

Draft Bikeway and Trail Network Recommendations

Background & Introduction

St. Croix County and many of its individual communities have long histories of planning for biking and walking. The County Highway Department has nearly completed implementation of its Bicycle Transportation Plan (1995-2015) that was developed more than two decades ago. Implementation of that plan included installing bike route signs and paving shoulders on many County highways. The County's 2008 Parks and Recreation Bicycle and Pedestrian plan went a step further by identifying low-traffic town roads for biking and corridors for future trails.



As a result of the efforts of the County, municipalities, and bicycle and trail advocates, many miles of signed bike routes and several paved and unpaved trails have been provided across the county, such as the Wildwood Trail from Woodville to Pierce County. Many of the county and state parks and recreation areas have some form of internal trail, but these areas are not connected to each other by trails or easy-to-use bike routes.

More recently, the St. Croix Crossing project has afforded a major opportunity to St. Croix County. The project revolves around rerouting motor vehicle traffic crossing the river between Houlton and Stillwater to a new bridge located approximately a mile and a half downriver from the historic lift bridge. The new bridge will include a bicycle and pedestrian crossing and the lift bridge will exclusively carry bicycle and pedestrian traffic. A new loop trail will connect the two bridges on both sides of the river, effectively linking northern St. Croix County to the Twin Cities.

The St. Croix Crossing project, completed implementation of the County Highway Department's 1995-2015 plan, and increasing public interest across the county has spurred the need to develop this new countywide Bicycle and Pedestrian Plan. The purpose of this project is to identify an array of policy and infrastructure strategies and priorities to make bicycling and walking safer and more appealing for the general population as well as more avid cyclists. This Plan is being developed as a countywide project that will equitably consider the needs and priorities of all parts of the county.

Plan Development

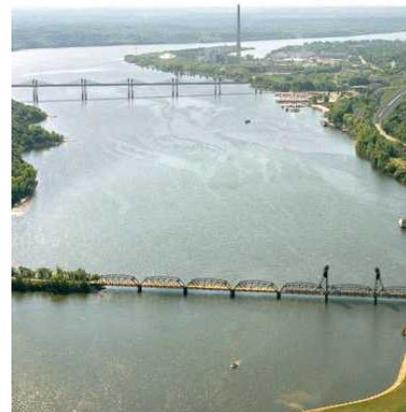
The Plan is being developed by St. Croix County through its Community Development department in close coordination with the Highway department and Parks division. Integral to the planning process is an Advisory Team of stakeholders representing communities across the county, multiple advocacy organizations, the health community, the Wisconsin Department of Transportation (WisDOT), and the County Board. The Advisory Team will meet a minimum of six times over the duration of the project to review work products and provide guidance.

The majority of the funding for this project is from a Transportation Alternatives Program grant awarded by WisDOT. The grant was awarded thanks to the hard work of the County, advocates, and other stakeholders in preparing the application. A portion of the grant funds are being used to retain the services of an experienced consultant team consisting of Toole Design Group (nationally-recognized experts in bicycle and pedestrian planning and engineering) and the West Central Wisconsin Regional Planning Commission (WCWRPC, who has been significantly involved in past bicycle and pedestrian initiatives in the county and has substantial experience and knowledge regarding multi-modal transportation issues in St. Croix County and the surrounding region).

Vision and Goals for the Plan

The following vision statement and goals were developed to guide the development of the Plan and determine priorities moving forward:

Vision Statement – St. Croix County will work in collaborative partnership with towns, villages, and cities to provide safe, convenient, and enjoyable walking and biking opportunities that serve a broad range of people with different ages, abilities, and interests; support tourism and enhanced quality of life; and link communities to each other, to key destinations, to surrounding counties, and across the St. Croix River to the Twin Cities region.



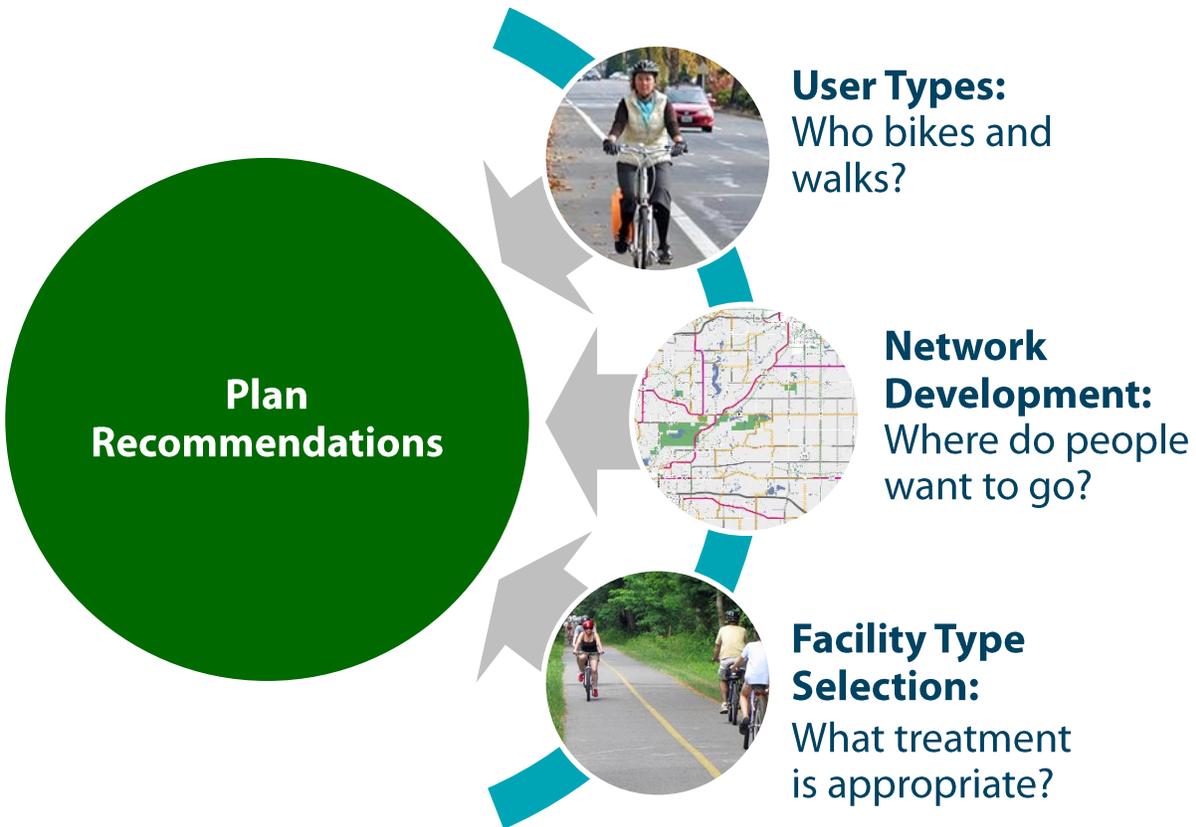
Goals

- **Safety** – Increase and emphasize safety for all road users through a combination of infrastructure improvements that provide safe places to walk and bike; education programs at schools and for adults; and enforcement strategies that increase awareness, understanding, and compliance with existing traffic laws.
- **Inclusiveness** – Increase the comfort, accessibility, usefulness, and appeal of trail and on-road bikeway networks to serve a broad range of people biking and walking—including children going to school, adults commuting to work, people concerned about interacting with motor vehicles, out-of-state tourists, avid road cyclists, and people that bike and walk primarily for recreation.
- **Partnerships** – Increase communications and coordination between St. Croix County, municipal staff, elected officials, advocates, schools and school districts, public health and healthcare, civic organizations and non-profits, state agencies (such as the Department of Transportation and Department of Natural Resources), and the general public to leverage resources and knowledge to develop networks for bicycling and walking that are consistent, context-sensitive, and continuous from one community to another.
- **Support** – Increase public and political support to encourage bicycling and walking, develop sustainable funding strategies, and secure buy-in for implementation of this Plan through education and outreach about the health and economic benefits—both personal and community-wide—of walking and biking.
- **Connectivity** – Increase connectivity for biking and walking within and between communities, to key destinations such as schools and state parks, to surrounding counties in Wisconsin, and across the St. Croix River to Minnesota.

Planning Approach

The creation of the St. Croix County Bicycle and Pedestrian Plan is focused on serving the needs of the county's broad population by identifying strategies that work toward achieving both the long-term outcomes embodied by the Plan's vision as well as the short-term opportunities targeted by the Plan's goals. The focus, therefore, is on A) the development of near-term and longer-term infrastructure solutions and B) a comprehensive toolbox of supporting policies and strategies that enable the county, municipalities, and stakeholders to effectively implement the Plan.

The development of the Plan's infrastructure recommendations (which types of bikeway treatments should be provided in specific locations across the county) revolved around quantitatively and qualitatively answering three questions—who will use the system, where they want to be able to go by bike or on foot, and what facility types and treatments are appropriate (for example, paved shoulders versus shared roadways).



User Types: Who bikes and walks?

The first step in the development of this Plan was to develop an understanding of the wide variety of people walking and biking in St. Croix County. From children biking to school, to people walking to a neighbor's house, to avid road cyclists riding 100 or more miles on a Saturday morning, there are wide variations in peoples' preferences, behaviors, skill levels, and reasons for walking and biking. An important objective of this Plan is to identify ways to increase safety and meet the needs of a broad cross section of the population, especially those that are less comfortable interacting with motor vehicle traffic.



Dividing the Population into Distinct User Types

For the sake of simplicity and clarity three categories or “user types” have been established for this Plan. This classification largely correlates with a survey of St. Croix County residents performed in 2015 (see below). However, it is important to recognize that people can shift between categories depending on where they are or who they are with—for example, someone that regularly bikes on county highways may avoid traffic when biking with their child.

Pedestrians – This category includes all people that walk, run, or use a wheelchair or other mobility device, regardless of age or ability. The needs of almost all pedestrians can be met with the same infrastructure approach since federal and state mandates require all sidewalks and paved paths to be usable for people with disabilities.

Casual Bicyclists – This category equates with 54% of the population, including the 15% that only feels safe on separated trails/paths with few traffic crossings and the 39% that prefers separated paths, but will ride on roads where space is available and traffic is manageable.

Confident Bicyclists – This category equates with the 14% of the population that is confident and comfortable riding in traffic in most situations.

UW River Falls Survey



Don't ride a bike/have no plans to start



Only feel safe on separated trails/paths with few traffic crossings



Prefer separated paths, but will ride on roads where space is available and traffic is manageable



Confident and comfortable riding with traffic in most situations

The UW River Falls Survey Center distributed 1,700+ random surveys in the mail and received 626 responses. This results in a 95% confidence level with a +/- 3.1% margin of error.

Network Development: Where do people want to go?

The second step in developing the recommendations of this Plan was to identify desired connections for future bikeways and trails that provide access to where people want to go. This effort built upon the county’s existing trail network, as well as the existing bike route network. Stakeholder and public input was gathered through various means to identify important connections and to refine these links into an interconnected bikeway and trail network.

Identifying Priority Connections

Priority connections were identified using three methods, which combined online and in-person public input with quantitative analysis.

WikiMap – This online interactive mapping activity provided the opportunity for any member of the public with access to the internet to provide input for the Plan. Participants drew lines and points on an online map to identify barriers, destinations, routes they bike or walk along currently, and routes they would like improved for biking and walking. This activity identified significant demand for improvements connecting the new Loop Trail in Houlton to Hudson and River Falls, as well as a corridor connecting Roberts, Hammond, Baldwin, and Woodville.



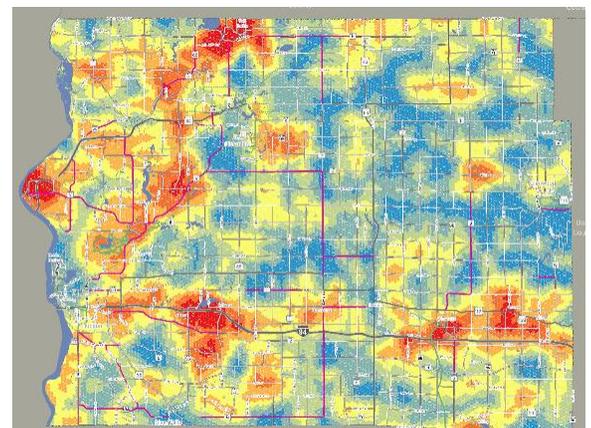
WikiMap Results

Stakeholder Priority Maps – At an in-person workshop, stakeholders identified priority connections using colored tape. A limited amount of tape was given to each small group for this activity in order to reflect financial constraints. The priorities identified reflected those identified through the WikiMap, with more emphasis given on a corridor connecting the new Loop Trail in Houlton to Stillwater and New Richmond.



Example Stakeholder Priority Map

Quantitative Demand Analysis – County staff and consultants performed a quantitative analysis to identify the areas where higher levels of biking and walking could be expected in St. Croix County, if safe and comfortable bikeways were available. This analysis included two models, one of which focused on more casual bicyclists and pedestrians and the other focused on more avid bicyclists. Stakeholders provided input on the two models, which included factors such as population density, schools, tourist destinations, scenery, etc. The resulting heat maps indicate “hot spots” for bicycling and walking activity.

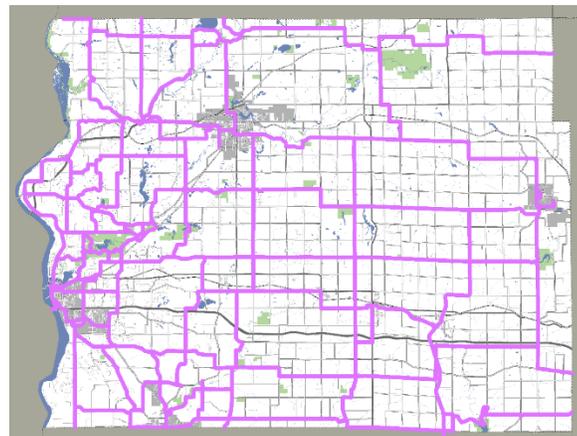


Quantitative Demand Analysis Results

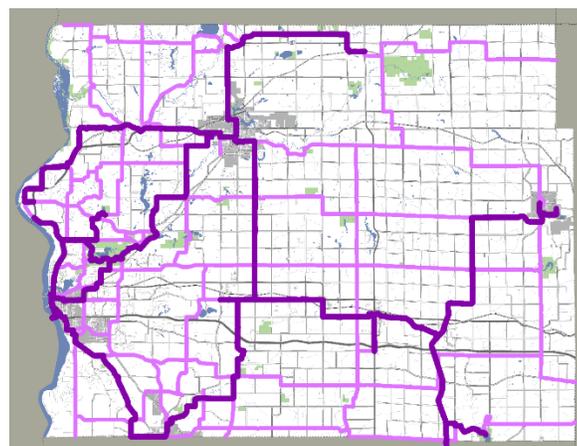
Refining Priority Connections into an Interconnected Bikeway and Trail Network

Many of the priority connections identified during the WikiMap, Stakeholder Priority Maps, and Quantitative Demand Analysis exercises follow existing bike routes and proposed trails that have been part of past plans. Notably, each of the three exercises identified a strong desire to provide or enhance bikeways within the Highway 35, Highway 64, Highway A, and Highway 12 corridors. This is especially true where these corridors connect communities to each other and to the new St. Croix River Crossing Loop Trail.

The connections identified during this process were refined into an interconnected “Study Network” of desired bikeway and trail connections. In the end, not all of the bike routes currently present in the county were included in the Study Network, largely due to public and stakeholder preference to focus efforts on enhancing the quality of a fewer number of potential bikeways and trails. The segments comprising the Study Network were analyzed and observed in the field to determine current conditions, challenges, and opportunities.



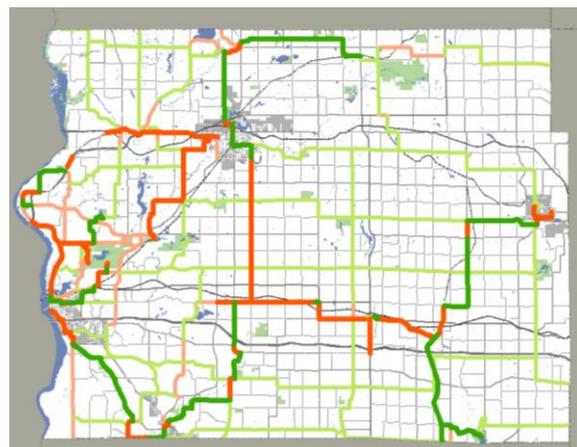
Bikeway and Trail Study Network



Enhanced Network (depicted by bold lines)

Creating an Enhanced Network

There is a strong desire in St. Croix County to enhance key connections—especially those linking communities and schools—to have a higher level of comfort and ease of use. To achieve this, a subset of the study network was selected to form an Enhanced Network, which will be developed with the goal of adequately accommodating a wide range of users, especially those with little comfort interacting with motor vehicle traffic. While initially the Enhanced Network will include some low-traffic town roads, the ultimate vision (or “Full Build”) is for this network to be almost entirely composed of trails with a few low-stress on-road bikeways providing critical connections.



Gaps in the Study Network and Enhanced Network (depicted by red lines)

Locating Gaps and Barriers

Once the Study Network and Enhanced Network were established, both were analyzed to identify which segments were currently suitable for bicycling and walking and which can be considered gaps in the system. These “gaps” indicate where infrastructure improvements—such as paved shoulders or paths—are needed in order for the connection to serve the intended user types. For segments of the network that are not gaps, there are still opportunities for providing minor enhancements in the form of warning, regulatory, and wayfinding signs, as well as occasional pavement markings.

Facility Type Selection: What treatment is appropriate?

The third step in the in creating recommendations for new bikeways and trails in St. Croix County was to recommend specific types of bikeway and trail facilities for each segment of the Study Network. This was performed by assembling a menu of candidate facility types, selecting an appropriate facility type based on traffic context and physical constraints, and considering whether the segment is part of the Enhanced Network (in which case a higher-grade facility type was selected). Once assembled on the map, these recommendations form a comprehensive network of planned bikeways and trails.

Types of Bikeway and Trail Facilities

The Plan's infrastructure recommendations are categorized into a menu of seven facility types, as listed below. The multi-colored lines next to each description match the colors of lines used on the bikeway and trail recommendations map. Some of these facility types include variations, such as wider versions, versions with additional striped buffers, and two-way versions. Additional planning and design guidance will be provided in the final Plan.

Path

A shared-use path or trail can be located along a road right-of-way or in an independent right-of-way such as a stream valley, greenway, along a utility corridor, or an abandoned railroad corridor. Paths as part of county corridors should be at least 10 feet wide, and wider where higher use is expected.



Bike Lanes

A bike lane designates space for the preferential or exclusive use of bicycles. Standard bike lanes are typically 5 feet wide but wider variations can be advantageous. A common variation is the buffered bike lane, which places a 1 to 3-foot wide painted buffer between the bike lane and adjacent travel lane.



Separated Bike Lanes

A separated bike lane, sometimes called a cycle track or protected bike lane, is a bicycle facility that is physically separated from both the street and the sidewalk. Separated bike lanes can be one way for bicycles on each side of a two-way street, or two-way and installed on one or both sides of the street.



Advisory Bike Lanes¹

Advisory bike lanes delineate preferred space for bicyclists and pedestrians, giving them right-of-way in that space. Cars travel down the center of the narrow roadway and merge into the advisory bike lane when passing an oncoming vehicle. Advisory bike lanes are suited to very low-traffic roads.



¹ Photo Copyright 2014 The Dartmouth, Inc.

Paved Shoulders

Paved shoulders that serve as a bicycle accommodation are typically 4 or 5 feet wide. Many roads in the county have paved shoulders but lack continuity through intersections. Climbing lanes are a variation that provides a paved shoulder or bike lane in the uphill direction, but not the downhill direction.



Wider Paved Shoulders

Higher traffic roads can be improved for bicycling through the provision of wider (6 to 8 feet) paved shoulders. Some roads in the county have wider paved shoulders but lack continuity through intersections.



Minor Enhancements

Low-cost, strategically-placed pavement markings and signage can enhance bike routes and existing trails. Shared lane markings, or Sharrows (see image), can increase awareness of bicyclist presence, indicate lane positioning, and aid in wayfinding. Signs can aid in wayfinding and raise awareness of the rules of the road.



Facility Selection Process

Specific facility types for each segment of the Study Network were chosen based on a quantitative and qualitative review of the conditions in the area based on three factors:

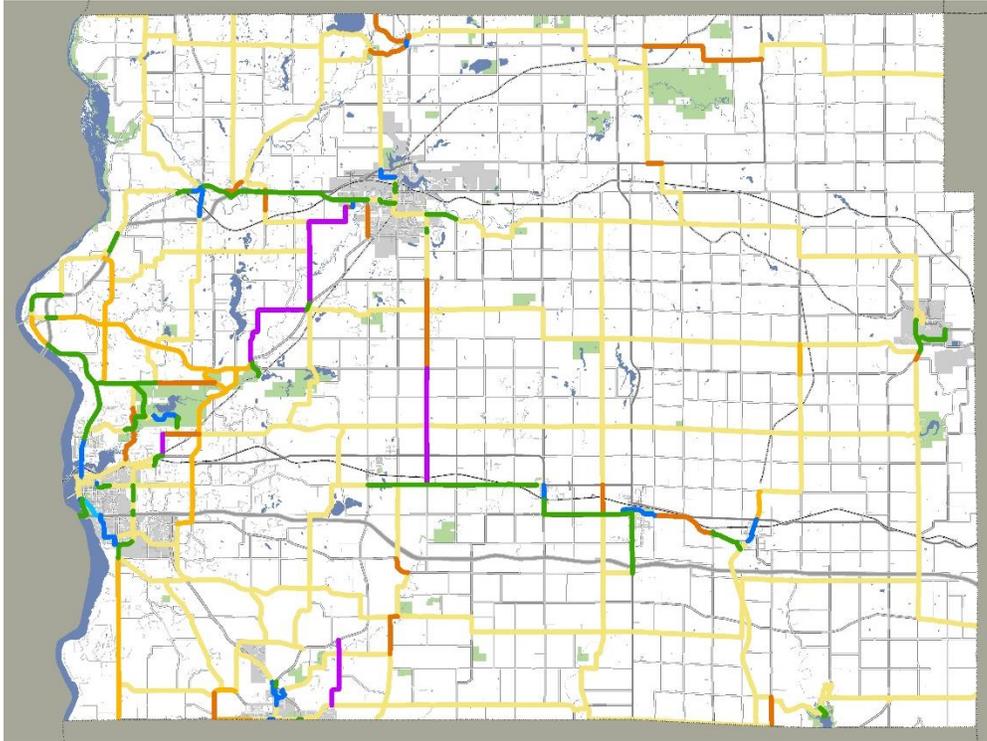
1. **Context** – Is the corridor in a populous city or village, or is it in a low-density rural area? Different types of facilities are suitable within cities and villages (e.g., bike lanes), whereas others are more appropriate in rural areas (e.g., paved shoulders).
2. **Motor vehicle traffic** – How much traffic is there and how fast is it going? Bikeways along streets and roads with higher levels of traffic necessitate greater separation between people biking, walking, and driving.
3. **Intended users** – What types of users will be biking and walking along the corridor? If the segment is part of the Enhanced Network, a higher-grade facility is warranted.
4. **Site constraints** – Are there right-of-way or physical constraints that limit the ability to implement the desired facility type? If so, an alternate facility type or an alternate route was selected.

In general, where a particular facility type is recommended by the Plan, the recommendation is for the standard treatment. For example, bike lane recommendations generally indicate standard 4- to 5-foot wide bike lanes unless otherwise noted. However, the appropriate variation or treatment type for each recommendation should be investigated in more detail during the development of a specific project. In cases where higher levels of casual bicyclists are expected or where a lower-stress variation (such as a wider or buffered bike lane) is feasible, such alternatives should be considered even if the plan recommendation only calls for standard bike lanes.

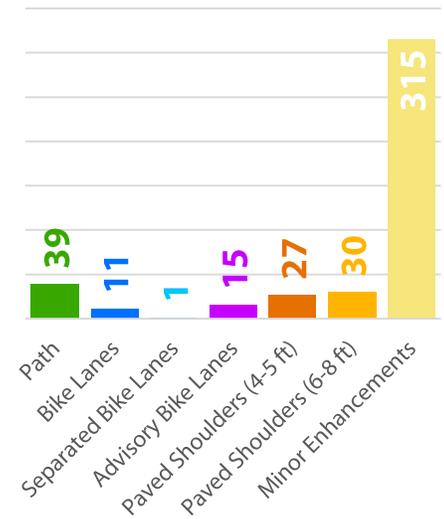
Network Recommendations

The culmination of the analyses and individual recommendations is a comprehensive recommended network of bikeways and trails. The network recommendations are described briefly in the graphics below.

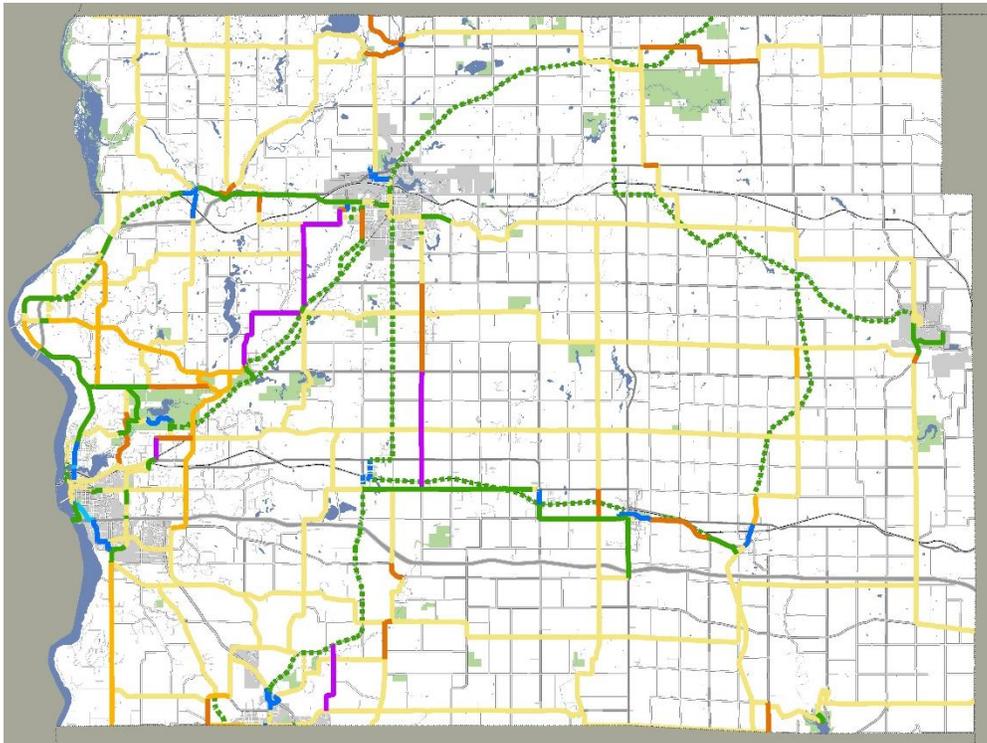
Near Term



Miles of Recommended Bikeways and Trails



Full Build



The map and chart above depict the Plan's overall near-term Network Recommendations, based on the selection methodology and facility types described on the previous pages. The chart shows the miles of the Plan's various near-term bikeway and trail recommendations, color-coded to match the map. By mileage, the vast majority of the Plan's near-term recommendations fall in the Minor Enhancements category, requiring minimal investment.

The map to the left includes the recommended "full-build" alignments (dashed lines), which represent future investments to improve connections. The time horizon for implementation of Full-Build alignments has not been determined and may extend beyond the life of this Plan.

What Comes Next?

St. Croix County is continuing to develop the Bicycle and Pedestrian Plan by developing strategies, guidelines, and policies to facilitate implementation. The next steps in completing the Plan are shown in the illustration below.

