planned functional classification of paths and on-street bikeways; and priority missing bike links identified in the 2050 Regional Transportation Plan. It also shows the planned Sun Prairie Recreational Loop.

Figure 4.

Existing Bikeways,
Sidewalks, and Mountain
Bike Trails

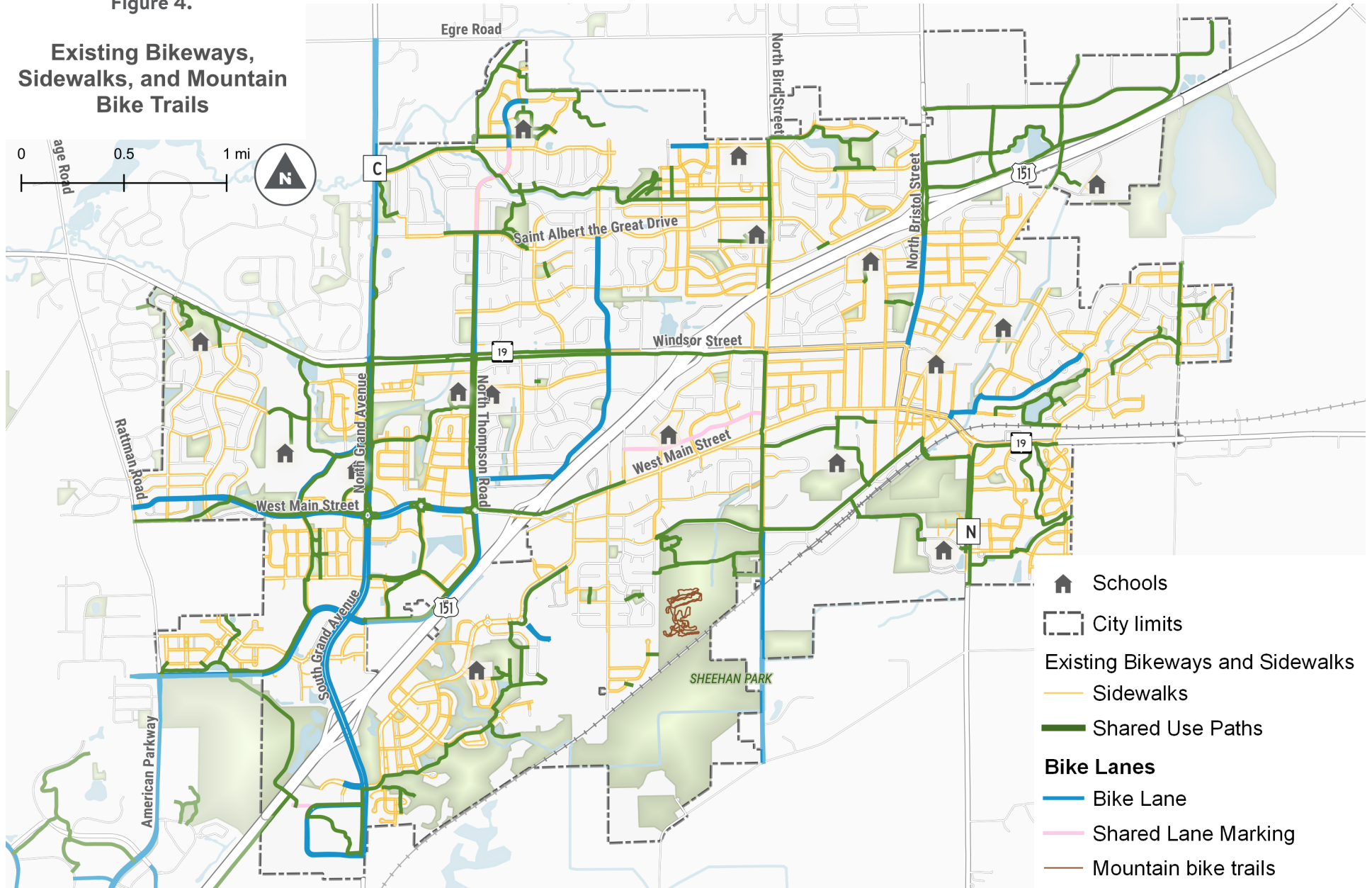
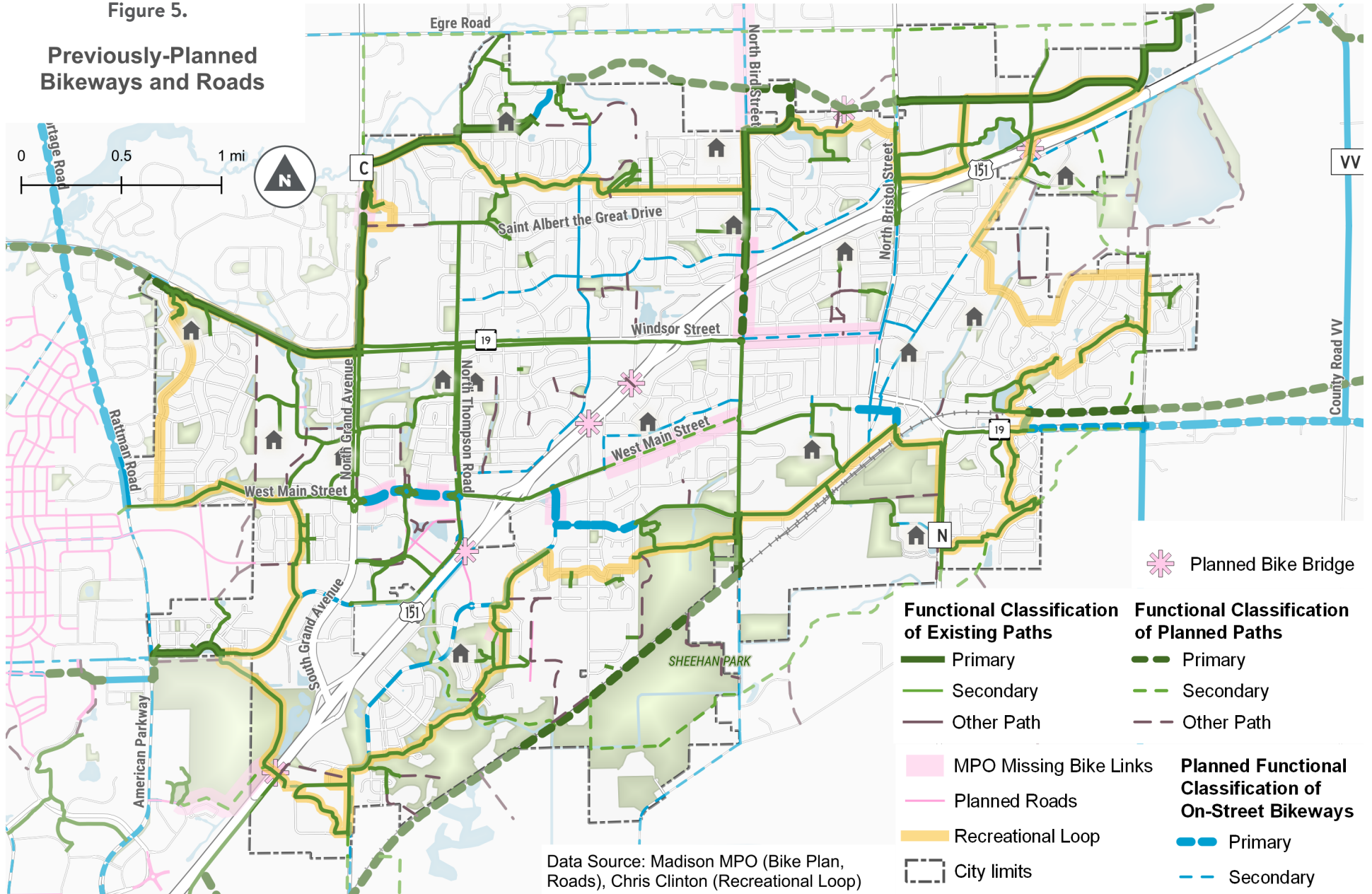


Figure 5.
Previously-Planned
Bikeways and Roads



Looking at these planned connections:

- Much of the paths in Sun Prairie have already been built, but few of the planned on-street bikeways have been implemented.
- Even if the planned bikeways in the Regional Plan were built, there would still be a gap in the bikeway network in Sun Prairie north of East Main Street (STH 19) in downtown Sun Prairie.

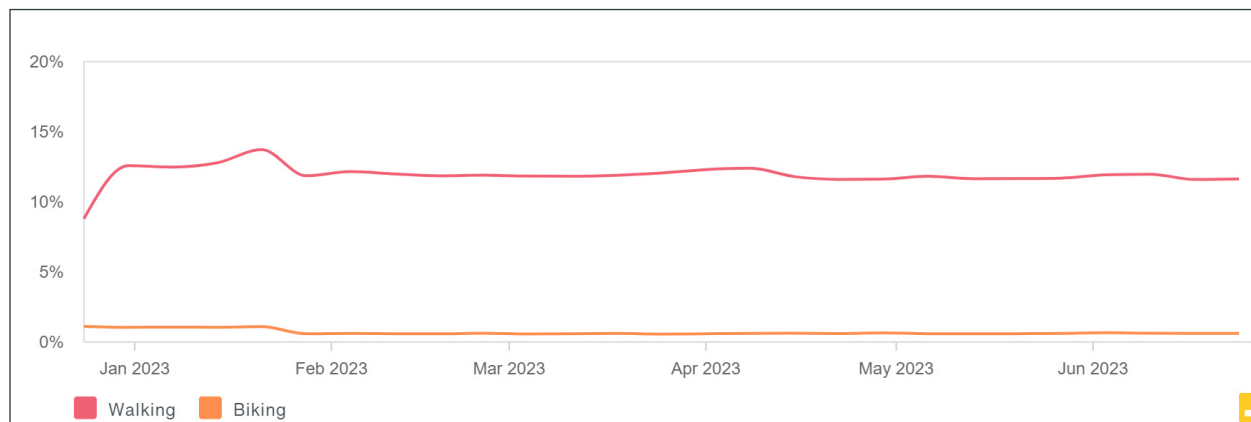
The bikeway network proposed in the Regional Plan does not provide the fine-grained and local connections needed for a city-level active transportation plan; therefore this Plan recommends more closely-spaced connections. The project team referred to the connections in these previous planning efforts while creating the recommended path and bikeway network in Chapter 5.

Walking and Biking Travel Trends

The percentage of Sun Prairie residents that walk or bike for transportation is fairly low. According to Replica, a “big data” platform that models travel and transportation trends, about 11 percent of trips in Sun Prairie are made by walking, while less than one percent are made by bike.

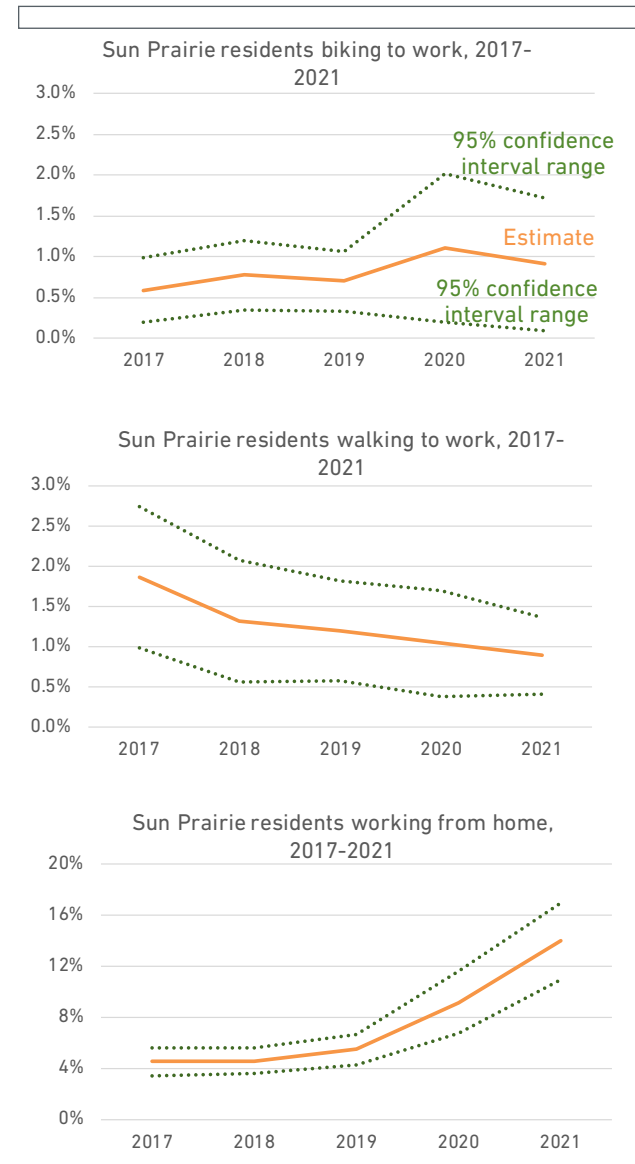
The American Community Survey also offers data on journey to work trends. The percent of Sun Prairie residents who bike to work increased since between 2017 and 2021, but the percent who walk to work decreased over the same period. They are both around one percent of work trips. The COVID-19 pandemic resulted in an increase of residents that worked from home to 14 percent. This new reality offers an incentive to focus on growing local, school-related and non-employment trips.

Figure 6. Percent of all trips in Sun Prairie that are made by walking and biking



Source: Replica

Figure 7. Percent of Sun Prairie residents who bike or walk to work, or work from home



Source: American Community Survey

Low-Stress Bicycle Network

The Greater Madison MPO in 2018 conducted a Level of Traffic Stress (LTS) analysis of bicyclist safety conditions around the MPO jurisdictional area (including Sun Prairie). The LTS method recognizes that most people are interested in riding a bicycle more often but rarely do so, or ride only on certain paths and streets, because they are concerned about safety in the presence of automobile traffic. LTS analysis categorizes streets and paths into four levels of traffic stress based on automobile traffic, number of lanes, width of bicycle lanes, and other factors. Figure 8 displays the results of the analysis.

Routes rated as LTS 1 or 2 comprise the low-stress network, which is all the routes, including streets, on which an average person would be expected to feel comfortable riding a bicycle.

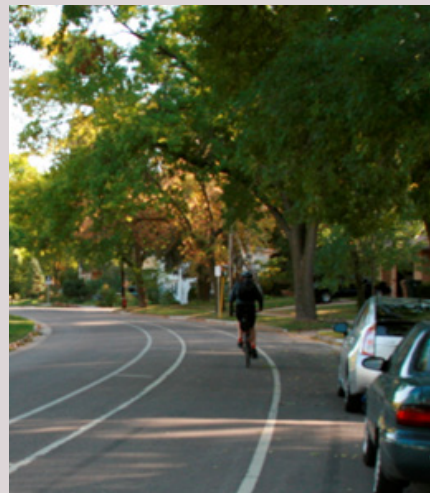
All paths and most residential streets in Sun Prairie qualify as LTS 1 or 2, providing many low-stress connections. But traveling by bike beyond one's neighborhood is trickier. There are few low-stress crossings of USH 151, and few continuous east-west and north-south connections on both the east and west parts of the city.

LTS 1: Suitable for children



Strong separation from all traffic except low speed, low-volume traffic. Simple to use crossings

LTS 2: Tolerable for majority of adults



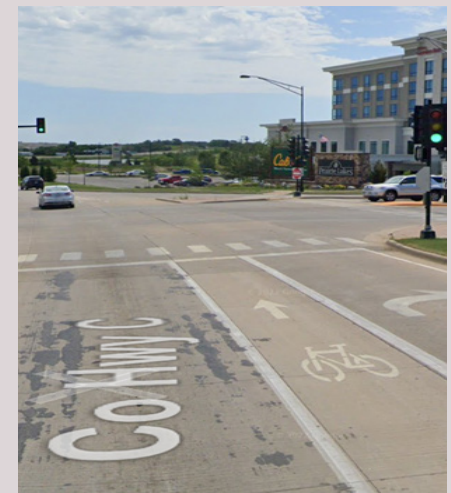
Bicyclists have their own place to ride that keeps them from having to interact with traffic; physical separation from higher-speed and multi-lane traffic. Crossings are easy for an adult to negotiate.

LTS 3: Acceptable for more confident adults



Involves interaction with moderate speed or multi-lane traffic, or close to higher speed traffic.

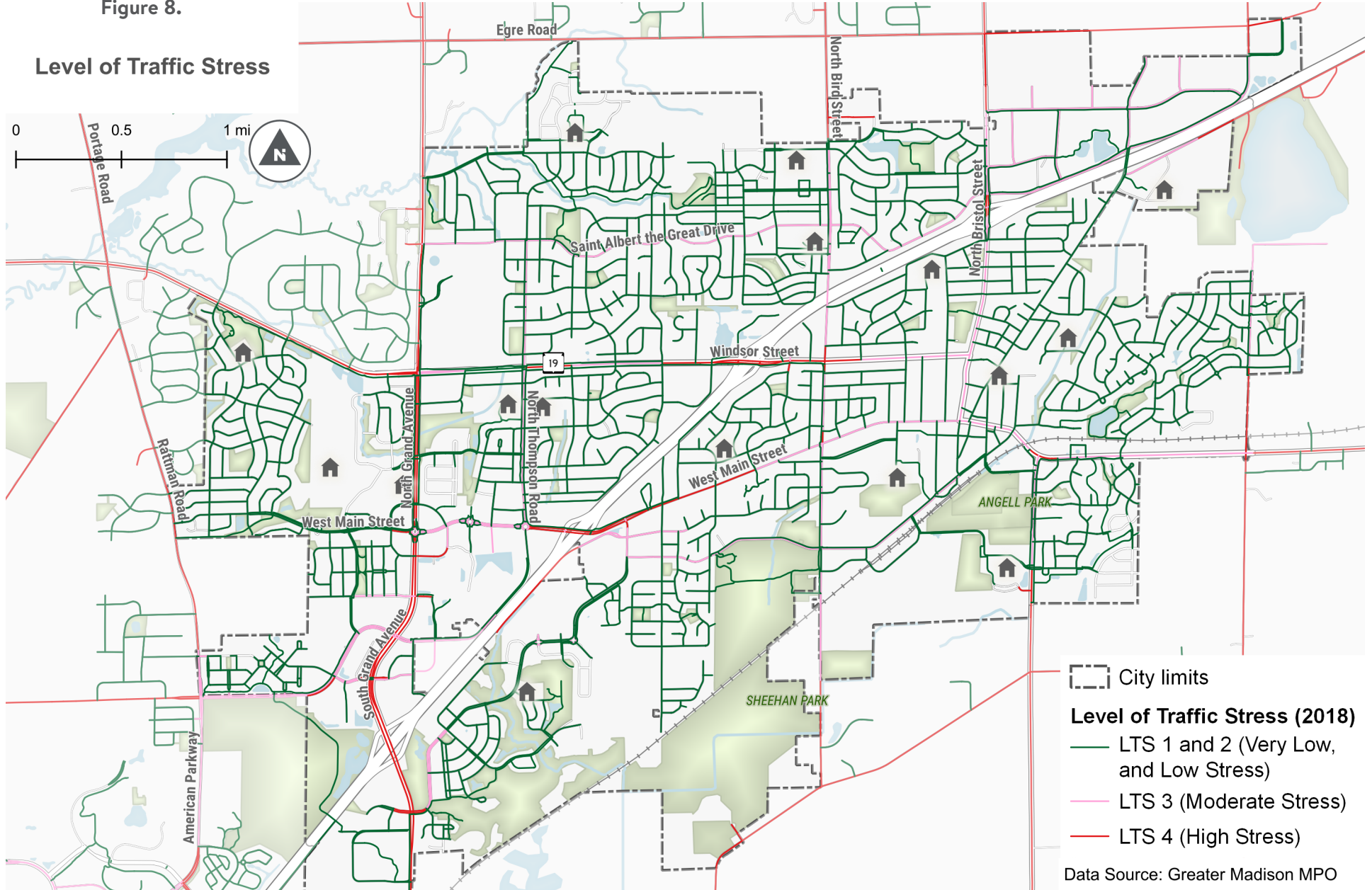
LTS 4: Acceptable to very few adults



Mixing with moderate speed traffic, or close proximity to high-speed traffic.

Figure 8.

Level of Traffic Stress



Trip Potential Analysis

The project team performed a trip potential analysis to determine where people are most likely to walk, bike, and roll in Sun Prairie. The results of this analysis highlight areas where enhanced pedestrian and bicycle infrastructure may potentially serve more users. This analysis was also used during the project prioritization process described in Chapter 7. The analysis used the following variables:

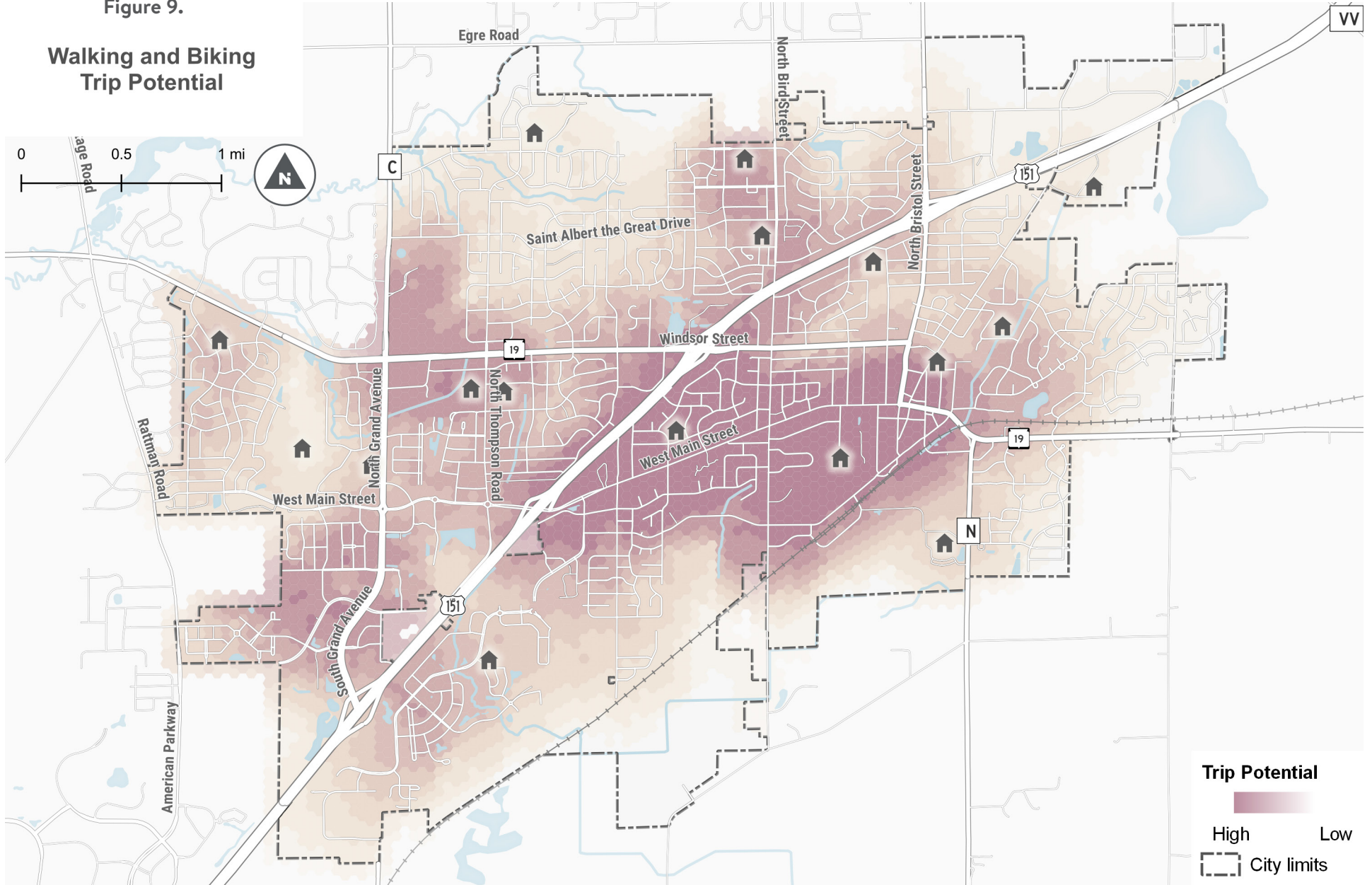
- Intersection Density (number of intersections per square mile)
- Population Density (population per square mile)
- Lower-Income Family Density (families with household income below 200% of federal poverty level per square mile)
- Employment Density (jobs per square mile)
- Priority Destination Density (schools, community centers, and libraries per square mile).

Results of Walking, Biking, and Rolling Trip Potential

Figure 9 illustrates where walking, biking, and rolling trips are most likely to occur. Areas with denser street grids, higher population densities, lower-income families, denser employment, and greater priority destination density tend to have higher trip potential scores due to their development patterns that support pedestrian and bicycle travel. The West Main Street corridor has high trip potential, as does the area along USH 151 between West Main Street and Windsor Street: if that freeway did not exist, there would be a strong potential for walking, rolling, and biking due to the density of both population and low-income households in the area. Hot spots with medium walk and bike trip potentials include the area around Woodman's and Cabela's on South Grand Avenue, area west of the intersection of Windsor Street and North Grand Avenue (CTH C), and the corridor along North Bird Street north of Windsor.



Figure 9.
Walking and Biking
Trip Potential



Bicycle and Pedestrian Crashes

The Wisconsin Traffic Operations and Safety (TOPS) Laboratory maintains a statewide database of all motor vehicle crashes reported to law enforcement. This data was used to illustrate the location of motor vehicle crashes with bicyclists and pedestrian in Sun Prairie between 2017 and 2021 (Figure 8). In this time, a total of 35 bicycle and pedestrian crashes occurred, with 18 involving bicyclists and 17 involving pedestrians. Of the 35 crashes, nine resulted in fatalities or incapacitating injuries.

Disparity in crash locations

Figure 8 also displays Tier 1 and Tier 2 “Environmental Justice Areas” (EJAs) identified by the Greater Madison MPO to identify areas with lower incomes and higher percentage of minority and Hispanic population. Tier 1 EJAs are neighborhoods that have significantly higher concentrations of people from racial and ethnic minorities and low-income households than the metropolitan area at large. Tier 2 EJAs have higher-than average concentrations of racial and ethnic minorities and low-income households. The MPO uses Tier 1 and Tier 2 EJAs to study

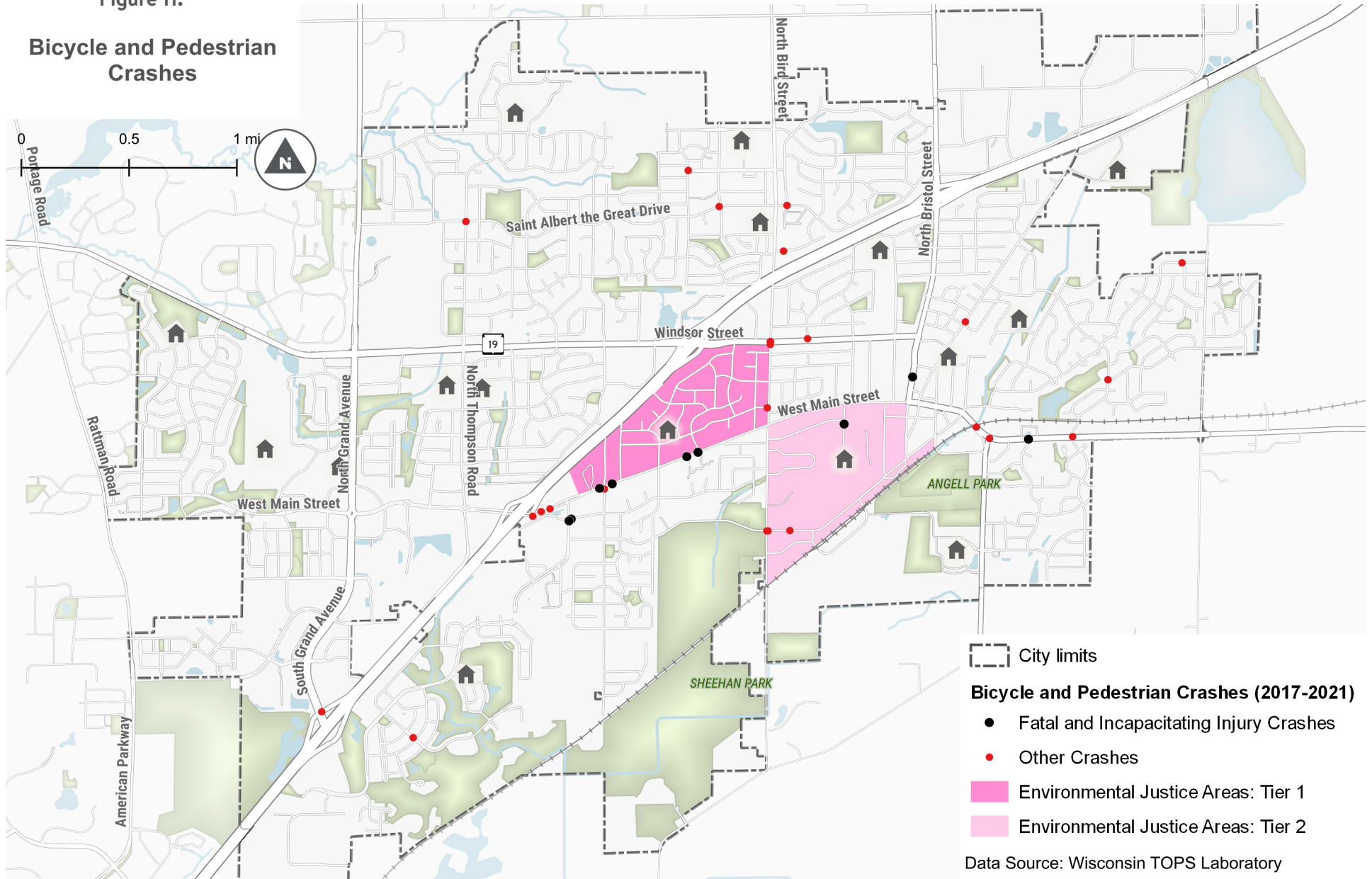
the impact of transportation infrastructure on disadvantaged groups in Dane County.

In Sun Prairie, bicycle and pedestrian crashes are disproportionately higher in the EJAs than in the rest of the city. The Tier 1 EJA is the area bounded by Windsor Street (STH 21), USH 151, and N Bristol Street. That area has 5% of Sun Prairie’s population but accounts for 29% of all bicycle and pedestrian crashes. The Tier 2 EJA is the mega-block surrounding Central Heights Middle School. That area has only 2% of Sun Prairie’s population but accounts for 11% of all bicycle and pedestrian crashes.

Figure 10. Disparity in bicycle and pedestrian crashes in Environmental Justice Areas in Sun Prairie

Sun Prairie Areas	Bicycle and Pedestrian Crash Count	Percent of all Bicycle and Pedestrian Crashes	2021 Population (American Community Survey Estimate)	Percent of Sun Prairie Population	Crashes per 1,000 People
Tier 1 Environmental Justice Area (Bounded by Windsor Street, USH 151, and North Bristol Street)	10	29%	2,000	5%	5.0
Tier 2 Environmental Justice Area (Mega-block surrounding Central Heights Middle School)	4	11%	900	2%	4.4
Sun Prairie Total	35	100%	36,400	100%	0.6

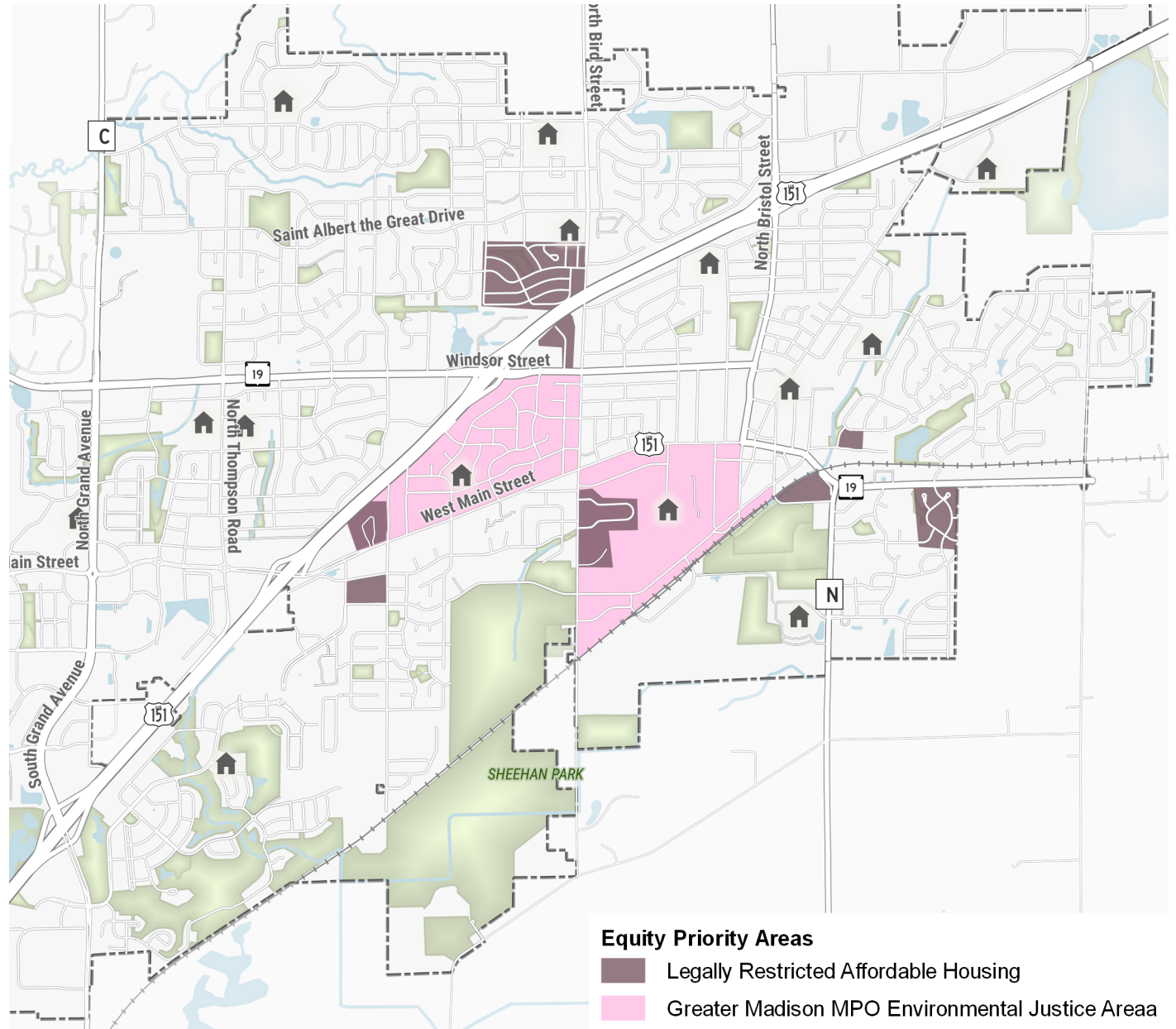
Figure 11.
Bicycle and Pedestrian Crashes



Affordable Housing and Equity Priority Areas

One of the goals of this Plan is to promote equity. In order to do that, this Plan established "equity priority areas" by combining the EJA Tier 1 and Tier 2 areas with the locations of Legally Restricted Affordable Housing in Sun Prairie. Legally Restricted Affordable Housing includes apartments that accept Section 8 vouchers, as well as housing developments that are legally required to include tenants with certain income limits. These equity priority areas were used for prioritizing projects in Chapter 6.

Figure 12. Equity priority areas for the Sun Prairie in Motion Active Transportation Plan



Short Trips Analysis

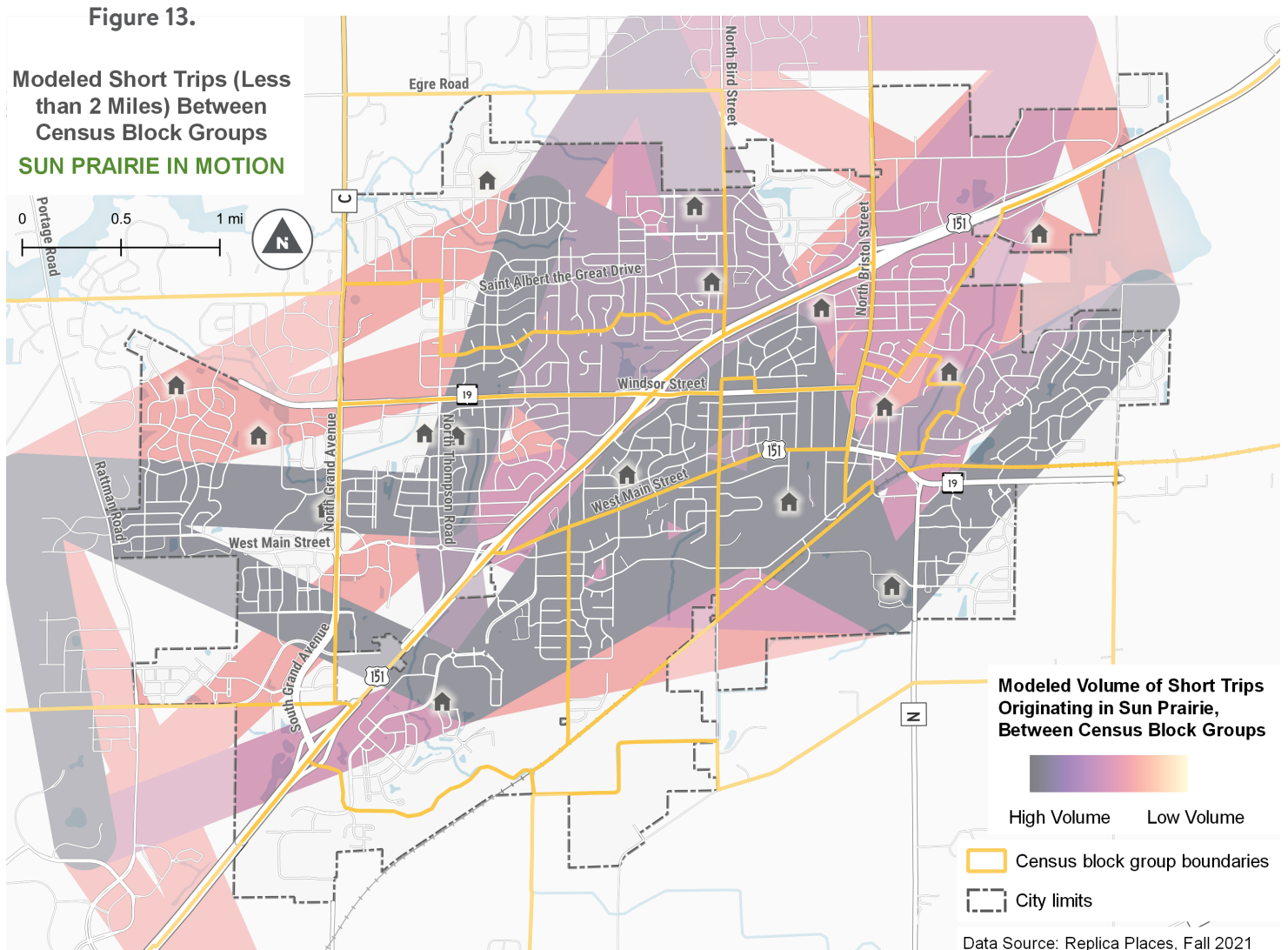
Most walking, biking, and rolling trips are under two miles in distance. Trips under one mile are most likely to be made by walking (or rolling). In general, a very small share of total trips are made by bicycle, but most bicycling trips are under two miles in distance. An analysis of origin and destinations for short trips can highlight areas where safer and more welcoming pedestrian and bicycle infrastructure may potentially serve more users and attract people to switch from travel by personal automobile to active transportation. The project team performed this analysis using the data platform Replica, which is a “big data” platform that models travel and transportation trends.

All Trips Under Two Miles

For trips originating in Sun Prairie on a typical fall 2021 weekday, the Replica model estimates (with high certainty) about 39,500 trips taken by about 19,900 trip takers were under two miles in length. Of these short trips, the model estimates 35% were made by walking, 4% were biking, and the remainder was by private automobile, carpooling, or some other mode.

Figure 10 displays a the amount of trips taken between Census block group centroids for all trips under two miles. Darker lines and areas show higher volumes of trips, while lighter lines and areas show lower volumes. Trip volume is

highest in the area south and east of USH 151, but there are high volumes of trips crossing USH 151 to get between the central part of Sun Prairie and the far west and far north sides of the city.



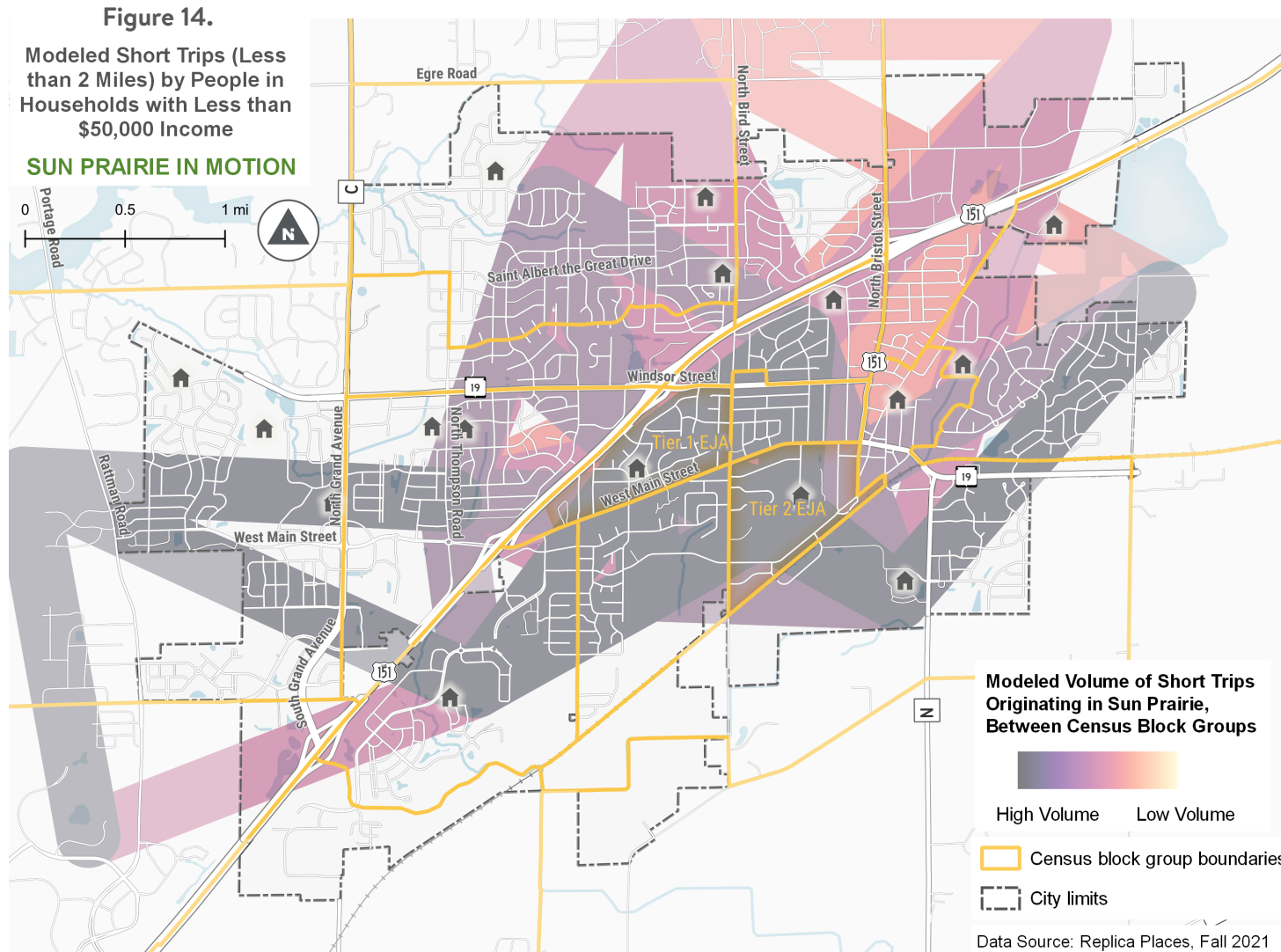
Trips Under 2-Miles for Households with Less than \$50,000 in Household Income

It is useful to see whether there are different patterns of trips for low-income households, who likely have less access to cars and may rely more on walking,

biking and rolling to get around. For trips originating in Sun Prairie on a typical fall 2021 weekday, the Replica model predicts (with medium certainty) about 9,600 trips taken by about 4,800 trip takers meeting the criteria of living in households with less than

\$50,000 income. The Replica model predicts roughly the same mode breakdown (36% by walking, 4% by biking)

for these low-income households. Figure 11 displays the number of trips between Census block group centroids for trips made by these low-income households. The areas that are shown in Figure 17 as EJA Tier 1 and Tier 2 are labeled. In general, the travel patterns seem to be very similar as the overall modeled population, with a slightly heavier focus in travel between the areas south and east of USH 151.





4 FACILITY SELECTION AND DESIGN TOOLKIT

This chapter provides high-level descriptions, considerations, and guidance for the physical infrastructure to create a safe and comfortable active transportation network, with a focus on designing for children. The guidance in this chapter was used to select facilities for the recommended bikeway and path network for Sun Prairie. The toolkit is also meant to be a resource for the City to use during implementation of the Plan. The toolkit is not meant to replace engineering studies, feasibility evaluation, and design: those will always be subject to engineering judgment, context, and community engagement.

4.1 Design Users and Facility Selection

Walking and biking infrastructure in Sun Prairie will be designed for people of all ages and abilities. This emphasizes separation from motor vehicle traffic and designing intersections to prioritize people on foot. Sometimes people walking and biking will share the same space, but in some situations, it is preferable to separate them.

Principles for Planning and Designing for Active Transportation in Sun Prairie

Along with the vision and goals, this Plan established principles to help guide the planning and design decisions. When presented with trade offs or questions, project staff, City staff, and elected officials can refer to these guiding principles to determine the correct course of action.

Goal 1: Increase Walking and Biking



Related Principles:

Close gaps in the sidewalk and bikeway networks

Prioritize walking, biking, and transit over motor vehicles in street design

Goal 2: Improve Safety



Related Principles:

Design for children walking and biking to school and activities

Use data to identify where safety infrastructure is most needed

Goal 3: Promote Equity



Related Principles:

Focus on equity areas where people with barriers to transportation live and work

Be inclusive: provide facilities and programs where everyone feels welcome

Design Users for Sidewalks and Crossings

It is important to design and implement connected pedestrian networks that are safe and comfortable for all ages and abilities, since most people are pedestrians in some way or form on any given day. The transportation network should accommodate pedestrians with a variety of needs, abilities, and mobility limitations. One of the planning principles of Sun Prairie in Motion is to design for children. Children have particular characteristics and behaviors that can increase their risk for collision with motor vehicles. Young children typically¹

- are smaller and can be difficult for drivers to see
- are shorter than adults and have a lower field of vision
- have trouble judging speeds and distances of moving vehicles
- have less predictable movements than adults
- have less experience than adults and may not recognize dangerous situations

These differences in physical characteristics, physical abilities, and cognitive abilities should be taken into account when designing facilities where children will be present.

Pedestrian Facility Selection

Pedestrians can be accommodated by a variety of facility types, the most common being sidewalks and shared-use paths. Both of these facilities should be designed to meet standards in the US Access Board's proposed [Public Rights-of-Way Accessibility Guidelines \(PROWAG\)](#). This Facility Selection and Design Toolkit will be focusing primarily on pedestrian crossing facility selection, which can be a more complex selection process that needs to account for characteristics of the intersection and roadway. The FHWA published its [Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations](#) in 2018, which includes guidance for pedestrian crash countermeasures that can be used at crossings based



Designing for the most vulnerable user in a given situation can help ensure that pedestrian facilities meet the needs of all ages and abilities, according to the concept of “universal design”. For example, older adults and people with disabilities sometimes walk more slowly than other age groups and may require more time to cross streets. Providing additional time for street crossings also improves safety and comfort for children and families crossing the street.

1. EPA. (2003). Travel and Environmental Implications of School Siting. EPA 231-R-03-004. U.S. Environmental Protection Agency, Washington, DC.

on roadway configurations, speed limits, and average daily traffic volumes. **Figure 15** is a key resource in that guide, providing facility selection methodology for crossings. This Toolkit relies on the guidance in **Figure 15** and the more detailed guidance in the full FHWA guide; the City of Sun Prairie should refer to that guide for more detail when designing pedestrian crossings.

Figure 15. Safety countermeasures for pedestrian crossings, according to roadway characteristics

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 lanes (1 lane in each direction)	① 2 4 5 6	① 5 6 7 9	① 5 6 7 9	① 4 5 6 7 9	① 5 6 7 9	① 5 6 7 9	① 4 5 6 7 9	① 5 6 7 9	① 5 6 9
3 lanes with raised median (1 lane in each direction)	① 2 3 4 5	① ③ 5 7 9	① ③ 5 7 9	① 3 4 5 7 9	① ③ 5 7 9	① ③ 5 7 9	① ③ 4 5 7 9	① ③ 5 7 9	① ③ 5 9
3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane)	① 2 3 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 9	① 3 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 9	① ③ 4 5 6 7 9	① ③ 5 6 9	① ③ 5 6 9
4+ lanes with raised median (2 or more lanes in each direction)	① ③ 5 7 8 9	① ③ 5 7 8 9	① ③ 5 8 9	① ③ 5 7 8 9	① ③ 5 7 8 9	① ③ 5 8 9	① ③ 5 7 8 9	① ③ 5 8 9	① ③ 5 8 9
4+ lanes w/o raised median (2 or more lanes in each direction)	① ③ ① ③ 5 6 5 6 7 8 9 7 8 9	① ③ ① ③ 5 6 5 6 7 8 9 7 8 9	① ③ ① ③ 5 6 5 6 8 9 7 8 9	① ③ ① ③ 5 6 5 6 7 8 9 7 8 9	① ③ ① ③ 5 6 5 6 7 8 9 7 8 9	① ③ ① ③ 5 6 5 6 8 9 7 8 9	① ③ ① ③ 5 6 5 6 7 8 9 7 8 9	① ③ ① ③ 5 6 5 6 8 9 7 8 9	① ③ ① ③ 5 6 5 6 8 9 7 8 9
Given the set of conditions in a cell, # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location. ● Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location. ○ Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.* The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.					1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs 2 Raised crosswalk 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line 4 In-Street Pedestrian Crossing sign 5 Curb extension 6 Pedestrian refuge island 7 Rectangular Rapid-Flashing Beacon (RRFB)** 8 Road Diet 9 Pedestrian Hybrid Beacon (PHB)**				

*Refer to Chapter 4, 'Using Table 1 and Table 2 to Select Countermeasures,' for more information about using multiple countermeasures.

**It should be noted that the PHB and RRFB are not both installed at the same crossing location.

Bicycle Facility Design Users

Low-stress, connected bicycle networks improve bicyclist safety and encourage bicycling for a broader range of user types. Selecting a design user profile is often the first step in the process of determining what type of bikeway treatment is appropriate. Research on adults who have stated an interest in bicycling² has identified three types of potential and existing bicyclists, which are explained below and shown in Figure 16. However, people may not fit into a single user profile: for example, a commuter bicyclist who is comfortable bicycling within a bicycle lane when traveling alone may prefer to bicycle on a sidewalk or shared use path when traveling with children.

Interested but Concerned Bicyclist

Interested but Concerned Bicyclists are the largest group identified by the research and have the lowest tolerance for traffic stress. This group tends to bicycle for recreation but not transportation. To maximize the potential for bicycling as a viable transportation option, it is important to design bicycle facilities to meet their needs. This is generally the recommended design user profile for Sun Prairie.

Somewhat Confident Bicyclist

Somewhat Confident Bicyclists are the next-smallest group. They are comfortable on most types of bicycle facilities. They have a lower tolerance for traffic stress than the Highly Confident Bicyclist and generally prefer striped or protected bike lanes on

Figure 16. Bicyclist Confidence Levels



major streets and low-volume residential streets, but they are willing to tolerate higher levels of traffic stress for short distances.

Highly Confident Bicyclist

Highly Confident Bicyclists are the smallest group identified by research. They prefer direct routes and do not avoid operating in mixed traffic, even on roadways with higher motor vehicle operating speeds and volumes. Many also do enjoy bikeways separated from traffic.

Bicycle Facility Selection

Bicycle networks should be continuous and provide convenient access to destinations. Anywhere a person would want to drive to for utilitarian purposes, such as commuting or running errands, is a potential destination for bicycling. As such,

creating low-stress bicycle networks is not achieved by simply avoiding motor vehicle traffic. Rather, planners should identify ways to lower stress along higher traffic corridors so that bicycling can be a viable option for the majority of the population.

That said, one of the principles of this Plan is to design for children walking and biking to school and activities. Schools and parks are often located in residential areas with streets that have low traffic and speeds. Accommodating children on those streets can be achieved by using traffic calming treatments that serve dual purposes: lowering traffic speeds, and increasing the visibility of children at crossings.

Various methodologies can be used to select the appropriate bicycle facility based on roadway width, traffic volumes, speeds, and other considerations. The [FHWA's Bikeway Selection Guide](#) provides an in-

2. Dill, D. and N. McNeil. (2016). Revisiting the Four Types of Cyclists. In Transportation Research Record 2587. TRB, National Research Council, Washington, DC.

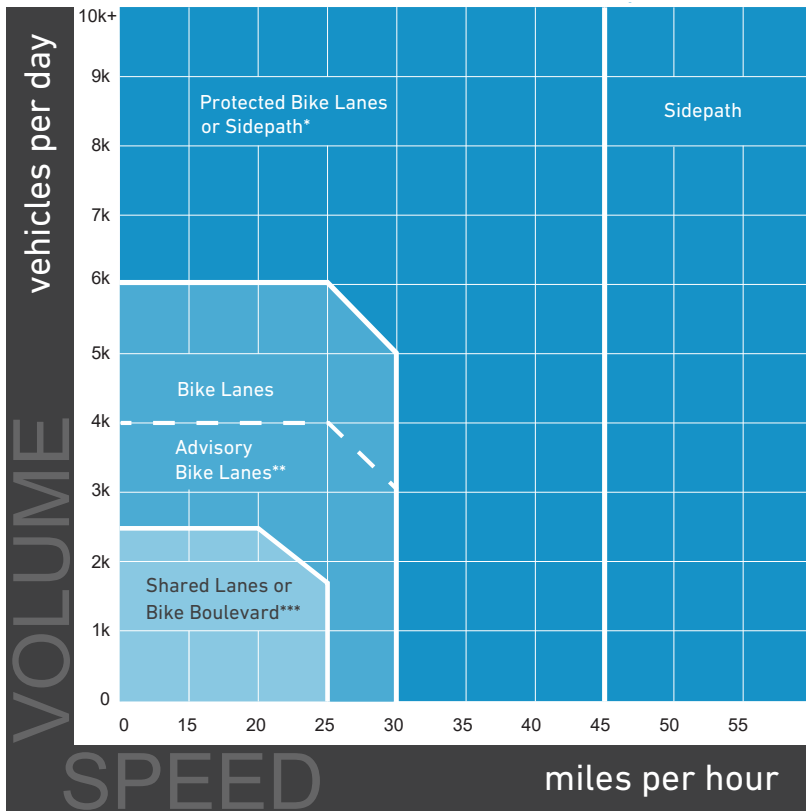
depth review of the process. For the Sun Prairie in Motion Plan, the planning team used the guidance in **Figure 17** and **Figure 18** when selecting and recommending bikeway facilities along existing and planned streets. This guidance is based on the FHWA Bikeway Selection Guide and tailored for local context.

Along roads with higher speeds (45 miles per hour or greater), sidepaths are preferred. This is especially true for locations that attract larger volumes of bicyclists or for routes that serve as key bicycle connections between

destinations. Paths are also an important consideration for families and children making connections. Protected bike lanes or shared use paths are also generally preferred on streets with Average Daily Traffic above a certain threshold (e.g. above 6,000 ADT depending on context).

While paths and sidepaths are important, low volume and low stress streets may not require a separate space for bicyclists. Shared lane markings, marked bike routes, and bike boulevard treatments may be sufficient.

Figure 17. All Ages and Abilities Bike Facility Selection



*To determine whether to provide a shared-use path or separated bike lane, consider pedestrian and bicycle volumes or, in the absence of volume, consider land use.
 **Advisory bike lanes are only recommended where it is not feasible to provide standard width motor vehicle lanes and bicycle lanes.
 ***See Figure 18, "Bike Boulevard or Shared Lane?"

Figure 18. Bike Boulevard or Shared Lane?

Bike boulevard treatments in Sun Prairie (described later in this section) will be reserved for streets where the speeds and volumes need to be reduced to make it more bikeable and low-stress, especially where children and families are present.



Peak Hour Volume (VPH)	Average Daily Traffic (ADT)	Motor Vehicle Speed (MPH)*	Context	Bikeway Facility Type
≤150	≤1,000	≤25 mph		Shared Lane/ Marked Bike Route
N/A	1,000 to 2,500	≤25 mph	Not near schools, trails, or other destinations visited by children and families.	Shared Lane/ Marked Bike Route
≤300	≤2,000**	≤20** mph	Near schools, trails, or other destinations visited by children and families.	Bike Boulevard

*85th Percentile Speed
 The preferred motor daily traffic volume for a bike boulevard is under 2,000 ADT and under 20 mph; however, bike boulevards are acceptable on streets with speeds of 20 mph and under 2,500 ADT **OR streets with speeds of 25 mph and under 2,000 ADT. Moreover, streets with speeds of 25 mph and 2,500-3,000 ADT could be considered for potential bike boulevards: traffic diverters or traffic calming would need to reduce the volume and speeds to acceptable levels.



4.2 Design Toolkit

Figure 19 presents high-level guidance for proposed pedestrian and bicycle facility types that can enhance and expand Sun Prairie’s active transportation network.

Figure 19. Pedestrian & Bicycle Facility Toolkit



Facility Type	Description + Facility Selection Criteria	Guidance
<p>Sidewalks</p> 	<p>Sidewalks are paved pedestrian routes located parallel to the roadway. Sidewalks may be vertically separated from the road by a curb and/or horizontally separated by a vegetated buffer. ADA-compliant curb ramps allow for people to smoothly transition from the sidewalk to the roadway when crossing the street.</p> <p>Characteristics of Adjacent Street</p> <ul style="list-style-type: none"> • Any volume • Any speed 	<ul style="list-style-type: none"> • The minimum width of sidewalks is 5 ft to meet ADA requirements, however there are instances where sidewalks should be wider. Wider sidewalks are appropriate when greater volumes of people are anticipated, such as in downtown areas, around schools, or where sidewalks run immediately adjacent to roadways or building faces. • In most areas, sidewalks should be at least 6-8 ft from the curb of the street for pedestrian comfort and to allow street trees to thrive. In some downtown and urban contexts, it is acceptable to have sidewalks against the curb, especially if the sidewalk is wider. • Maintenance of sidewalks, such as snow removal, is often the responsibility of the adjacent property owners who may need to be informed of this responsibility. Major repairs or replacement should be the responsibility of the City.
<p>Curb Ramps</p> 	<p>Curb ramps provide smooth transitions from sidewalks to streets at intersections and crossings which serve pedestrians with mobility devices. Curb ramps can also serve people with strollers or people on bicycles.</p> <p>Curb ramp design and construction must comply with ADA requirements to ensure that they can be used by people with disabilities. ADA-compliant curb ramps typically include detectable surfaces to warn visually-impaired people of the bottom of the ramp.</p> <p>Characteristics of Adjacent Street</p> <ul style="list-style-type: none"> • Any volume • Any speed 	<ul style="list-style-type: none"> • Maximum slope: 1:12 (8.33%). • Maximum slope of side flares: 1:10 (10%). • Maximum cross-slope: 2% (1–2% with tight tolerances recommended). • Should direct pedestrians into the crosswalk. The bottom of the ramp should lie within the area of the crosswalk. • Truncated domes (the only permitted detectable warning device) must be installed on all new curb ramps to alert pedestrians to the sidewalk and street edge.³



3. Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG). (2011). Retrieved from: <https://www.access-board.gov/prowag/>



Facility Type	Description + Facility Selection Criteria	Guidance
<p>Marked Crosswalks</p> 	<p>Crosswalks facilitate pedestrian crossings at intersections and mid-block locations. In Wisconsin, motorists are legally required to yield to pedestrians in any unsignalized crosswalk, regardless of whether it is marked or unmarked.</p> <p>On higher-volume, higher-speed, multi-lane streets, marked crosswalks should be accompanied by crosswalk visibility enhancements (described below).</p> <p>Intersection Characteristics</p> <ul style="list-style-type: none"> • At stop- and signal-controlled intersections • Near schools, parks, and pedestrian generators • Across collector and arterial streets 	<ul style="list-style-type: none"> • Not all crosswalks need to be marked, but the City should have a clear and consistent policy for when crosswalks are marked, the types of marking used, and when crosswalks require additional enhancements to improve safety. For example: <ul style="list-style-type: none"> » Mark transverse crosswalk lines: <ul style="list-style-type: none"> ■ At stop-controlled intersections » Mark high-visibility crosswalk markings <ul style="list-style-type: none"> ■ At signal-controlled intersections ■ In school zones and adjacent to parks, especially to guide pedestrians along preferred legs ■ Across arterials and collectors ■ Where a shared-use path, bike boulevard, or bike route crosses a roadway • The bars in high-visibility crosswalks should be spaced 2-3 ft apart to increase the visibility. • Stop lines at stop-controlled and signalized intersection approaches should be striped between 4 ft-30 ft from the edge of the crosswalk. • Crosswalks should be oriented perpendicular to streets, minimizing crossing distances for pedestrians.
<p>Crosswalk Visibility Enhancements</p> 	<p>Crosswalk visibility enhancements such as nighttime lighting, parking restrictions, and pedestrian warning signs are used to identify optimal or preferred locations for people to cross and help reinforce the driver requirement to yield the right-of-way to pedestrians. These countermeasures are a minimum first line of defense where safety at intersections is in question.</p> <p>Intersection Characteristics</p> <ul style="list-style-type: none"> • At uncontrolled crosswalks across collector and arterial streets • Near schools, parks, and pedestrian generators • Where paths cross streets 	<ul style="list-style-type: none"> • Marking crosswalks and increasing crosswalk visibility should almost always occur in conjunction with other pedestrian safety countermeasures on streets with over 9,000 ADT. • Install pedestrian warning signs (MUTCD W11-1, W11-2, W11-15, or S1-1). On streets with more than 3 lanes, use Yield Here for Pedestrians MUTCD R1-5 and shark teeth markings). • Restrict parking within 20 ft-50 ft of the crosswalk to improve visibility. • Ensure adequate nighttime lighting levels. Crosswalks with high pedestrian activity across collectors and arterials should have high illuminance.



Facility Type	Description + Facility Selection Criteria	Guidance
<p>Curb Extensions</p> 	<p>Curb extensions involve extending the curb beyond the sidewalk or buffer edge to shorten crosswalk length and increase visibility of people entering the crosswalk, particularly when there is on-street parking. Curb extensions are also effective tools for narrowing streets or tightening intersections to reduce motor vehicle turning speeds. Near schools and parks, they can help increase the visibility of children waiting to step into the intersection.</p> <p>Intersection Characteristics</p> <ul style="list-style-type: none"> • Where on-street parking is provided • Near schools, parks, or other areas where children may be present • Any traffic volume • Any speed • Often used on bike boulevards 	<ul style="list-style-type: none"> • Curb extensions are especially effective on streets where: <ul style="list-style-type: none"> » On-street parking is provided » Drivers habitually encroach on crosswalks or park too close to crosswalks • Corner radii should be kept as small as possible while still accommodating the design vehicle at a crawl speed. Larger design vehicles can be accommodated with mountable curbs or aprons. • Curb extensions that extend less than 6' into the street are compatible with bike lanes next to on-street parking. • Stormwater drainage concerns can pose a challenge. If needed, preserve 1-2 ft between the sidewalk and curb extension to provide space for drainage structures or install additional drainage inlets to prevent ponding water. • Curb extensions can be an opportunity to incorporate green infrastructure, street furniture, bike parking, wayfinding, public art, or other public space elements into the street design.
<p>Median Island</p> 	<p>Median islands provide a protected refuge space in the center of two-way streets to allow pedestrians to cross the street in two steps, negotiating only one direction of traffic at a time. Islands also provide traffic calming by narrowing the roadway and creating edge friction.</p> <p>Intersection Characteristics</p> <ul style="list-style-type: none"> • At crossings of more than 1 lane of traffic in each direction • Any traffic volume (always consider on any street with 9,000 ADT or greater) • Any speed • Often used on bike boulevards 	<ul style="list-style-type: none"> • Median islands should be a minimum of 6 ft wide. An island width of 8-10' is preferred, especially at shared use path crossings or other locations where people bicycling may also be crossing to accommodate strollers and bicycles with trailers. • Follow the Manual on Uniform Traffic Control Devices (MUTCD) guidance for warning signage, signalization, pavement markings, and painted curb on the island approach. • Consider flush accessible paths through the pedestrian island to minimize the need for ramps.

Facility Type	Description + Facility Selection Criteria	Guidance
<p>Raised Crossing</p> 	<p>Raised crossings are used for traffic calming and to improve motorist yielding to people walking and biking at intersections and midblock crossings. Crosswalks are elevated to reduce or eliminate the transition from the sidewalk to the street crossing. Transition aprons on each approach to the raised intersection are marked to alert drivers of the grade change.</p> <p>Intersection Characteristics</p> <ul style="list-style-type: none"> • Typically 2-lane or 3-lane streets • Generally not on truck routes, emergency routes, and arterial streets • Less than 9,000 ADT • Speeds of 30 mph or less • Often used on bike boulevards 	<ul style="list-style-type: none"> • Raised crosswalks are typically flush with the height of the sidewalk. The crosswalk table is typically at least 10' wide. • Detectable warning strips should be provided at sidewalk edges to indicate to pedestrians that they are exiting the sidewalk and entering the street. • On-street parking should be stopped at least 20' before the marked crosswalk to provide adequate sight distances and visibility between people crossing and people driving. Consider supplementing parking restrictions with signage, pavement markings, and vertical elements. • Warning signs and pavement markings on transition aprons should be included to alert drivers. • Provide transition apron slopes between 5-8%. • Where vehicles with low height wheelbases are likely (e.g. lowboy trailers), the raised crosswalk height should be limited to 3 inches. • Stormwater drainage concerns can be an issue and additional drainage inlets may need to be installed to prevent ponding water.
<p>Raised Intersection</p> 	<p>Raised intersections are effective traffic calming measures where there are high volumes of people. The entire intersection area is elevated to create a level transition from sidewalk to street crossing. Transition aprons on all sides of the raised area are marked with pavement markings to alert drivers of the grade change.</p> <p>Intersection Characteristics</p> <ul style="list-style-type: none"> • At crossings of 2-lane or 3-lane streets • Less than 9,000 ADT • Speeds of 30 mph or less 	<ul style="list-style-type: none"> • Vehicle stop bars should be located 20 ft back from transition aprons. • The raised intersection should be designed to ensure that stormwater drainage is properly accommodated. • Special paving material, color, and/or pattern can be used to delineate and accentuate raised intersections. • Stormwater drainage concerns can be an issue and drainage inlets may need to be moved; however, raised intersections can also be used to address stormwater concerns depending on the location.



Facility Type	Description + Facility Selection Criteria	Guidance
<p>Rectangular Rapid Flashing Beacons</p> 	<p>Rectangular rapid flashing beacons (RRFBs) alert drivers to yield when pedestrians or bicyclists are crossing the street. Usually, crosswalk users activate the beacon with a pushbutton.</p> <p>RRFBs are an effective treatment option at many types of uncontrolled crosswalks. Their bright, irregularly flashing LEDs are aimed directly in motorists range of vision.</p> <p>Crossing Location Characteristics</p> <ul style="list-style-type: none"> • Multilane crossings • Typically 9,000-15,000 ADT • Speeds less than 40 mph 	<ul style="list-style-type: none"> • The design of RRFBs should be in accordance with FHWA's Interim Approval 21 for Operational Use of Pedestrian-Actuated Rectangular Rapid-Flashing Beacons at Uncontrolled Marked Crosswalks. • On streets with more than one lane in each direction, RRFBs should always be accompanied by with advance yield markings (shark teeth) and Yield Here to Pedestrian signs. • RRFBs are installed on both sides of the roadway at the edge of the crosswalk. If there is a pedestrian refuge or other type of median on roadways with multi-lane approaches, an additional beacon should be installed in the median. • High-visibility crosswalk markings should accompany RRFBs
<p>Pedestrian Hybrid Beacon</p> 	<p>Pedestrian Hybrid Beacons (PHBs) are appropriate at crosswalks on streets with higher speeds and traffic volumes. PHBs red lights signal for vehicles to come to a complete stop to pedestrians and bicyclists in the crosswalk. Crosswalk users activate PHBs with a pushbutton.</p> <p>Crossing Location Characteristics</p> <ul style="list-style-type: none"> • Multilane crossings • Any volume (typically 9,000 ADT or greater) • Typically speeds 35 mph or higher 	<ul style="list-style-type: none"> • PHBs must comply with MUTCD traffic control device warrants. • Accessible pedestrian actuation features should be used on all PHBs.

Facility Type	Description + Facility Selection Criteria	Guidance
<p data-bbox="117 253 359 280">Paths and Sidepaths</p>  	<p data-bbox="627 253 1213 427">Shared use paths and sidepaths include paved and unpaved paths that can be used by pedestrians and bicyclists. Shared use paths can follow streets for short distances but are typically located away from streets in natural and unsettled environments. Sidepaths are more typically paved and are located adjacent to streets.</p> <p data-bbox="627 443 1188 583">Path intersections should provide clear wayfinding to direct users. Where heavily utilized or around curves, a centerline can encourage users to stay to the right. Crossings at intersections and driveways should draw motorists' attention and encourage yielding.</p> <p data-bbox="627 599 1150 626">Characteristics of Adjacent Street (for Sidepaths)</p> <ul data-bbox="642 643 1213 865" style="list-style-type: none"> • Always consider sidepaths where speeds are 45 mph or greater • Always consider where volumes are 6,000 ADT and greater • In areas of denser development and/or higher pedestrian traffic, protected bike lanes may be provided instead of sidepaths 	<ul data-bbox="1276 253 1982 1032" style="list-style-type: none"> • Paths and sidepaths should be designed according to state and national standards. This process includes establishing a design speed (typically 18 mph) and designing path geometries accordingly. • 10 ft should be used as a minimum width for paths and sidepaths. Wider widths (or separate facilities for bicyclists and pedestrians) are necessary where higher bicycle and pedestrian traffic is expected in order to minimize conflicts between users. • Special consideration must be given to the design of roadway crossings and intersections to increase visibility, clearly indicate right-of-way, and reduce crashes. • Alternative accommodations should be sought when there are many intersections and commercial driveway crossings per mile. • Local governments assume maintenance (and, where applicable snow-clearing) responsibilities for paths and sidepaths, which has an impact on street and parks operations budgets. • Vertical objects close to the path edge can endanger users and reduce the comfortable usable width of the path: vertical objects should be set back at least 3 ft from the edge of the path, for a height of 8 ft. • 3 ft wide (minimum) shoulders provide space for users who step off the path to rest or to allow users to pass one another. • Sidepaths should not be located immediately next to the curb unless they are at least 12 ft wide in total.

Facility Type	Description + Facility Selection Criteria	Guidance
<p data-bbox="117 253 369 279">Protected Bike Lanes</p>  	<p data-bbox="627 253 1205 456">Protected bike lanes dedicate spaces to people on bicycles that are physically separated from both motorists and pedestrians. Common vertical separators include planters, curbs, plastic delineators, and on-street parking. Protected bike lanes can be designed to accommodate one- or two-way travel, and can be constructed at the sidewalk level or street level.</p> <p data-bbox="627 472 1215 581">Bicycle signals, lateral offsets, signs, and markings can improve safety at intersections and driveways. Transitions to paths and other bicycle facilities should be clear, comfortable, and intuitive.</p> <p data-bbox="627 597 989 623">Characteristics of Adjacent Street</p> <ul data-bbox="642 639 1115 704" style="list-style-type: none"> • Any volume (typically 6,000 ADT or greater) • Speeds less than 45 mph 	<ul data-bbox="1276 253 1976 813" style="list-style-type: none"> • Protected bike lanes can generally be considered on any street with one or more of the following characteristics: <ul data-bbox="1297 326 1835 513" style="list-style-type: none"> » 3 or more traffic lanes » Frequent turnover for on-street parking » Frequent bike lane obstructions » Streets that are designated as truck or bus routes » Critical connections to key destinations/routes • The minimum width of a one-way protected bike lane is 7 ft exclusive of the gutter; a desirable width is 8 ft which includes a 3 ft buffer separation. • Protected bike lanes are preferred over multi-use paths in higher density areas, commercial and mixed-use development, and near major transit stations or locations where pedestrian volumes are anticipated to exceed 200 people per hour on a multi-use path. • Parking removal may be required to construct protected bike lanes.

Facility Type	Description + Facility Selection Criteria	Guidance
<p>Buffered Bike Lanes</p> 	<p>Buffered bike lanes include a striped buffer area in addition to the bike lane, typically positioned between the bike lane and adjacent travel lane. In some cases, the buffer may be placed next to on-street parking to mitigate collisions with opening doors.</p> <p>Cross-hatched buffers, clearly communicate the buffer's function. Where pavement width allows and on-street parking exists, buffers can be provided on both sides of the bike lane.</p> <p>Street Characteristics</p> <ul style="list-style-type: none"> • 2,500-6,000 ADT • 25-30 mph or lower 	<ul style="list-style-type: none"> • The minimum width of a buffered bike lane adjacent to parking is 6 ft, with a preferred width of 7 ft. Buffered bike lanes more than 8 ft wide may see drivers using them as a thru-lane or parking lane. • Buffers are to be broken where curbside parking is present to allow cars to cross the bike lane. • The minimum buffer width is 18 in. There is no maximum. Diagonal cross hatching should be used for buffers <3 ft in width. Chevron cross hatching should be used for buffers >3 ft in width. • A painted buffer of 1-2 feet between the bike lane and the motor vehicle traffic lane is preferred above speeds of 25 mph. • Buffered
<p>Bike Lanes</p> 	<p>Conventional bike lanes provide space within the street for exclusive bicycle travel. Signs and markings remind motorists that the bike lane is intended solely for bicyclist travel.</p> <p>Bike lanes should be striped all the way to the intersection (and not disappear at turn lanes) and through intersections if the need for clarity exists. Bike lanes should meet minimum width requirements exclusive of the gutter pan.</p> <p>Street Characteristics</p> <ul style="list-style-type: none"> • 2,500-6,000 ADT • 30 mph or lower 	<ul style="list-style-type: none"> • The minimum width of a bike lane adjacent to a curb is 5 ft exclusive of a gutter; a desirable width is 6 ft. • The minimum width of a bike lane adjacent to parking is 5 ft, with a preferred width of 6 ft. • Parking T's or hatch marks can highlight the door zone on constrained corridors with high parking turnover to guide bicyclists away from doors.

Facility Type	Description + Facility Selection Criteria	Guidance
<p>Advisory Bike Lanes</p> 	<p>Advisory bike lanes are an experimental design treatment typically applied on low-volume streets that are too narrow to fit standard bicycle lanes and car travel lanes separately. The dashed markings give a dedicated space for people biking but are also intended to be available to motorists if space is needed to pass oncoming traffic and the lane is not being used by someone biking. Motorists yield to people using the advisory bike lane and wait to pass until there is no oncoming traffic.</p> <p>Street Characteristics</p> <ul style="list-style-type: none"> • 2,500-4,000 ADT • 25-30 mph or lower 	<ul style="list-style-type: none"> • Experimental approval from FHWA is required to use this traffic control treatment. Due to the number of active experiments, FHWA is not considering new requests to experiment as of August 2023 while the data from current experiments are collected and analyzed. FHWA may change its stance on requests to experiment or FHWA may allow advisory bike lanes under a future Interim Approval. • Central vehicle lane should be between 16 and 18 feet to allow most motorist to pass with minimal to no encroachment into the advisory lane, or beteen 10 and 13.5 feet to force yielding and encroachment. • Central vehicle lane space widths beteen 13.5 ft and 16 ft should be avoided, as this space may appear wide enough for motorists to operate side by side without encroaching into the advisory lane, resulting in unexpected conflict when passing is required. • Advisory bike lane widths should be the same width as the standard bicycle lane width (minimum 5 ft, desirable 6ft) • The forthcoming AASHTO Guide for the Development of Bicycle Facilities includes additional design guidance for this treatment. • Education to instruct road users (people driving and bicycling) how to travel correctly on the corridor is recommended.
<p>Bike Boulevards</p> 	<p>Bike boulevards optimize local streets for bicycle travel by reducing traffic volumes and speeds. Some measures can be implemented with roadway resurfacing and signage, while others require construction.</p> <p>Beyond signs and markings, bike boulevards generally include traffic calming features – such as speed humps, curb extensions, traffic circles, and traffic diversion treatments. In Sun Prairie, they are to be used on streets where the speeds and volumes need to be reduced to make it more bikeable and low-stress, especially where children and families are present.</p> <p>Street Characteristics</p> <ul style="list-style-type: none"> • See Figure 18 for guidance on acceptable traffic volumes and speeds. 	<ul style="list-style-type: none"> • Bicycle boulevards can range from 12 ft-22 ft, apart from on-street parking, if present. • Wayfinding signage may be required to direct bicyclists. Additional traffic control at minor intersections may be considered to prioritize pedestrian and bicycle through travel. • Treatments like curb extensions increase the visibility of children at crossings, due to their short stature. • The curb extensions, traffic circles, and traffic diverters may be an opportunity for plantings, rain gardens, and green infrastructure.

Facility Type	Description + Facility Selection Criteria	Guidance
<p>Shared Lane Markings</p> 	<p>Shared lane markings (or “sharrows”) are pavement markings used to indicate a shared lane environment for bicyclists and motorists. Shared lane markings are used on roadways where no bicycle lanes are present and where vehicular travel lanes are too narrow for bicyclists and motor vehicles to safely operate side by side. They are only appropriate on low speed and low volume streets.</p> <p>Street Characteristics</p> <ul style="list-style-type: none"> • Used on bike boulevards to indicate correct bicyclist positioning • When used alone without bike boulevard treatments: <ul style="list-style-type: none"> » 25 mph or lower and less than 1,000 ADT (appropriate for all areas) » 25 mph or lower and 1,000-2,500 ADT (appropriate in areas not near places visited by children and families) 	<ul style="list-style-type: none"> • The marking’s centerline must be at least 4 ft from the curb or edge of pavement where parking is prohibited to direct bicyclists away from gutters, seams, and other obstacles. • The marking’s centerline must be at least 11 ft from the curb where parking is permitted so that it is outside the door zone of parked vehicles. • On streets with posted speeds of 25 mph or lower, the preferred shared lane marking placement is in the center of the travel lane to minimize wear from motor vehicles and encourage bicyclists to use the full travel lane. • The pavement markings should be paired with “Bikes May Use Full Lane” signs (MUTCD R4-11) to clearly inform road users that bicyclists may choose to fully occupy travel lanes, discourage passing by motor vehicles, and also inform bicyclists that they can or may operate towards the center of the travel lane for safest operation.
<p>Bicycle Route Wayfinding</p> 	<p>A bicycle route wayfinding system consists of signage and/or pavement markings to guide bicyclists to their destinations. Wayfinding can reduce any stress bicyclists may experience due to navigation and serves as an opportunity for economic development.</p>	<ul style="list-style-type: none"> • Effective wayfinding should feature information about route direction, destination, and travel distance. • Signage should be consistent and located at predictable intervals and/or important route junctions. • The Dane County Bicycle Wayfinding Manual provides guidance that the City of Sun Prairie can follow for paths and on-street bikeways.



5 PROPOSED ACTIVE TRANSPORTATION NETWORK

The proposed bikeways, paths, and sidewalks in this Plan have been shaped by the three main goals of *Sun Prairie in Motion*—increase walking and biking, improve safety, and promote equitable investment.

5.1 Bikeways and Paths

Approach to Developing the Bikeways and Paths Network

Many resources shaped the development of the recommended bikeway and path network for Sun Prairie. Figure 20 summarizes the inputs that were

referenced to develop the draft network, and how each aligned with the active transportation planning principles referenced at the start of Chapter 4. Many of these inputs are described in Chapter 3. The project team began by reviewing the bikeways, paths, and roads recommended in previous plans, to determine feasibility and appropriateness; the network analyses highlighted neighborhoods and corridors that required extra attention and effort.

Figure 20. Bikeway and Path Network Planning Inputs

	Input	Corresponding Principle	How Used/Notes
Previous Plans	Recreational Loop Plan (2022)	Prioritize walking & biking	Where possible, the planning team incorporated the recreational loop into the biking and path network so that recommendations will prioritize biking on those segments
	Sun Prairie Comprehensive Plan (2019)	Close gaps; Prioritize walking & biking	The planning team reviewed planned streets in growth areas (and areas to be annexed by the City) and proposed bikeway connections for future collectors and arterials streets. Some bike boulevards were identified on future local streets.
	Other Previous City, MPO, and County Plans)	Close gaps; Use data	The planning team reviewed proposed paths and bikeways in previous plans to see if they were appropriate for inclusion in the recommended bikeway and path network.
Network Analysis	Trip Potential Analysis	Close gaps, Prioritize walking & biking	Highlighted areas where people are most likely to bike for transportation purposes and where new low-stress bikeways would provide immediate benefits for people.
	Bicycle and Pedestrian Crashes & Environmental Justice Areas	Use data; Focus on equity	Identified corridors with bicycle and pedestrian crashes, where increased separation from motor vehicles could increase safety and benefit low-income households and people of color.
	Short Trips Analysis	Use data; Close gaps; Focus on equity	Highlights areas with short trips (such as in downtown Sun Prairie and across US 151 where people would be likely to switch from driving to walking or biking. Many areas correspond with the Environmental Justice Areas.
Public Engagement	Public Input (Map-Based)	Close gaps, Design for children	Identified routes that people report as high-stress, desired routes for biking, key destinations, and barriers.
	Public Input (Focus Groups)	Focus on equity; Be Inclusive	Identified bikeway type preferences and focus areas for safer infrastructure
Other	Traffic, Parcel Ownership, Topographic Map	Close gaps; Use data	Informed selection of appropriate bikeway types and corridors and publicly-owned parcels that would provide realistic connection opportunities.
	Locations of Schools and Parks	Design for children	Highlighted important focus areas and destinations in the bikeway and paths network; informed the selection of bicycle boulevard treatments and other bikeway facility types.
	Facility Selection and Design Toolkit	Use data; Be inclusive	Informed the selection of appropriate bikeway facility types

Recommended Bikeways and Paths

The recommended path and bikeway network for Sun Prairie is shown on Figure 21 through Figure 24 as an overview map and three area maps for different parts of Sun Prairie. The network builds upon existing bikeways and paths, with an emphasis on low-stress bike facility recommendations. It will provide connections to schools and parks frequented by children and families; prioritize sidewalk and biking over parking along Main Street in downtown Sun Prairie; and focus on providing extra connections and safer infrastructure in environmental justice areas. Bike lanes along high-traffic, high-speed streets such as South Grand Avenue and North Bristol Street will—and should—remain in the active transportation network, but they do not necessarily comprise “low-stress” facilities that are designed for use by children.

Key recommendations:

- Protected bike lanes are recommended on West Main Street between Clarmar Drive and Grove Street: they will improve safety along a high-crash corridor that is adjacent to an environmental justice area. Protected bike lanes can be achieved by removing parking lanes from one or both sides.
- New bridges or underpasses across US 151 are recommended in four locations. One potential location between West Main Street and South Grand Avenue could be a new street that would connect the commercial area northwest of US 151 to the new residential Smith’s Crossing neighborhood. The remaining proposed bridge/underpass locations are recommended for pedestrian and bicycle use only.
- Bike boulevards are recommended in several locations near schools, on both existing and planned streets. Traffic calming features on bike boulevards such as curb extensions and pedestrian islands provide safety benefits by slowing traffic and increasing the visibility of children crossing the street at crosswalks, even during heavy traffic at arrival and dismissal.

- The recommended path along the Wisconsin and Southern Railroad running diagonally along the southeast part of Sun Prairie is highly desired according to public input. Within the city limits, much of that path can be built on publicly-owned or undeveloped parcels, limiting the need to involve the railroad. (Even though the corridor is owned by the State of Wisconsin, it can be difficult to negotiate and purchase easements along active rail lines.) This path would connect with a potential future path along the same railroad line in the City of Madison.



A sidewalk-level protected bike lane in Inman Square in Cambridge, MA

Figure 21.

**Overview Map
Recommended Bikeways and Paths
(Inset Maps on Following Pages)**

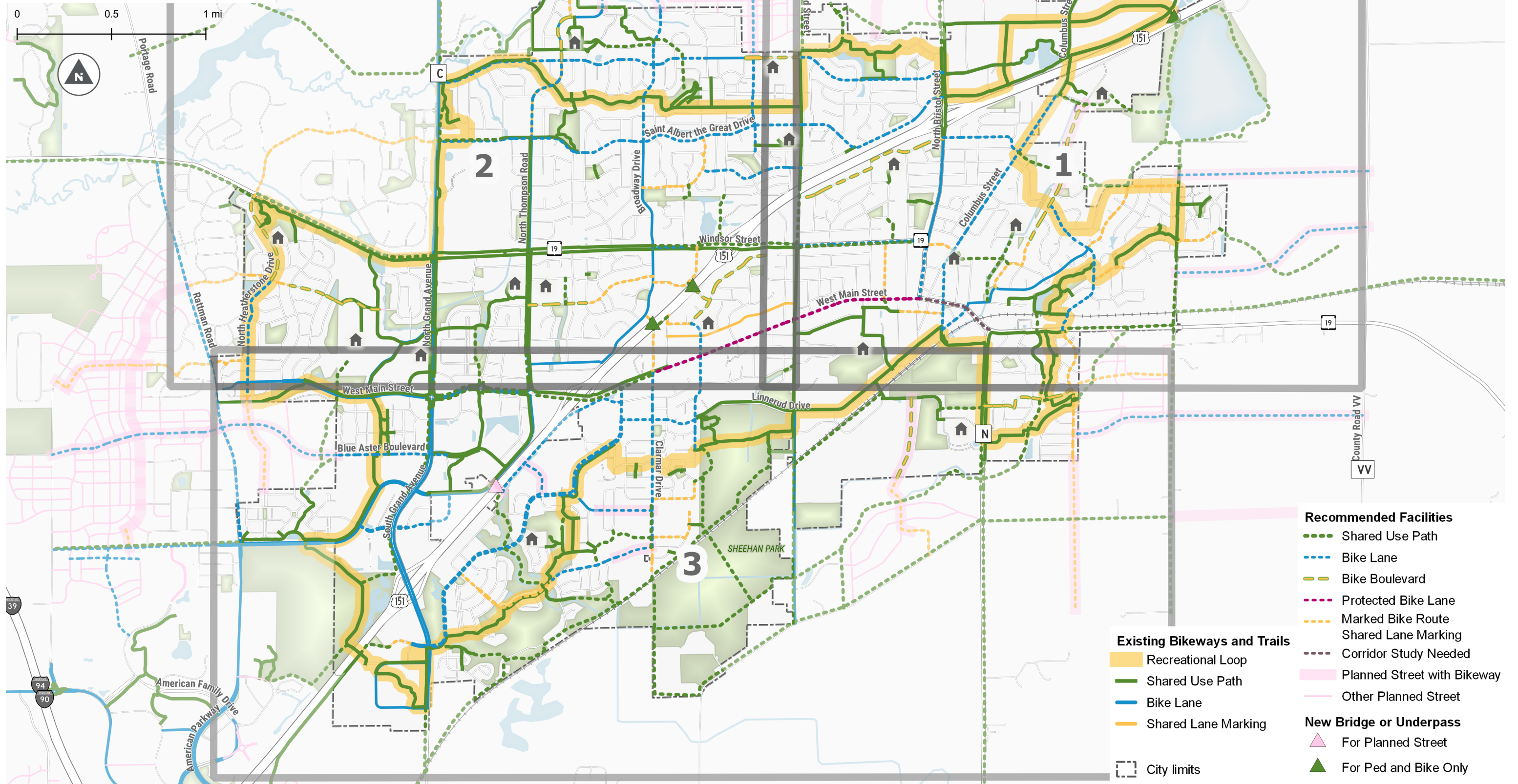






Figure 22.
East Area
Recommended Bikeways and Trails



0.5 1 mi

Existing Bikeways and Trails

-  Recreational Loop
-  Shared Use Path
-  Bike Lane
-  Shared Lane Marking

 City limits

Recommended Facilities


-  Shared Use Path
-  Bike Lane
-  Bike Boulevard
-  Protected Bike Lane
-  Marked Bike Route/
Shared Lane Marking
-  Corridor Study Needed

 Planned Street with Bikeway

 Other Planned Street

New Bridge or Underpass

 For Planned Street

 For Ped and Bike Only

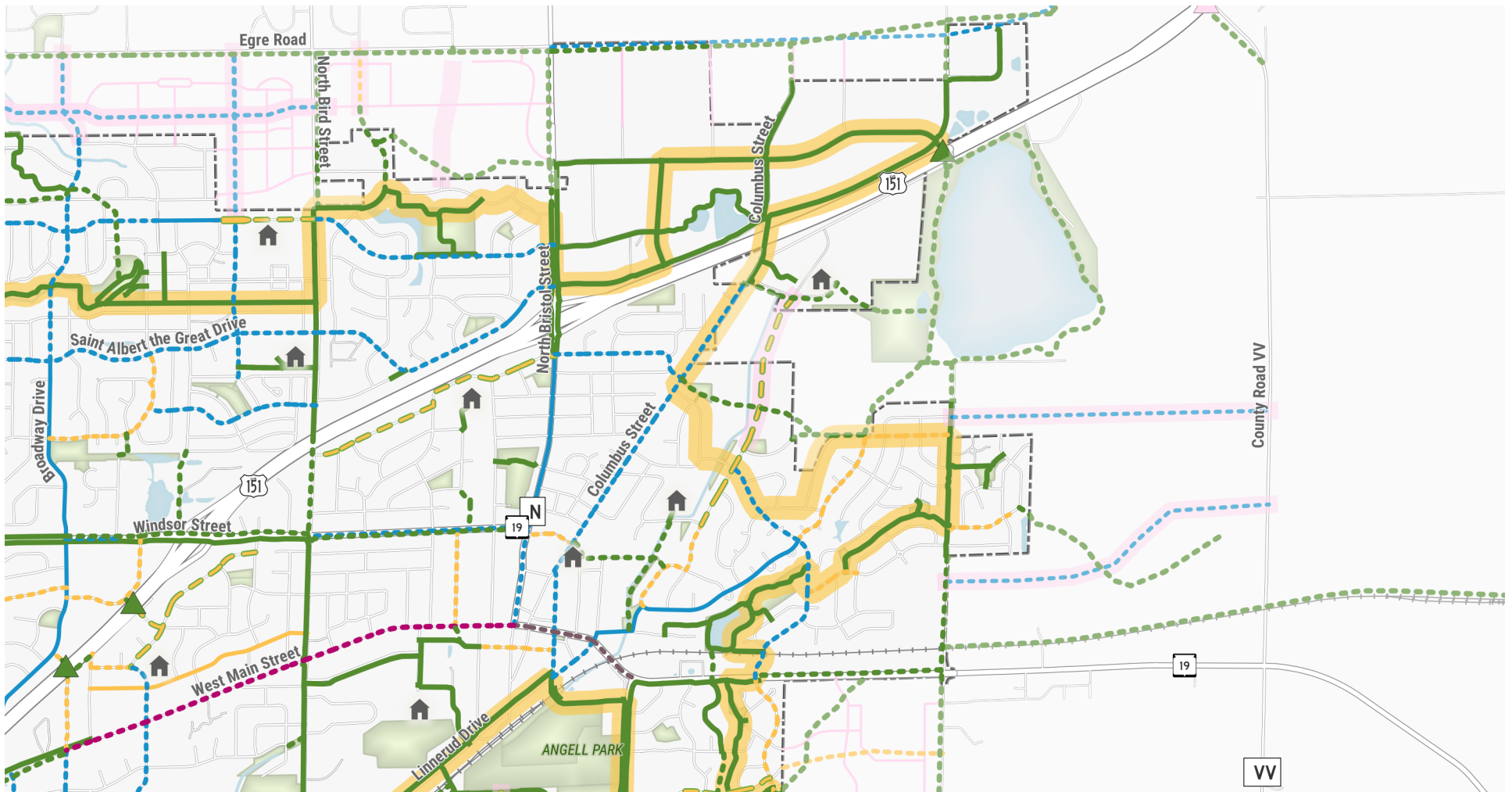






Figure 23.
Northwest Area
Recommended Bikeways and Trails





0.5 1 mi

Existing Bikeways and Trails

-  Recreational Loop
-  Shared Use Path
-  Bike Lane
-  Shared Lane Marking

 City limits

Recommended Facilities


-  Shared Use Path
-  Bike Lane
-  Bike Boulevard
-  Protected Bike Lane
-  Marked Bike Route/
Shared Lane Marking
-  Corridor Study Needed

 Planned Street with Bikeway

 Other Planned Street

New Bridge or Underpass

 For Planned Street

 For Ped and Bike Only

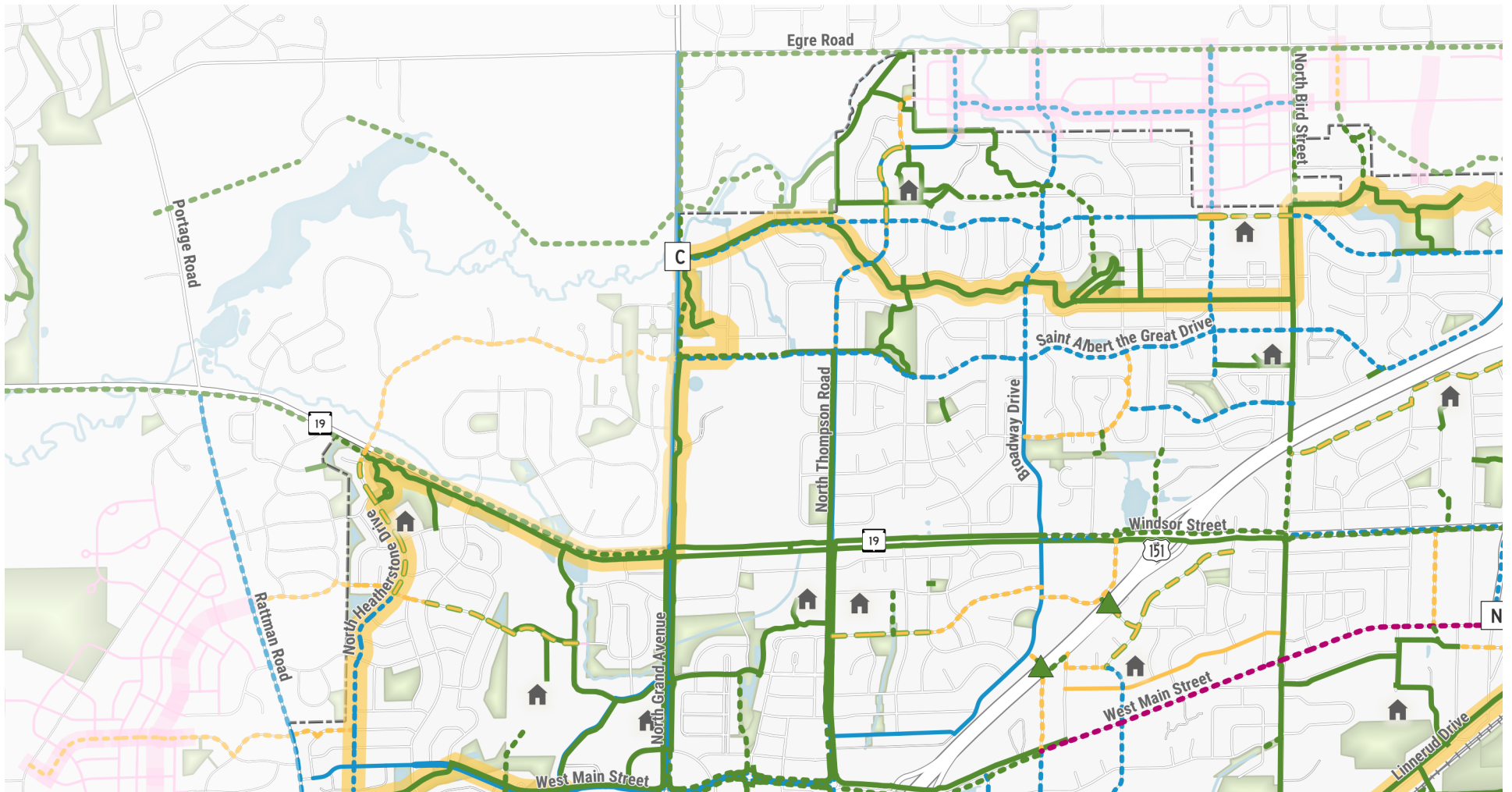
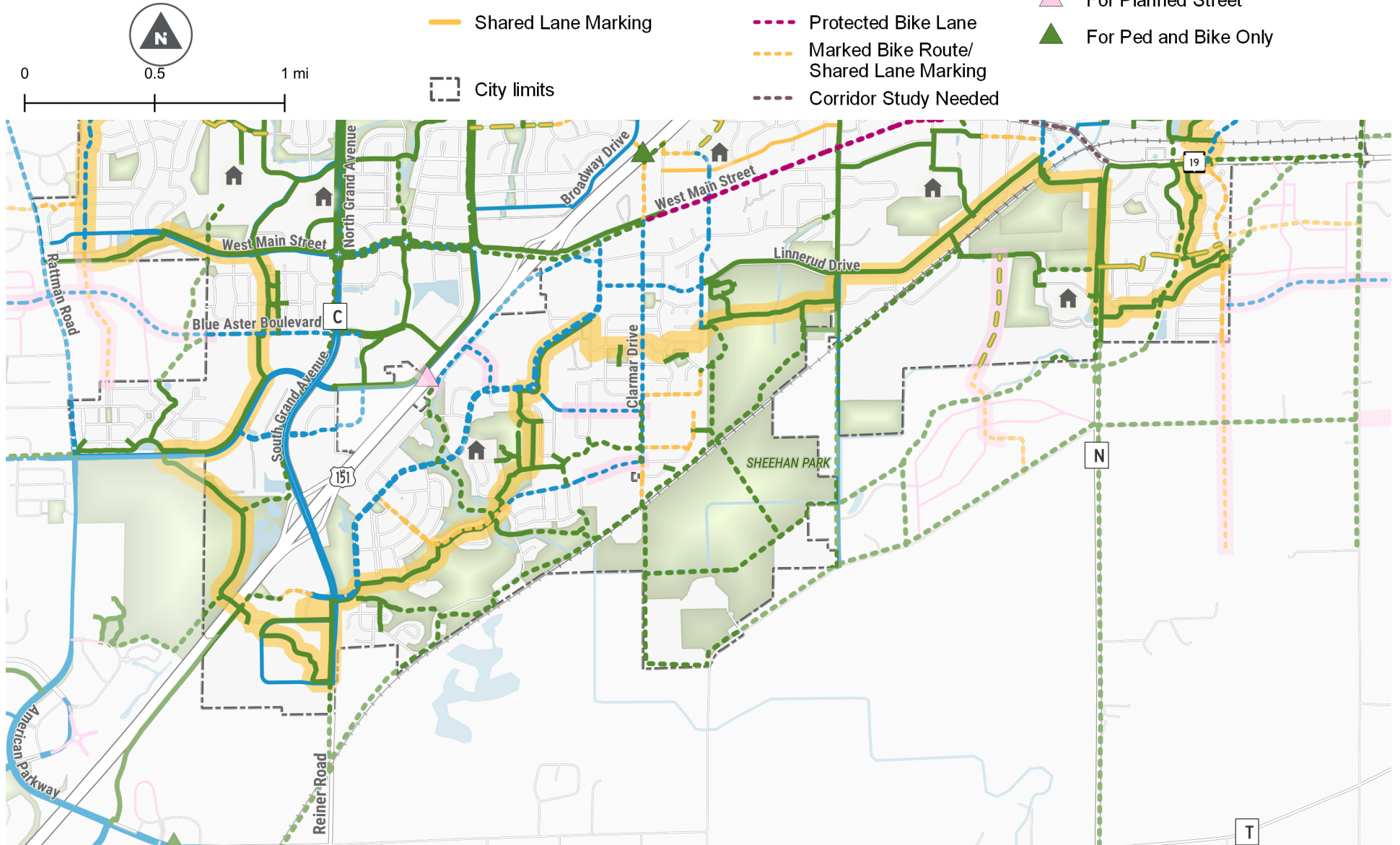


Figure 24.
Southwest Area
Recommended Bikeways and Trails

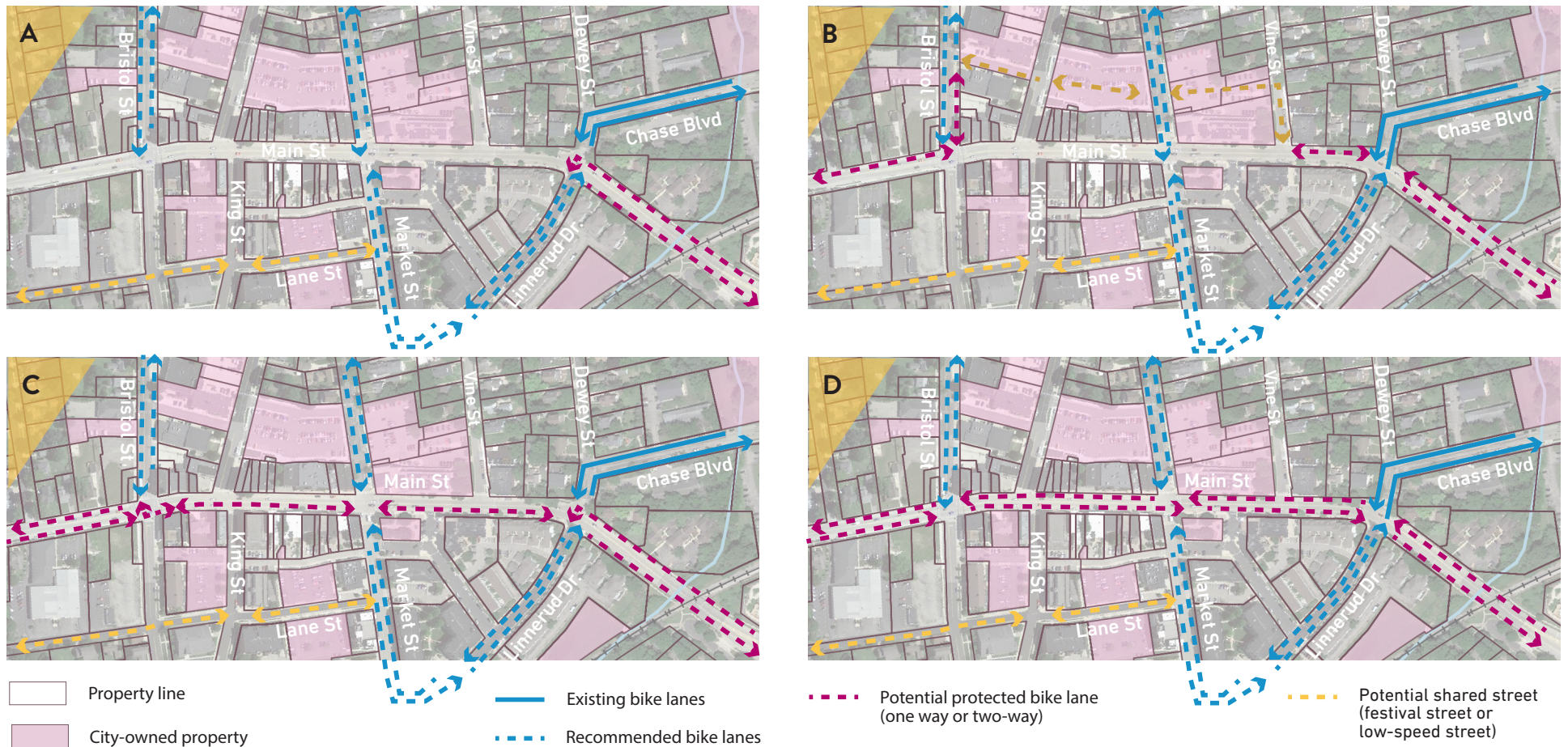


Downtown East Main Street

For the portion of East Main Street that traverses the downtown, a follow-up corridor study will be necessary to determine the feasibility and desirability of several alternative bicycle route options through downtown. Protected bike lanes (or regular bike lanes) would require the removal of on-street parking on both sides, but could also allow for wider sidewalks, allow for greater separation of both bicyclists and pedestrians from car traffic, and the space

between the bike lane and the sidewalk can be used for lampposts and other street furnishings (see image on page 49). The City of Sun Prairie is already planning on removing parking on the south side of East Main Street between King Street and Cannery Square in order to construct wider sidewalks.

Figure 25. Alternative options for routing bicyclists through downtown Sun Prairie on low-stress bicycle facilities, considering city-owned property.



5.2 Sidewalks

Sun Prairie zoning and subdivision ordinances require all new connecting streets to be built with sidewalks (or a sidepath) on both sides. This Plan recommends that the City of Sun Prairie construct sidewalks or sidepaths on both sides of the street when streets are due for full reconstruction or during other major projects such as replacing utilities (water, wastewater, sewers) or adding curb and gutter. The sidewalk recommendations in this Plan should be constructed on existing streets through a standalone sidewalk infill program funded by City tax levy and federal grants. Rattman Road in the Town of Burke is also included in the analysis, as it will be annexed by the City in 2036.

Approach to Identifying Sidewalk Recommendations

Figure 26 summarizes the inputs that were referenced when developing the sidewalk recommendations, and how each aligns with the active transportation planning principles referenced at the start of Chapter 4. Some of these inputs are described in Chapter 3. The project team started by reviewing the sidewalk layer provided by the City of Sun Prairie and the sidewalk inventory maintained by the Greater Madison MPO. Extensive updates were made to reflect the growth in Sun Prairie’s neighborhoods and the construction of new sidewalk by the City in recent years. The gaps were then analyzed and reviewed to determine which streets should be prioritized for sidewalks.

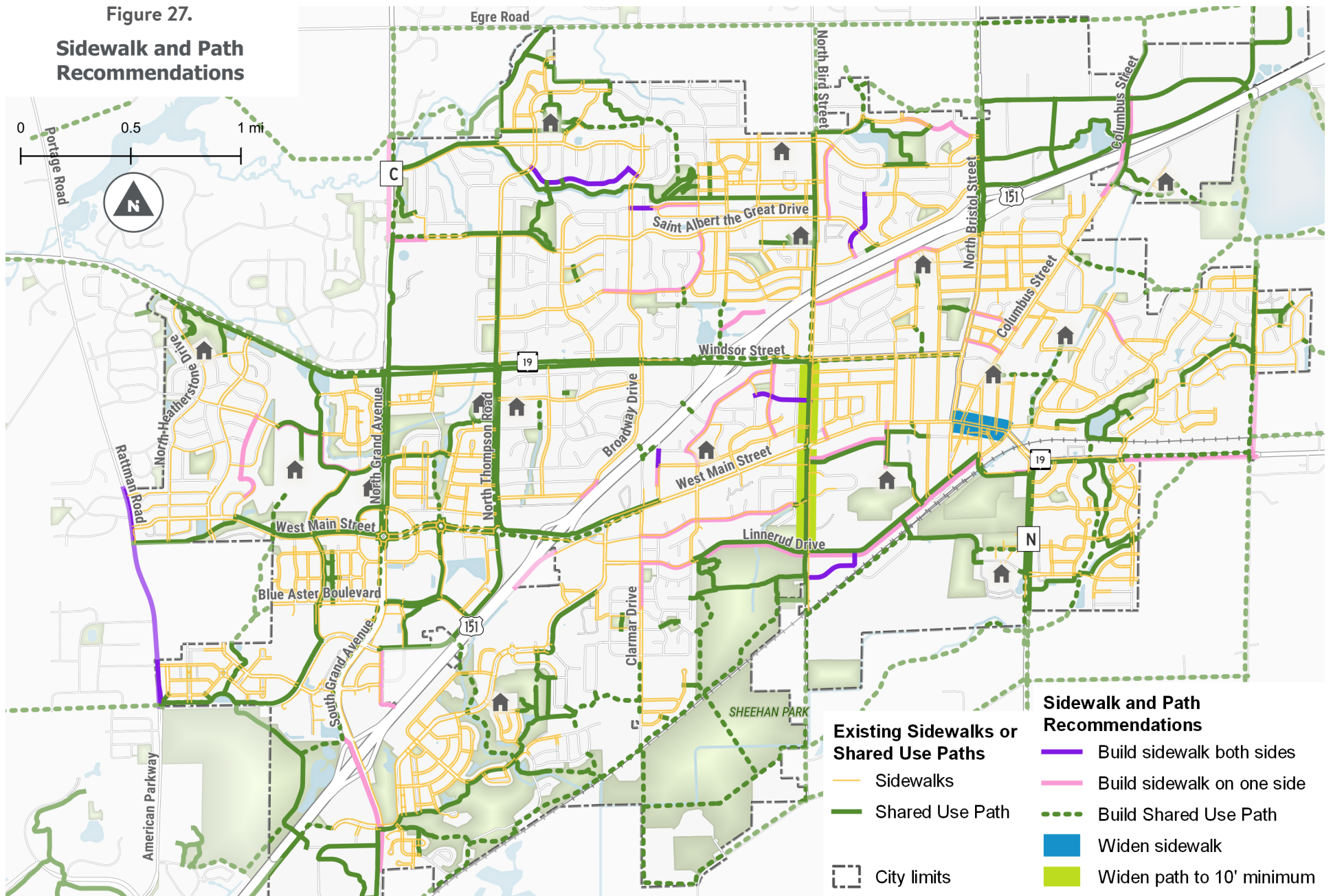
Sidewalk Recommendations

The sidewalk gaps recommended to be filled with a sidewalk infill program are shown on Figure 27 along with the shared-use path recommendations from the bikeway and paths network. New sidewalks or paths will close gaps along high-speed and high-volume streets like Windsor Street (STH 19) and W. Main Street, and strengthen connections to schools and parks frequented by children and families. Streets that have no sidewalks on either side may not necessarily be higher priority than streets that have one sidewalk. Sidewalks on East Main Street through downtown need to be widened to provide enough space for people to walk side by side; along with additional amenities like benches, bike racks, and other street furniture. The path along North Bird Street—which is currently 8 feet wide and in good condition—should eventually be widened to 10 feet.

Figure 26. Sidewalk recommendations inputs

Input	Corresponding Principle	How Used/Notes
Existing sidewalk and shared-use path layers	Use data	Identified where existing sidewalks and shared-use paths are present; the planning team updated them to reflect conditions using a Google satellite aerial photo scan.
Greater Madison MPO regional sidewalk inventory	Close gaps; Use data	All streets classified as collectors and arterials that were missing sidewalks or shared-use paths on one or both sides were included as priority sidewalk gaps. The planning team then updated the layer to reflect current conditions using a Google satellite aerial photo scan.
Public Input (Focus Groups)	Focus on equity; Be inclusive	Identified focus areas for safer infrastructure such as sidewalks.
Public Input (Downtown walking tour)	Be inclusive	Identified need for wider sidewalks for pedestrians and streetscape amenities along Main Street through downtown Sun Prairie.
Traffic Volumes	Use data	Local and residential streets that had greater than 1,000 vehicles per day were reviewed to determine whether they were appropriate for inclusion in the priority sidewalk gaps.
Schools and Parks	Design for children	Highlighted important focus areas and destinations in the sidewalk network.

Figure 27.
Sidewalk and Path Recommendations



5.3 Pedestrian Crossing Safety Areas

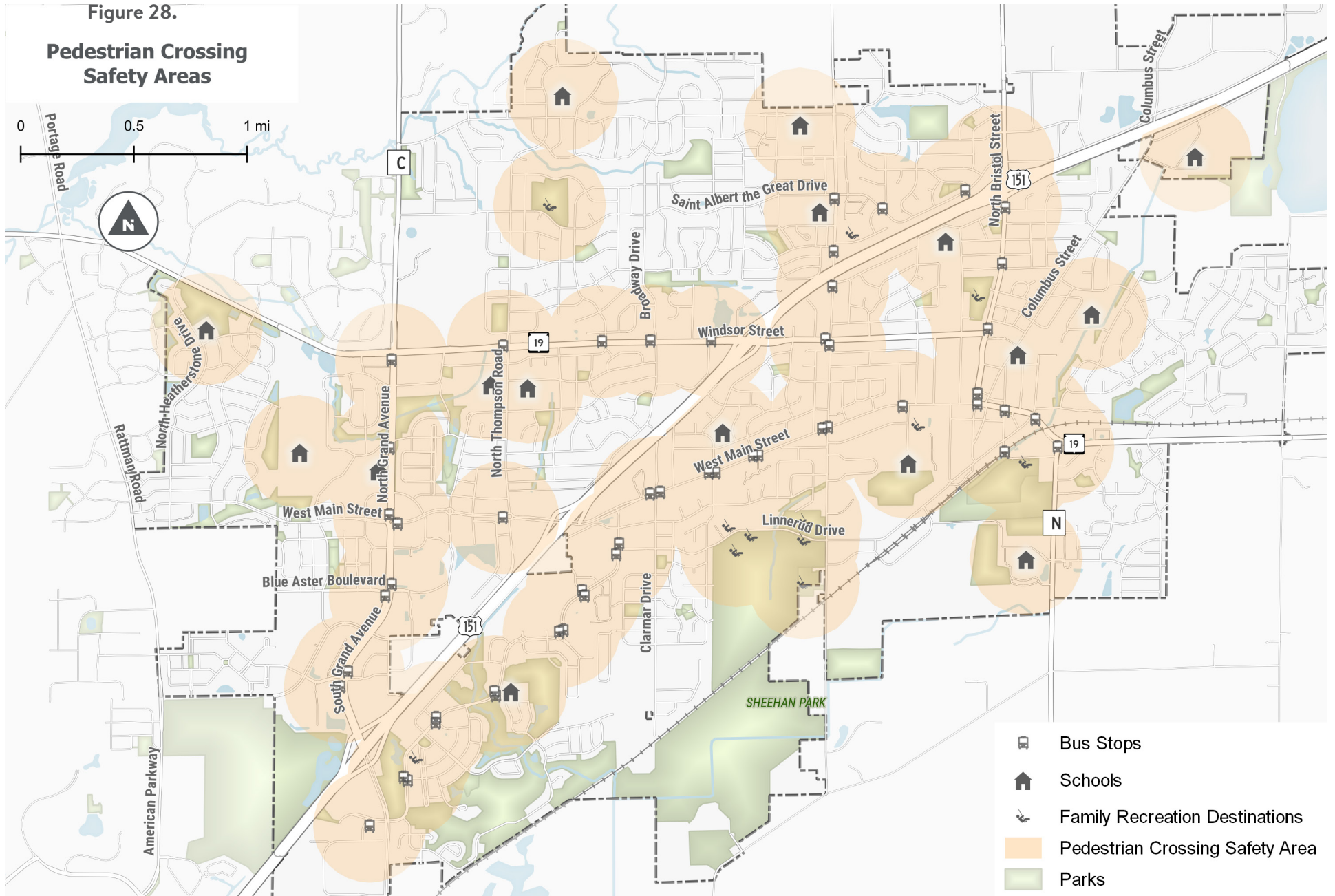
During the development of the plan, schools, bus stops, and places frequented by children were mentioned as priorities for pedestrian crossing improvements. The Pedestrian Crossing Safety Areas in Figure 28 highlight areas that should be prioritized for investment in safe and comfortable pedestrian crossings such as high visibility crossings, curb extensions, median islands and other pedestrian facilities described in the Facility Selection and Design Toolkit in Chapter 4. The following criteria were used to identify Pedestrian Crossing Safety Areas:

- Within 0.25 mile of bus stops; incidentally, this means that nearly all crossings of arterial streets are included in the Pedestrian Crossing Safety Areas
- Within 0.25 mile of a school
- Within 0.25 mile of a family recreation destination such as certain parks, the library, the aquatic center, or the YMCA

As project opportunities arise and funding becomes available, the City should use the following approach to improve crossings in Sun Prairie:

- Review projects in the CIP to and check to see if they overlap pedestrian crossing safety areas;
- Leverage opportunities through partnerships with WisDOT to improve the safety of crossings of state and US highways.
- Improve safety of pedestrian crossings using the Facility Selection and Design Toolkit, first in the equity priority areas and then citywide as opportunities arise. Implement context-specific enhancements that respond to the expected pedestrian design users at the crossing. For example, crossings where children or older adults will be frequent should accommodate slower walking speeds.







6 RECOMMENDED POLICIES AND PROGRAMS

Policies and programs are key ingredients to creating a place where walking, bicycling, and rolling are encouraged, safe, and convenient. Policies are set by City government, while programs are led by City staff, partner organizations, businesses, or schools.

6.1 Introduction

The policies and programs recommended for Sun Prairie will help the City achieve its active transportation goals of increasing walking and biking, improving safety, and promoting equity. These recommendations will also provide a pathway for Sun Prairie to achieve national recognition in two programs:

- Under the Walk Friendly Communities (WFC) program of the University of North Carolina Highway Safety Research Center, designation as a bronze-level Walk-Friendly Community,
- Under the Bicycle-Friendly Communities (BFC) program of the League of American Bicyclists, advancing from bronze- to gold-level designation

These designations both use the familiar Five Es of Transportation as a framework for organizing their objectives. The correlation between these frameworks is shown in the Figure 29.

The policy and program recommendations will be tagged with a bicycle or pedestrian icon to indicate whether it will help the BFC or WFC score. They are divided into three categories for organizational purposes:

- Low Effort/Low Cost
- Medium Effort/Medium Cost
- High Effort/High Cost

Figure 29. Relationship between WFC and BFC scoring categories

BFC Scoring Categories	Objective	WFC strategies
Equity & Accessibility	Create a community where everyone can walk, bike, and roll	N/A
Engineering	Create safe and convenient places to walk, ride, and park your bike.	Engineering & Design
Education	Give people of all ages the skills and confidence to ride, and educate people driving about how to interact with people walking and biking.	Education & Encouragement
Encouragement	Build a strong walking and bicycling culture that welcomes and celebrates all forms of biking and staying active on a city's streets and sidewalks.	
N/A	Reinforce a culture of safe driving using law enforcement strategies	Enforcement
Evaluation & Planning	Plan for bicycling and walking as a safe and attractive transportation option	Planning & Policy
	Collect data to measure, track, and document the results	Community Data & Evaluation

6.2 Low Effort/Low Cost Initiatives

The strategies and initiatives that will be easier for Sun Prairie to undertake are listed here first. These are the “low-hanging fruits” that are either low cost (not involving any substantial budget items) or low effort (such as adopting internal policies). The City already has funding for initiatives for some of these initiatives, or they are already in a work plan.

Conduct Project Review for Pedestrian and Bicycle Access



Review the City’s Capital Improvement Program list to ensure that the recommended pedestrian and bicycle infrastructure in this Plan is incorporated at the earliest possible stage of projects. The City should also ensure that all traffic impact studies, analyses of proposed street changes, and development projects consider mobility and access for people walking, biking, and rolling.

Comprehensive Zoning Ordinance Update



As of July 2023, the City was in the process of hiring a consultant to revise the zoning code. To support walking, biking and rolling, the zoning ordinance should be systematically reviewed and updated to allow higher-density land uses and design best practices throughout the city to create a built environment that supports active transportation through shorter trips; destinations that are closer to where people live; excellent infrastructure for walking, biking, and rolling; and attractive streetscapes. The zoning ordinance should require a complete and connected street grid that creates high intersection density, prohibits dead-ends, and requires connections to adjacent streets. If the City develops a complete streets policy that establishes street design standards, such standards should be incorporated into the zoning ordinance.

Conduct a Corridor Study on East Main Street



A follow-up corridor study will be necessary to determine the feasibility and desirability of several alternative bicycle route options through downtown. This should be completed before any sidewalk widening occurs.

Develop a Vision Zero Plan



The City has received funding from WisDOT to hire a consultant to develop a Vision Zero Plan. Vision Zero is a concept of systemic safety for all transportation users with the goal of eliminating traffic fatalities. This goal is realistic and achievable, especially on an individual-city basis. It involves recognizing that people will sometimes make mistakes, so the street system and related policies should be designed to ensure those inevitable mistakes do not result in severe injuries or fatalities.

Adopt a Complete Streets Policy and Create or Adapt Implementation Guidance



An effective Complete Streets policy will help Sun Prairie staff and elected officials by providing clear, objective, and standardized decision-making tools when approving street designs in new developments, and when making tradeoffs when determining how to retrofit existing streets to accommodate people walking, biking, and taking transit. It should meet the ten recommendations offered by the National Complete Streets Coalition and be tailored to how each policy component will be adopted (e.g., City Council approval for ordinances and departmental approval for performance measures).

Install High-Quality Bike Parking in City Public Spaces



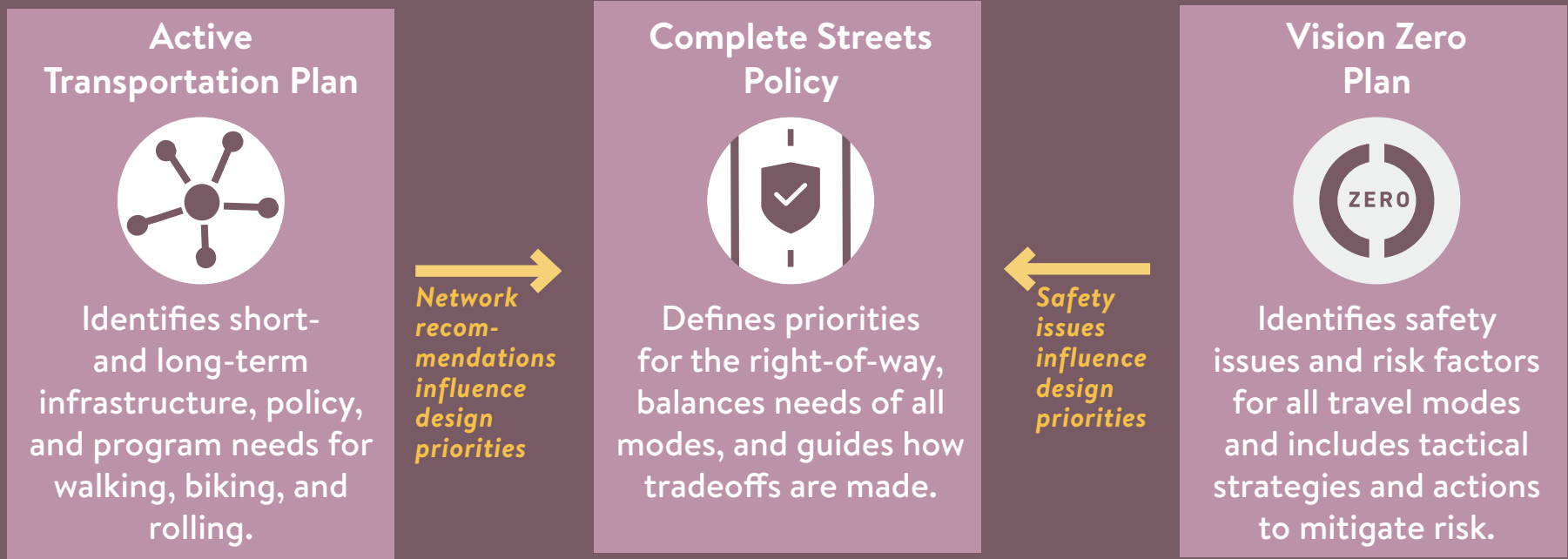
Many Sun Prairie parks are missing bike racks, which are a critical end-of-trip feature for bicyclists. Relatedly, the existing bicycle racks in Downtown Sun Prairie are not installed correctly resulting in bicycles blocking the sidewalk if mounted to the bike rack. Thus, they need to be repositioned to prevent conflicts with pedestrians. The City will need to first conduct an inventory of existing bike parking in downtown and other key public spaces to determine where bike parking is missing or needing replacement. Bicycle parking in parks and downtown should be selected and installed following the Association of Pedestrian & Bicycle Professionals Bicycle Parking Guidelines.

Recommendation Spotlight: Vision Zero Plan and Complete Streets Policy

Sun Prairie has received funding to develop a Vision Zero Plan to reduce traffic crashes and eliminate traffic fatalities. This active transportation plan also recommends that the City develop a complete streets policy.

A complete streets policy document that includes specific guidance on how to allocate street space between different priorities in the right-of-way is a decision-making tool. It would offer Sun Prairie a structured way for staff and stakeholders to discuss the needs and desires for bike lanes, sidewalks, street trees, and on-street parking when streets are being reconstructed, or when streets are built in new developments. The infrastructure recommendations in this Plan and the Vision Zero would feed into that process for street design in Sun Prairie.

The City of Madison recently underwent extensive study to create a Complete Green Streets Guide that established a city-wide “hierarchy of travel modes” (among other tools). The City of Sun Prairie could consider adopting a similar process. During the development of this Plan, a survey asked Sun Prairie residents if they agreed with Madison’s modal hierarchy: 82% of respondents said they either could live with it, or strongly supported such a hierarchy. This survey response indicates that a similar policy process might work in Sun Prairie.



6.3 Medium Effort/Medium Cost Initiatives

This section lists initiatives that will require a bit more effort, time, and money. Some are dependent on adoption receipt of grant funding. Others may have low financial cost but require more thorough consideration on the part of Common Council members, or more coordination with other groups or agencies.

Broaden the Transit Commission's Scope



Oversight of bicycle and pedestrian projects in Sun Prairie falls under the purview of the Bike Subcommittee of the Transit Commission. The Bike Subcommittee does not have official voting authority, and the spinoff of the Bike Subcommittee from the Transit Commission creates conflicting oversight when the Transit Commission and the Bike Subcommittee disagree. It also adds extra volunteer and staff time required to attend multiple meetings. The Transit Commission should transition to a full-fledged multimodal "Transportation Commission" authority over transit, bicycle, and pedestrian projects (and possibly all street design projects).

Adopt a Policy to Prioritize Projects in Equity Priority Areas



This plan prioritizes infrastructure gaps in "equity priority areas" which include:

- Areas classified as Tier 1 or Tier 2 Environmental Justice areas by the Greater Madison MPO, which are areas with lower incomes and a higher percentage of people of color or of Hispanic ethnicity.
- Areas with legally restricted affordable housing.

The City should adopt a policy to embed this same prioritization in future bicycle and pedestrian programs and infrastructure. Such a policy would prioritize investment in or near equity priority areas and could focus events programs in or near equity priority areas. Additionally, the City could ensure that development and transportation projects in or near equity priority areas

are reviewed to determine their impact (negative or positive) on the community. This could happen through the development review process or a street project development checklist.

Make Pedestrian Crossings Safer Near Transit Stops and Equity Priority Areas



In Sun Prairie, bicycle and pedestrian crashes are disproportionately higher in and near equity priority areas than in the rest of the city: equity priority areas have 7 percent of Sun Prairie's population but account for 40 percent of all bicycle and pedestrian crashes. The City should advance the planning-level recommendations from the City's Vision Zero Plan by engineering and building countermeasures that can reduce crashes near transit stops, and equity priority areas where people with lower incomes and people of color live.

Adopt Best Practice Bicycle Design Guidance



Design guidance provides direction and detailed specification for implementing bicycle facilities. Chapter 4 of this Plan ("Design Toolkit") provides bicycle facility selection guidance and basic parameters that inform facility design. However, the City should adopt more thorough design guidance and use it to guide all bicycle infrastructure projects. There are two main design guides that the City could adopt (one or both):

- The League of American Bicyclists recommends adoption of NACTO's Urban Bikeway Design Guide as policy in its entirety rather than developing a unique local standard approximated against that guide.
- The AASHTO Guide for the Development of Bicycle Facilities is the most comprehensive bikeway design guide available. However, the current version dates to 2012 and lacks guidance on innovations over the past decade. AASHTO is in the process of finalizing an updated Guide that will include substantially more material than the 2012 version.

Create Asset Management Plan for Path Repair and Repaving



The City has many miles of asphalt shared-use path that are in poor condition and are due for repaving. The current allocation of approximately \$100,000 per year in the Capital Improvement Plan is not sufficient to repair the paths on a timely schedule. The City should develop an asset management plan to track pavement quality on paths, analyze how much funding is needed every year to maintain or repave them on a regular schedule, and set aside sufficient funding to ensure paths can be repaved or repaired before they are too deteriorated.

Update Comprehensive Plan to Prioritize Walkable, Compact, and Transit-Oriented Development



Sun Prairie’s most recent Comprehensive Plan was adopted in 2019. When it is next updated (likely in the next 10 years), the land use element, housing element, and future land use plan should be updated to promote more compact, mixed-use neighborhoods, facilitate infill development, and constrain low-density development on the edges of the City. The transportation element should also be updated to incorporate the recommendations of this plan and the Vision Zero Plan, and to prioritize walking, bicycling, and transit.

Conduct Feasibility Studies for Bicycle/Pedestrian Bridge or Underpasses



The project prioritization (discussed in Chapter 7) revealed that the proposed bicycle/pedestrian bridges or underpasses that would connect the Westside Elementary School neighborhood to the Royal Oaks Elementary School neighborhood over USH 151 scored highly. The City of Sun Prairie should evaluate whether either of those potential overpasses are feasible given property boundaries, terrain, and other considerations.

Quick-Build of Low-Cost Bikeways



The average Gold Bicycle Friendly Community designee has a bicycle network mileage that is 76% of total roadway mileage. To achieve this target, Sun Prairie needs to increase its bike network to 100 miles from the current 64 miles total

of on-street bikeways and off street paths--and continue to expand the bike network as new streets are built. The recommended bikeway and path network in the Plan is designed to mostly include low-stress bicycle facilities. 33 miles of the planned network can be implemented as quick-build projects, including 10 miles of bike routes on quiet neighborhood streets and 22 miles of on-street bike lanes. These can be quickly achieved through low-cost approaches such as reducing street and lane width during resurfacing projects, marking bike lanes on streets with surplus pavement width, and using wayfinding to direct bicyclists to low-stress neighborhood streets.

Subsidize Bike Parking on Private Property



Bike racks are a critical end-of-trip feature for bicyclists. The City’s existing bicycle parking ordinance applies only to new developments. For properties not owned by the City, a program that subsidizes additional bike parking or offers to install it for free when a business or property owner asks for it can accelerate the installation of racks throughout the city.



6.4 High Effort/High Cost Initiatives

This final section sets forth the “heavy lifts” that will require substantial staff effort, coordination, and funding. The City may need to apply for numerous rounds of grant funding, planning, and design before seeing these initiatives come to fruition.

Create a Safe Routes to School Plan and Pursue Infrastructure Funding



Safe Routes to School (SRTS) is an approach that supports infrastructure and non-infrastructure projects to improve the safety of students walking and bicycling to school. Cities and school districts applying for infrastructure improvements are much more likely to get funded if they base their projects on a current SRTS plan that includes recommendations for the 5 Es (Engineering, Education, Encouragement, Enforcement, and Evaluation). Sun Prairie should work with the Sun Prairie School District to update its SRTS plan to include infrastructure and programs at recently built schools, and at both high schools, to improve eligibility for state funding. The SRTS Plan should incorporate the infrastructure recommendations in the school district’s 2021 Unusually Hazardous Transportation Plan, which, when built, would improve safety for middle and high school students and reduce transportation costs to the school district.

Develop an ADA Transition Plan to Inventory Curb Ramp and Sidewalk Gaps and Obstructions



The group walk performed in Fall 2022 for this Plan found extremely narrow sidewalks, with obstructions like planters and lampposts, on Main Street/STH 19 and throughout the downtown area. Many intersections had accessibility issues like missing or excessively steep curb ramps. These and other accessibility issues should be addressed in an Americans with Disabilities Act (ADA) Transition Plan, a document required by the ADA for agencies over 50 employees that details changes necessary to achieve equitable access to City programs, facilities, and services. The plan should include a citywide inventory of all sidewalk obstructions, maintenance issues, sidewalk gaps, pedestrian

push-button access at traffic signals, and missing sidewalk ramps, and should outline a plan for mitigating these and other accessibility gaps. A designated ADA Coordinator position at the city can help lead, and secure funding for, this effort.



The Fall 2022 group walk demonstrated many accessibility concerns in downtown Sun Prairie, including this curb ramp which is missing pavement and could have tipped this participant’s mobility scooter if the front wheel had gotten caught.



7 IMPLEMENTATION AND PRIORITY PROJECTS

The policy, program, and infrastructure recommendations in the *Sun Prairie in Motion* Plan can begin today. There are many development and funding opportunities in the near term that should not be missed. However, it will take 20-30 years to fully implement the Plan. This chapter outlines strategies the City can use to see the Plan to fruition.

7.1 Implementation Strategies

There are two types of approaches to building out the infrastructure recommendations in this Plan: incremental approach and targeted interventions.

Incremental Approach

Much of the path, bikeway, and sidewalk construction in the recommended active transportation network may be implemented through an opportunistic, incremental approach where path, bikeway, or sidewalk construction is triggered by City policies. Any time the following actions take place, the City should determine whether the recommended facilities in this plan can be implemented as part of the project:

- **Private property is subdivided or redeveloped.** City ordinances can trigger sidewalk construction or wider sidewalks, or path connections and easements.
- **A street is resurfaced.** The Sun Prairie Department of Public Works should look for opportunities by adding bike lanes on wide lanes, removing parking, or narrowing or removing travel lanes. The FHWA provides valuable guidance in their document [Incorporating On-Road Bicycle Networks into Resurfacing Projects](#).
- **A street is reconstructed.** Street reconstructions are major projects that typically occur when a street has deteriorated to the point that it cannot

simply be resurfaced. They can also occur when utilities under the street need to be replaced. Reconstruction projects often present a “blank slate” that can be configured differently than before, and adding bikeways or sidewalks can be done for a small fraction of the overall project cost.

- **A street is widened.** Street widenings are major projects that typically require utility relocation and major reconstruction and may require right-of-way acquisition. Widening projects may be used to add median refuge islands, protected bike lanes, or wider sidewalks or paths, among others.
- **A bridge is replaced or rehabilitated.** Bridges often last for 50-100 years, so it is essential to include generous accommodation for bicycle and pedestrian accommodation, even if it does not directly connect to other facilities or obvious destinations.

Targeted Interventions

Priority connections or infrastructure in this Plan may warrant a more focused, targeted approach to implementation. For these paths, bikeways, and sidewalks, the City will need to set aside funding and staff time to pursue additional planning, analysis, preliminary engineering or funding before moving forward with the design and construction of infrastructure. Targeted implementation for these priority sidewalks, bikeways, and path connections will benefit from early collaboration and communication with partners such as WisDOT and Dane County. Two targeted intervention strategies are worth considering for some of the recommendations in this Plan:

- **Demonstration projects** use low-cost installation methods and temporary materials to demonstrate the benefits and trade-offs of a project on a temporary basis. Projects can take place on a single day (as a basic demonstration) or a month or longer (with more durable materials). Demonstration projects provide cities and DOTs the opportunity to test a concept and solicit public feedback before committing significant resources to permanent installation. This strategy requires a robust evaluation plan to gauge each project’s success and inform next steps.
- **Retrofitting** involves using pavement markings to add bike infrastructure using existing space (the most common intervention strategy is to paint bike

Implementation Spotlight: Strategies for Overcoming Eminent Domain Barriers

Wisconsin [State Statute 32.015](#) prohibits using eminent domain for new bicycle and pedestrian ways, which include sidewalks, trails, and bike lanes. Despite the restrictions on using eminent domain, communities across Wisconsin have continued to successfully build new and bike-ways using the following strategies.

Get the public on your side. Having early and robust public engagement to gain support for the project is important. It can be helpful to have a non-profit group (such as Sun Prairie Moves) publicly champion the project during the early stages.

Talk to property owners about their concerns. The City can still purchase property from willing sellers. Sometimes property owners are reluctant because of addressable concerns. Preempt concerns and turn property owners into willing sellers by scheduling one-on-one meetings with them to discuss the sidewalk, bikeway, or trail and explore possible solutions to their concerns like plantings and fencing.

Partner with local foundations: Local foundations may contact property owners and negotiate easements or sales that might be above the price that a public agency is able to pay.

Be persistent: A property owner may not be on board with a bicycle or pedestrian way at first, but if leadership of the business or staff change, they may feel differently after a few years.

Hire a real estate acquisition expert. A real estate lawyer or expert in real estate acquisition can help negotiate unusual methods to acquire parcels such as easements, land leases, and options to buy.

lanes on wide lanes). Other retrofitting strategies include: replacing parking with bike lanes where parking is under-utilized; keeping the same number of lanes but narrowing them; and reconfiguring lanes, where the space from existing motor vehicle lanes are re-purposed for bike lanes and/or a central turn lane. The most common street reconfiguration involves taking a four-lane street, removing two through lanes, and adding a central turn lane and bike lanes (a four-to-three conversion).

Regardless of the method, proposed changes to street configurations, traffic flow, and connectivity should undergo a community engagement process that fosters transparency and sets clear expectations between residents, property owners, and the City. Basing input and engagement around the active transportation design principles in the sidebar at right can help promote thoughtful conversation about the needs of residents who live, work, or travel along the streets in question.

7.2 Opinions of Probable Cost

The planning-level cost opinions used for the priority projects later in this chapter are based on typical per-mile cost opinions in Figure 30. They are intended to provide an order of magnitude of the cost for specific facilities; more detailed cost estimates should be developed when budgeting for specific project implementation.

Figure 30 presents opinions in two formats:

- Stand-Alone project costs are for installing the designated facility as a standalone project, without other street construction occurring.
- Coordinated project costs are for installing the designated facility as part of a larger street project. Because certain construction activities will occur as part of a street resurfacing or reconstruction regardless of the implementation of pedestrian or bikeway facilities, those costs not included in the costs presented in the table.

Figure 30. Construction cost opinions¹ for various pedestrian and bikeway facilities

Path or Bikeway Type	Action	Stand-Alone Cost/Mile	Coordinated Cost/Mile
Sidewalks	Construct new with curb ramps (5' width each side)	\$254,000	\$245,000
Signed Bike Route	Install new bike route signs	\$6,000	\$6,000
Bike Lanes	Add striping/markings	\$24,000	\$23,000
	Road diet	\$57,000	\$36,000
	Lane diet	\$31,000	\$23,000
	Widen roadway (5' each side)	\$850,000	\$436,000
Buffered Bike Lanes	Add striping/markings	\$33,000	\$31,000
	Road diet	\$66,000	\$54,000
	Lane diet	\$48,000	\$37,000
	Widen roadway (5' each side)	\$920,000	\$530,000
Protected Bike Lanes	Delineator-separated, add striping/markings	\$54,000	\$51,000
	Construct new, curb-separated (3' additional, each side)	\$844,000	\$812,000
	Intersection and signal modifications (each intersection)	\$150,000	\$125,000
Bicycle Boulevard	Install traffic calming treatments such as traffic circles, curb extensions, and pedestrian islands	Varies (\$300,000-\$1 million per mile)	
Shared Use Paths	Construct new (12') • Urban, high complexity	\$2,096,000	Not calculated
	• Urban, low complexity	\$1,455,000	
	• Rural, high complexity	\$1,397,000	
	• Rural, low complexity	\$970,000	

¹ The opinions of probable cost for most items in Figure 30 were developed by identifying major pay items and establishing rough quantities to determine a rough order of magnitude cost. Additional pay items were assigned approximate lump sum prices based on a percentage of the anticipated construction cost. Planning-level cost opinions include a 25 percent contingency to cover items that are undefined or are typically unknown early in the planning phase of a project. Unless otherwise noted, unit costs are based on 2022 dollars and were assigned based on historical cost data from WisDOT. Cost opinions do not include easement and right-of-way acquisition, installation of curb and gutter, permitting, inspection, or construction management, engineering, surveying, geotechnical investigation, environmental documentation, special site remediation, escalation, or the cost for ongoing maintenance.

A cost range has been assigned to certain general categories such as utility relocations; however, these costs can vary widely depending on the exact details and nature of the work. The overall cost opinions are intended to be general and used only for planning purposes. Toole Design Group, LLC makes no guarantees or warranties regarding the cost opinion herein. Construction costs will vary based on the ultimate project scope, actual site conditions and constraints, schedule, and economic conditions at the time of construction.

7.3 Project Prioritization

Sun Prairie has a limited amount of funding with which to build new infrastructure, and limited staff time to pursue grant funding. Because of this, it is important to decide which street segments or projects should be prioritized for targeted interventions, such as including them in the City’s ten-year CIP, writing grant applications to seek funding, or dedicating staff time to coordination and planning. A data-driven prioritization process used GIS data to score and rank projects based on objective criteria.

Throughout the development of the Plan, the planning team has used the Plan goals and principles to guide the recommendations. These goals and principles also influenced the criteria used to prioritize projects. The criteria and scoring process are described in Figure 31. The results of the prioritization, with the darkest projects being the highest-priority projects is shown in the map in Figure 32. The weight on trip potential and equity priority areas results in a strong emphasis on closing sidewalk and bikeway gaps in the older, central part of the City.

7.4 Top-Ranked Projects

The project team reviewed the highest-scoring project segments to develop a list of the highest-scoring projects for the City to implement during the course of the next 5-7 years by dedicating staff time, applying for grants, and conducting other targeted interventions. Those top projects are shown in the map in Figure 33 and listed in the table in Figure 34. The projects in that map and table represent 2.4 total miles of sidewalks, 1.9 miles of path, and 2 miles of on-street bikeway, with a planning-level construction cost of up to \$9 million (not including projects for which costs were not calculated, such as bridges or underpasses). They represent a small fraction of the projects that the City will need to pursue to develop a complete and comfortable network for walking, biking, and rolling; however the prioritization map in Figure 32 can be a guide to future targeted interventions.

Figure 31. Project prioritization criteria for selecting projects for targeted intervention

Broad Factor	Prioritize Walking Biking and Transit	Improve Safety	Use data	Design for Children	Promote Equity	How this Factor was Scored	Weight
Project is in an area with high walking and biking trip potential.	▲		▲			Calculated average trip potential score (see analysis in Chapter 3) for a given project segment, and converted percentile to points between 0-10.	35%
Project is along a corridor with medium to high pedestrian and bicycle crash density.		▲	▲			Calculated average crash density score for a given project segment, convert crash density score percentile, then assign points between 0-10	16%
Project is in a pedestrian crossing safety area.	▲	▲	▲	▲		Using the Pedestrian Crossing Safety Areas (see Chapter 5), assign projects that are within or cross the buffer 10 points. Projects outside the buffer received 0 points.	16%
Project is in or next to equity priority area.			▲		▲	Using the equity priority areas (see Chapter 3), create a buffer of 1/4 mile around the equity priority areas. Assign projects that are within or cross the buffer 10 points. Projects outside the buffer received 0 points.	33%

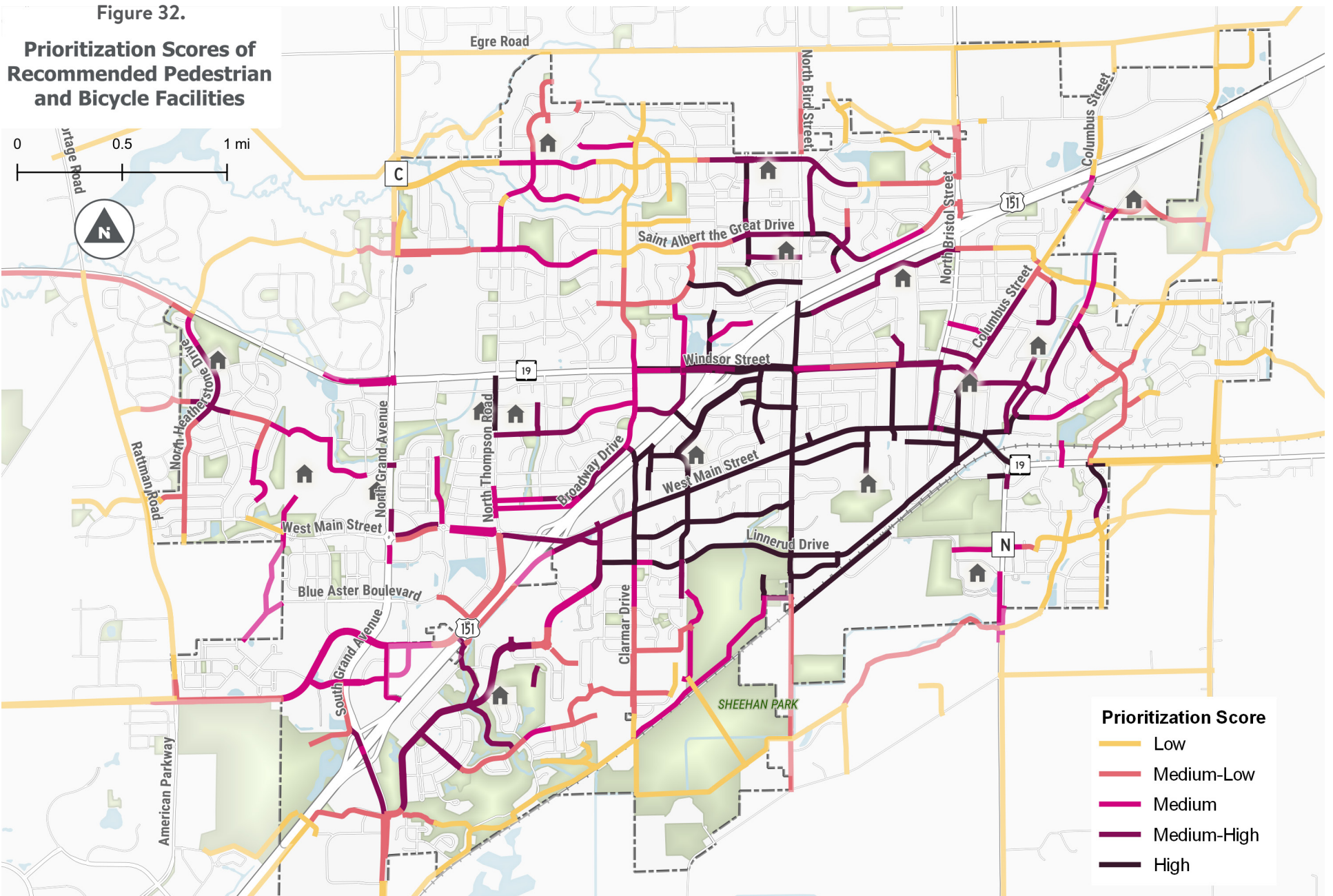


Figure 33.
Top-Ranked
Bikeways, Paths, and
Sidewalk Projects

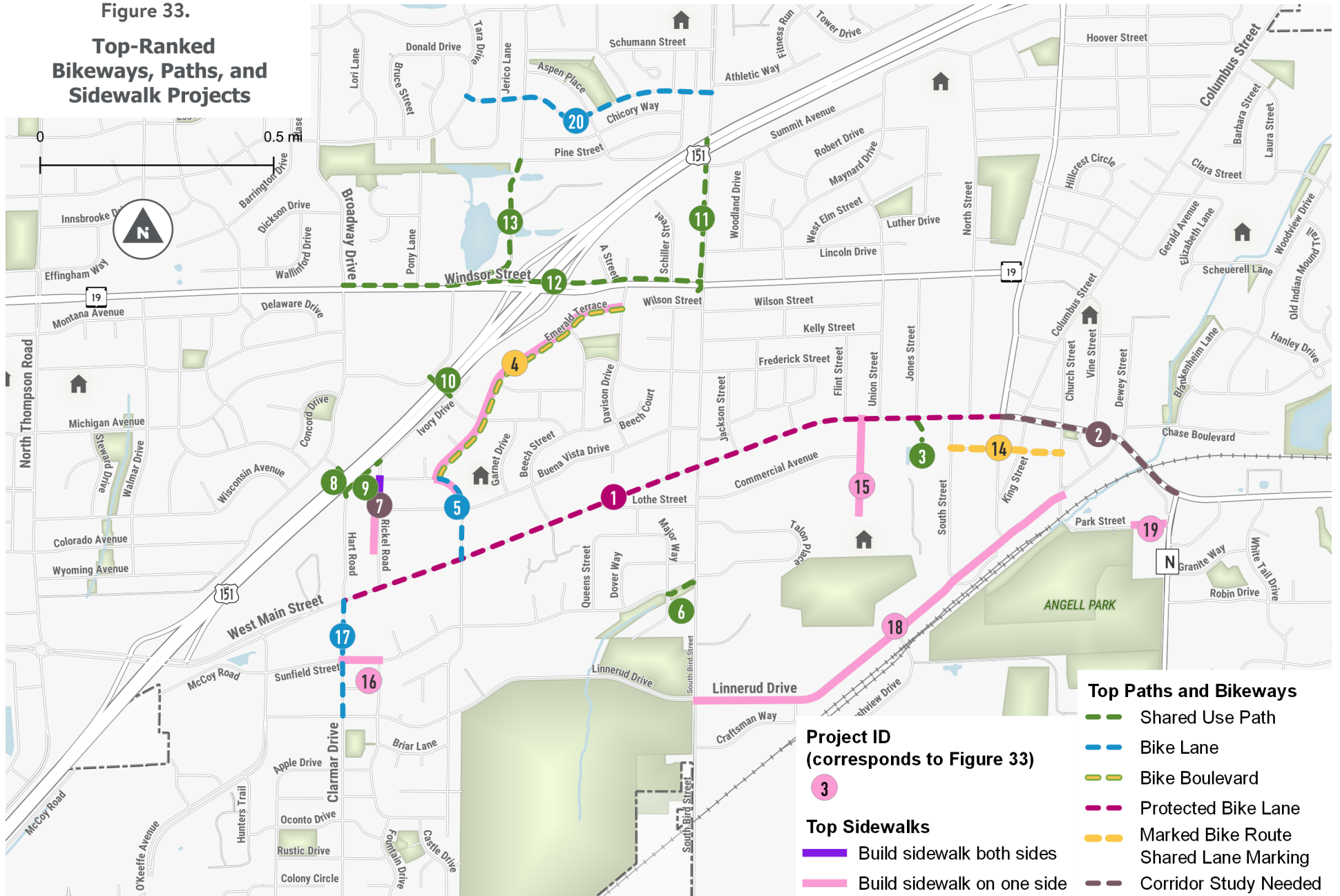


Figure 34. Top 20 Standalone Projects for Targeted Intervention

Map ID	Street or Path Name	Recommended Facilities	Purpose/Why Important	Implementation Notes or Actions	Miles	Construction Cost Opinion
1	West Main Street	Protected Bike Lanes	Crashes; Trip potential; Equity	Remove motor vehicle lanes or on-street parking to provide 7-8' protected bike lanes on both sides.	1.5	\$2 to \$3.2 million
2	East Main Street	To be determined	Connect downtown; Trip potential; Equity	Corridor study to determine correct route.	about 0.5	Not calculated
3	Path from stadium to West Main Street	Shared use path	Connect to school; Equity	Build 14' path	0.05	\$80,000
4	Emerald Terrace	Bicycle boulevard and sidewalk	Connect to school; Equity; Trip potential	Build 5' sidewalk on one side; install traffic calming treatments like curb extensions and median islands.	0.8	\$350,000 to \$900,000
5	N Walker Way	Bike lanes and sidewalk	Connect to school; Equity; Trip potential	Build 5' sidewalk on one side; remove on-street parking on one side to provide minimum 5' bike lanes.	0.1 sidewalk; 0.2 bike lanes	\$20,000
6	Pheasant Run Park Path	Shared use path	Connect to school; Equity; Trip potential	Expand sidewalk to 11' path; install curb cut on S Bird Street	0.1	\$20,000
7	Rickel Road	Sidewalks	Connect to school; Equity; Trip potential	Build 5' sidewalks, closing gaps in sidewalk network	0.2	\$25,000
8	US 151 overpass or underpass at Hart Road	To be determined	Connect across highway; Equity; Trip potential	Feasibility study to determine correct facility.	N/A	Not calculated
9	Path along US 151 from Hart Road to Ivory Drive	Shared use path	Connect across highway; Equity; Trip potential	Build 11' path	0.1	\$100,000 to \$200,000
10	US 151 overpass or underpass at Coral Drive	To be determined	Connect across highway; Equity; Trip potential	Feasibility study to determine correct facility.	N/A	Not calculated
11	North Bird Street	Shared use path	Connect across highway; Equity; Trip potential	Build 11' path. Over US 151, either widen sidewalk to 14' or build a 11' two-way protected bike lane on west side.	0.4	\$600,000 to \$900,000
12	Windsor Street/STH 19	Shared use path	Connect across highway; Equity; Trip potential	Build 11' path on north side of street.	0.8	\$1.2 to \$1.7 million
13	Path from Windsor Street to Vandenburg Heights	Shared use path	Equity; Trip potential	Build 10' path. Lois Drive is privately owned. Path may need to be constructed on nearby City-owned parcels.	0.4	\$600,000 to \$800,000
14	Lane Street	Festival Street	Connect through downtown; Equity; Trip potential	Rebuild street to encourage very slow speeds and walking and biking trips	0.3	Not calculated
15	Kronke Drive	Sidewalks	Connect to school; Equity; Trip potential	Build 5' sidewalk on west side of street	0.2	\$25,000
16	Sunfield Street	Sidewalks	Connect to businesses; Equity; Trip potential	Build 5' sidewalk on south side of street	0.1	\$15,000
17	Clarmar Drive	Bike lanes	Crashes; Trip potential; Equity	Remove on-street parking on one side to provide bike lanes.	0.3	\$10,000
18	Linnerud Dr from Market St to S Bird Street	Sidewalks	Connection to businesses; Equity; Trip potential	Build 5' sidewalk on southeast side of street	0.9	\$100,000
19	Park Street	Sidewalks	Connect to businesses and park; Equity; Trip potential	Build 5' sidewalk on north side of street	0.1	\$15,000
20	Vanderburg Street	Bike Lanes	Connect to school and recreation; Equity; Trip potential	Remove solid yellow centerline and on-street parking on both sides to provide bike lanes; alternatively, build bicycle boulevard with traffic calming treatments.	0.6	\$20,000

7.5 Funding Strategies

The most readily-available and consistent source of funding is from the City’s own revenue base. Sun Prairie receives approximately \$22 million in general property tax levy and other revenues. While there are various competing demands for this limited funding, allocating just 3 percent of the \$22 million can fund around \$660,000 towards bikeways, trails, and sidewalks.

Grant programs are also an important source for funding bicycle and pedestrian infrastructure. However, state and federal funding sources are limited and highly competitive. Figure 35 summarizes some of the most viable funding opportunities for the priority infrastructure and program and policy recommendations in this Plan.

Most new paths on the outskirts of Sun Prairie are low priority for staff time and implementation: paths and bikeways in these areas can be built as part of Sun Prairie’s development requirements. However, the sidewalks, bikeways, and paths in the older part of the city will need targeted interventions to see them through. Many of the priority projects would likely be good candidates for grants due to the strong nexus of equity, safety, and multimodal connections with the TAP, STP, and SS4A scoring metrics.

Other priority projects touch on Main Street and Windsor Street, portions of which are a Wisconsin state highway. Projects touching STH 19 will need to partner with WisDOT for funding, design, and management

Highway Safety Improvement Program (HSIP) funds are another source that could be used to improve pedestrian crossings. HSIP funds highway safety projects at sites that have experienced a high crash history, with an emphasis on low-cost options that can be built quickly.

Figure 35. Potential federal and state grants for priority projects

Grant Name and Amount of Funding Available	Eligible projects	Local Match	Application Deadline
Transportation Alternatives Program (TAP)	Plans, such as Complete Streets, SRTS, and Active Transportation Plans Planning and construction for sidewalks, paths, and on-street bikeways. Projects must have already completed preliminary engineering and environmental review (if necessary).	20%	October 27, 2023
Surface Transportation Program-Urban	Design and construction of major collectors, arterials, or freeways within the Madison Urbanized Area urbanized area. The Greater Madison MPO gives a prioritized list to WisDOT as part of the selection process, awarding more points to projects that address multimodal options, environment, safety, and equity.	20-50%	October 27, 2023
Safe Streets and Roads for All (SS4A)	Development of an action plan, or implementation of projects that address roadway safety problems identified in the action plan. Paths, sidewalks, and bikeways may be eligible if the separation of pedestrians and bicyclists is identified as a safety need in an existing action plan.	20%	Likely Spring 2024
Reconnecting Communities and Neighborhoods Program	Planning or construction of projects that reconnect communities that were cut off from economic opportunities by transportation infrastructure. For capital grants, the minimum grant award is \$5 million.	20% for planning 50% for construction	September 28, 2023

7.6 Ten Year Strategic Plan

Non-Infrastructure Projects

Figure 36 lays out a plan for funding the priority planning, policy, and programming projects that will require a budget allocation. These cost opinions are cursory in nature and were developed by considering Sun Prairie’s needs

and context, as well as comparing the costs of similar projects throughout Wisconsin and nationwide.

Most of the other recommended planning, policies, and programs in Chapter 6 can be achieved through time and effort dedicated by City staff and partner agencies.

Figure 36. 10-Year Plan for Planning, Policy, and Programming Projects Requiring Budget Allocation

Time-frame	Potential Projects	Cost Opinion	Possible Department Sponsor	Potential Funding Sources
1-3 years	Comprehensive Zoning Ordinance Update	\$155,000	Community Development-Planning	General Fund
	Vision Zero Plan	\$90,000	Public Works-Multimodal	Transportation Alternatives Program
	Complete Streets Policy and Implementation Guidance	\$50,000-\$90,000	Public Works & Community Development	General Fund
	Downtown West Main Street Bikeway Routing Study	\$30,000	Downtown BID	General Fund/BID
	Install High Quality Bike Parking in City Public Spaces	\$50,000	Public Works & Parks, Recreation & Forestry	General Fund
3-6 years	Feasibility Studies for Pedestrian/Bicycle Bridge or Underpass	\$15,000-\$30,000	Public Works-Multimodal	Reconnecting Communities and Neighborhoods Program
	Comprehensive Plan Update	\$150,000	Community Development-Planning	General Fund
	Program to Subsidize Bike Parking on Private Property	\$15,000 annually	Public Works-Multimodal	General Fund
	Safe Routes to School Plan	\$150,000	Public Works and SPASD	Transportation Alternatives Program
6-10 years	ADA Transition Plan	\$30,000	Public Works-Multimodal	General Fund
	ADA Inventory of Sidewalk Obstructions and Curb Ramps	\$30,000-\$100,000	Public Works-Multimodal	General Fund