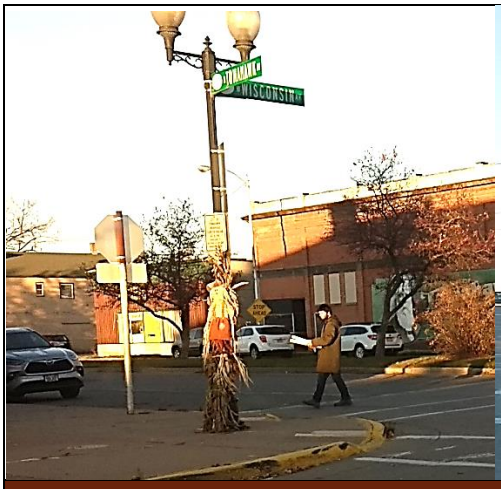
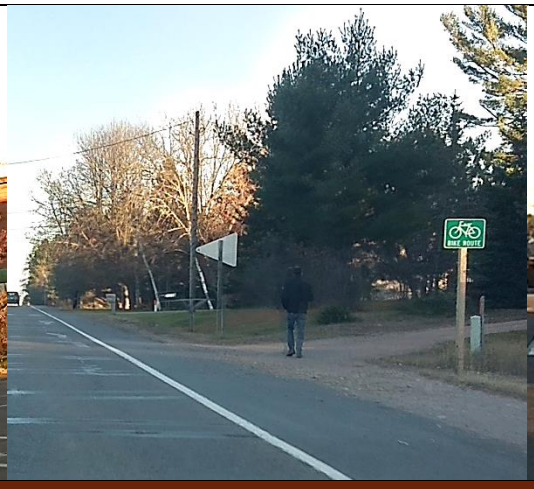
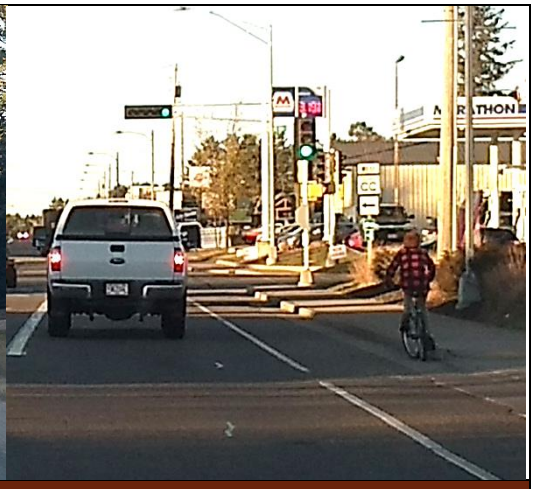






City of Tomahawk
Bicycle and Pedestrian Plan 2022

Prepared by North Central Wisconsin Regional Planning Commission

Tomahawk Bicycle & Pedestrian Plan
Acknowledgements

City of Tomahawk Council Members

Steven E. Taskay, Mayor

Mickey Loka
Patricia E. Haskin
Ed Nystrom
Jeff Kahle
Dale Ernst
Will Garkse
Tadd Wegener
Steve "Ding" Bartz
Mike Loka

Tomahawk Parks & Recreation Commission

Jeff Kahle, Chairperson

Tim Albert
Chad Gauerke
Mike Loka
Mickey Loka
Sue Thompson
Mark Zeimer

Staff for this plan

Amanda Bartz, Clerk-Treasurer
Fred Heider, AICP, NCWRPC Planner

Cover photo sources: NCWRPC

July 2022

This plan was prepared under the direction of the City of Tomahawk Parks and Recreation Committee by the North Central Wisconsin Regional Planning Commission. Funding provided by a grant from the U.S. Department of Transportation, with additional funding from WisDOT, NCWRPC, and Tomahawk.

For more information contact:

North Central Wisconsin Regional Planning Commission
210 McClellan Street, Suite 210
Wausau, WI 54403
715-849-5510

Table of Contents

MAPS

ATTACHMENTS

CHAPTER 1
INTRODUCTION

Purpose

The primary emphasis of this plan is to develop a more bicycle and pedestrian friendly transportation system in the City of Tomahawk. Biking and walking are essential to maintaining and promoting the quality of life for residents and visitors of Tomahawk.

Many positive attributes make Tomahawk a great place to walk or bike for daily trips and for recreation. Historic downtown buildings and houses in some neighborhoods, surrounded by rivers, flowages, and towering white pines provide scenic beauty to travel through. Distances are short to walk or bike. Many destinations are within a 1.5-mile, 10-minute, bicycling distance of most residents. Topography in Tomahawk is generally flat. With all the reasons that make Tomahawk a good place to walk and bike, 5.5% of commuter trips in 2019 (U.S. Census, ACS 5-year estimate) occurred by walking and 0.0% biking.

This is a citywide plan developed by the Tomahawk Park & Recreation Committee with technical assistance provided by the North Central Wisconsin Regional Planning Commission (NCWRPC). Adoption of this plan does not commit Tomahawk to funding projects listed in this plan, however, success in obtaining possible grant money may require that a project be listed in this plan.

Funding for this effort was provided in part by a grant from the Wisconsin Department of Transportation. Staff support was provided by the North Central Wisconsin Regional Planning Commission. This Plan outlines recommendations to improve conditions for bicycling and walking in Tomahawk.

Some of the main components of this plan include:

- A review of existing conditions (e.g., sidewalk locations, crash data, pinch points, education, and existing plans & laws);
- Bike route planning;
- Vision, mission, goals, and objectives; and
- Recommendations that are policy based, in addition to education, enforcement, engineering, and evaluation.

There are recommendations for many City departments and Tomahawk area groups, along with the County Highway Dept. and WisDOT based upon jurisdiction.

Bicycling and Walking as Transportation

Bicycling and walking are two of the most efficient ways to get around. Walking is ubiquitous; nearly everyone depends on walking for at least part of every trip, if only from the parking lot to the nearest building. Although some lament that "people just can't seem to walk anywhere anymore," the reality is that, given the opportunity, many people choose to walk from one place to another, particularly if they can do so safely and conveniently. During the past fifty years, however, there is no question that we Americans have become increasingly auto dependent. This is partially by choice, and partly as the result of a development pattern where individual land uses (e.g., retail, fast food, and schools) exist on the periphery of communities not only are a long walk from where people live, but they may be a half-mile or more from the nearest sidewalk. Conditions such as these not only discourage able-bodied pedestrians, but they also literally prevent access for pedestrians with special needs, a group that includes elderly, children, and people with disabilities.

Defining Who Rides Bicycles

Not everyone who bikes has the same ability or confidence riding. Age, experience, and bicycling ability dictate where and when individuals (or parents, in the case of children) feel comfortable to safely bicycle on roads.

Age Differences

In general, young bicyclists are found in places where a park is within a mile from their home, and where development is clustered, like in a city's downtown. Some kids learn the basics of balance and control with their first bicycle by the age of four. By the time they turn 10 years old many children are allowed to ride to school if the route is safe, or to the store, or to visit friends. By the time kids reach their junior high years (7-9th grades), they often have good traffic safety skills. Bicycles are their primary means of independent mobility beyond walking.

Many high school students stop riding their bikes as infatuation with the car takes hold. But after high school, some people come back to bicycling, especially if they attend college. Beyond school, many people limit their bicycling to family outings, recreational trail riding, and within a few miles of their homes for low-impact exercise.

Some adults bicycle to work. The latest trend is that young adults are choosing where to live based upon how walkable or bikeable their commute is. Other adults may use bicycles for touring long distances. Bicycle clubs which tend to cater to people in the 25 to 50 age group often sponsor rides through rural areas (e.g., The **GR**eat **A**nnual **B**icycling **A**dventure **A**long the **W**isconsin **R**iver [GRABAAWR], which passes through Tomahawk).

By retirement age, many people who have not ridden for years take up bicycling again as a way to keep limber and fit. For some older adults, the bicycle or adult tricycle may be their only means of independent travel. In many cases, these bicyclists will ride close to home or on local trails.

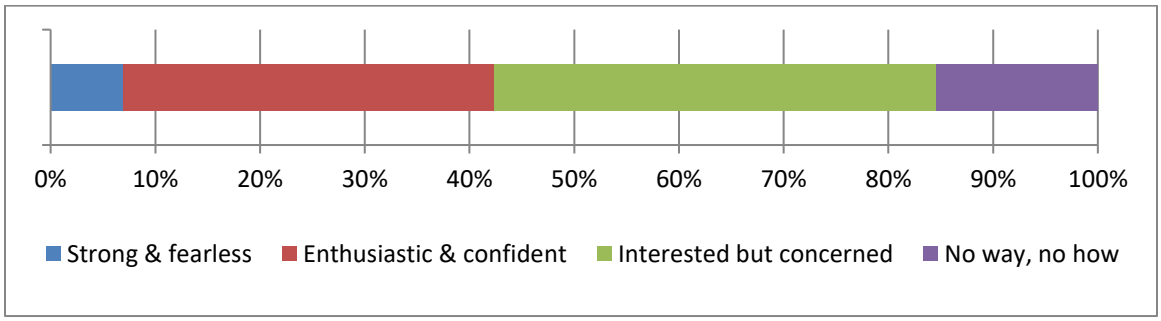
Types of Cyclists

The American population can be divided generally into four classes of bicyclists:

- **"Strong and Fearless."**
  - These riders are confident in their abilities and will ride regardless of roadway condition, amount of traffic, or inclement weather.
- **"Enthusiastic and Confident."**
  - Riders are comfortable sharing the road with motor vehicles, but they prefer to ride on separate facilities like bike lanes. May or may not ride in inclement weather.
- **"Interested but Concerned"** about their vulnerability.
  - Very few of these people regularly ride a bicycle, but they like riding. They are concerned that their route is not safe to ride, so they don't ride very often, and definitely do not ride when the weather is bad.
- **"No way, No how"** to biking.
  - They are not interested in bicycling at all, not even for recreation.

Figure 1 shows how Tomahawk's population sees themselves per the June 2021 survey.

Figure 1: Types of Cyclists in Tomahawk



The challenge to increasing bicycling among the general population in Tomahawk is making biking appeal to the big "interested but concerned" contingent, and to better support the large "enthusiastic & confident" group of riders.

By building a bicycle network that addresses the needs for the "interested but concerned" group, the more confident bike riders will also be served.

Types of Pedestrians

Everyone is a pedestrian at some point in their trip, whether it is from home to car, or walking to the bus stop. There are essentially two groups of pedestrians: **1) general pedestrians who walk,** and **2) pedestrians with limitations that make walking challenging to impossible.** Pedestrians, such as the elderly, children, people with physical or mental disabilities, and the blind may have limitations that make walking more challenging.

General Pedestrians

The general pedestrian is anyone who can walk along and across streets without being limited by physical, sensory, or cognitive impairments.

Pedestrian [puh-des-tree-un] noun

Wisconsin State Statutes 340.01(43) defines pedestrian as: "any person afoot or any person in a wheelchair, either manually or mechanically propelled, or other low-powered, mechanically propelled vehicle designed specifically for use by a physically disabled person."

People with Limitations That Make Walking Challenging to Impossible

Since there are people with different abilities, then understanding how they need to interact with pedestrian facilities is the first step for policy makers in creating accessible facilities. The needs of disabled people and other pedestrians should determine what is accessible design that everyone can use. WisDOT's Pedestrian Policy Plan 2020 was used in this section to identify the types of pedestrians and their limitations for navigating the built environment.

Children

Facilities designed to separate and protect children will be welcomed by everyone else. General limitations of children include:

- One-third less peripheral vision than adults, making it difficult to see turning vehicles or those down the road;
- Less cognitive ability and experience to judge speed and distance, making safe crossings more difficult;
- Lower auditory development makes it difficult to localize the direction of vehicle sounds;
- Overconfidence in their judgements may result in poor decisions on crossing timing;
- Inability to read or comprehend warning signs, traffic signals, and directional aids;
- Inexperience dealing with complex traffic situations results in poor decisions; and
- No sense of fear.

Nearly one-fourth of Wisconsinites are younger than 15 years of age. Children do not develop adequate sign, thinking, and hearing abilities necessary to cross streets safely until age 10 or later.

– WisDOT, Ped. Policy Plan

Mobility Impairments

People with mobility impairments include those who use wheelchairs, crutches, canes, walkers, orthotics, and prosthetic limbs.

Characteristics common to mobility impaired individuals include:

- Space requirements to accommodate their assistive device (e.g., manual wheelchairs have an average turning radius of 5 feet and require a minimum sidewalk width of 3 feet); and
- Difficulty negotiating soft surfaces (e.g., grass, sand, or loose gravel).

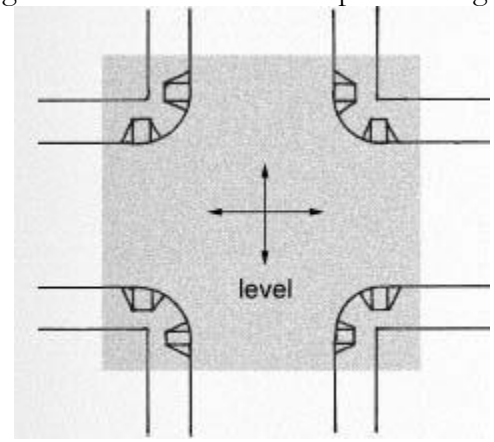
Sensory Impairments

For visually impaired users, intersections are easiest to negotiate when the line of travel from the edge of the sidewalk to the opposite curb is straight and unimpeded by obstacles. – WisDOT, Ped. Policy Plan

Sensory impairments include problems with depth perception, deafness, tunnel vision, blindness, or color blindness. Assistive technologies may include hearing aids, corrective lenses, white canes, or guide dogs. For visually impaired users, intersections are easiest to navigate when the line of travel from the edge of the sidewalk to the opposite curb is straight and unimpeded by obstacles rather than skewed as at some irregularly shaped intersections. Designing curb ramps to face the line of travel across a road, as shown in **Figure 2**, will greatly assist visually impaired users. Driveways pose a challenge because the hearing impaired pedestrian is unable to hear the vehicle especially when shrubs or fences block sound and view.

Figure 2: Curb ramp placement at intersection

The preferred design is to have a separate curb ramp aligned with each crossing direction to allow all pedestrians to cross at the same location. At most intersections, a pair of perpendicular curb ramps placed at 90 degree angles to one another is the optimal design for meeting these criteria.



The shaded area of the intersection should be level for pedestrian travel.

Source: FHWA, Designing Sidewalks and Trails for Access.

Cognitive Impairments

People with cognitive impairments have difficulty perceiving, recognizing, understanding, interpreting, and responding to information. Cognitive disabilities can hinder a person's ability to think, learn, and reason. Facility designers might consider that such a reduced capacity for sensory processing and problem solving may cause such people to experience more difficulties negotiation unfamiliar environments.

Overall, level sidewalks and well-designed ramps and crossings complement people with disabilities. – WisDOT, Ped. Policy Plan

Benefits of Walking and Bicycling

The benefits of walking and biking are significant and help to justify expenditures required to develop a comprehensive, safe, and attractive walking and biking network throughout Tomahawk. Continuing to build that network enhances a community's quality of life, which is an increasingly important factor in attracting and retaining employees in a community. Some other benefits include:

- **Transportation:** General transportation benefits of walking and bicycling include a wider range of transportation choices, reduced congestion, decreased need for parking, and the implementation of safety improvements that benefit all roadway users. Walking and biking are the most efficient modes of transportation regarding operation, development of facilities, and maintenance.
- **Health and Fitness:** Walking and biking have the added benefit of fostering a healthy lifestyle while also transporting you to where you need to go. This will not only increase your stamina and heath, but also your ability to perform other physical activities.
- **Recreation:** Paths developed for walking and biking provide recreation opportunities.
- **Economic:** Bicycling can translate into tourism dollars. WisDOT has targeted bike touring and trail riding as high potential tourism activities since the 1980s, and has recently added mountain biking to that list. In a 2019 WisDOT study, consumer spending by road bicyclists was $1.03 billion and for mountain bikers it was $394 million. This economic contribution exceeded the amount of total visitor spending in Dane County in the same year.
- **Social:** Walking and biking stimulate social interaction of families and community. Trails can help provide a sense of place and a source of community pride.
- **Quality of Life:** The extent of walking and bicycling in a community has been described as a gauge of how well it is advancing its citizens' quality of life. Streets that are busy with bicyclists are considered environments that work at a more human scale and foster a heightened sense of place. These benefits are difficult to quantify, but when asked to identify sites that they are most proud of, residents often name spots where bicycling is common, such as a popular bikeway or riverfront project.
- **Environmental:** Biking consumes no fossil fuels and does not contribute to noise or air pollution. Furthermore, careful development of off-road facilities can protect and enhance natural resources.

CHAPTER 2
EXISTING CONDITIONS

Knowing what currently exists provides a baseline for monitoring changes in facility use. An inventory of roadway conditions, bicycling and walking facilities, and crash locations will build this baseline.

Roadway Conditions

Generally, the wider the road, the more vehicle and bicycle traffic it can accommodate, because fewer **triple pass occurrences** would restrict traffic speed. It is the law in Wisconsin that a motor vehicle must provide at least 3 feet between it and a bicycle when passing. Buses are wider than cars, and buses are about 8.5 feet wide; so a car (less than 8.5 feet wide) + 3 feet + a bike + an on-coming car can fit on a road that is 24 feet wide without any of the three vehicles leaving the pavement. The car passing the bike would probably cross the centerline slightly to make room for the bike, while still maintaining room for the on-coming vehicle.

Triple Pass Occurrence

A triple pass occurrence is when a bicycle, and oncoming motor vehicle, and an overtaking motor vehicle arrive at the same lateral section at the same time.

Functional Classification

Functional classification groups highways and streets according to the character of service they are intended to provide, ranging from a high degree of travel mobility to land access functions. Roads rated on **Maps 1A & 1B** are the higher traffic volume roads that are functionally classified by WisDOT as: Collector, Minor Arterial, or Principal Arterial. Tomahawk's functionally classified roads are shown on **Maps 1A & 1B.** Most road recommendations in this Plan will focus on these types of roads.

Bikeability of Roads

Only roads leading into Tomahawk were rated for their level of bicycle friendliness by WisDOT in 2020, see **Map 2**. Low traffic volumes and paved surfaces often make neighborhood roads in Tomahawk ideal for bicycling, so most neighborhood streets are considered as having the "best conditions" for bicycling, and therefore are not rated on **Map 2.** Unfortunately, WisDOT did not rate any of the main roads in Tomahawk.

Traffic Volumes

Traffic counts are reported as the number of vehicles expected to pass a given location on an average day of the year. This value is called the "annual average daily traffic" or AADT and is represented on traffic count or traffic volume maps. The AADT is based on a short duration traffic count, usually 48 hours, taken at the location. This count is then adjusted for the variation in traffic volume throughout the year and the average number of axles per vehicle. See **Maps 1A & 1B** (Functional Classification of Roads) for 2019 traffic volumes.

Truck Routes

Several state highways in Tomahawk are Designated Long Truck Routes, which means that the heaviest, longest, and oversized trucks that can legally operate in Wisconsin can use these roads. See **Map 3**. WisDOT requires a 12-foot wide lane to accommodate these trucks, but allows 11-foot wide lanes if they are next to bike lanes.

The City of Tomahawk has also designated a few additional roads for through truck traffic.

National research indicates that bicycles and trucks can exist successfully in the same city by separating bicycle traffic from truck traffic and by developing context sensitive solutions where the two modes of travel need to use the same roads.

No semi-truck & bike or semi-truck & pedestrian crashes occurred in Tomahawk from 2015-2020.

Crash Data

Safety is often cited as the primary reason people do not bike or walk more. Creating a safer environment for these activities is an important focus that requires an understanding of safety issues and proven actions that can be taken to improve safety. Crashes involving motor vehicles that result in injuries or fatalities to bicyclists and pedestrians have been recorded at the state and federal levels for many years.

Traffic safety experts have moved away from the term **accident** in favor of the term **crash** to describe a collision. An **accident** is defined as an unforeseen and unplanned event or circumstance. WisDOT made this change in 1990 because traffic crashes are not accidents, but avoidable events caused by a single variable or chain of variables.

Crash data are reported universally for Wisconsin on Form MV400. However, it is important to highlight some shortcomings.

1. Some studies indicate that as few as 10% of all bicycle crashes are reported;
2. Some roads with a higher frequency of bicycle crashes may have higher bicycle use;
3. Very likely that there will be no detectable pattern of bicycle crashes because of the small number reported in rural areas and small cities.

Tomahawk Crash Data

In Tomahawk, it appears that most registered crashes occurred within the downtown. Some known difficult crossings throughout the City also have a crash shown on **Map 4**.

Here are some statistics about crashes that involved a bike or a pedestrian in Tomahawk:

- There were 6 bike and pedestrian crashes between 2015-2020.
- 4 of these crashes involved a pedestrian, and 2 involved a bicyclist.
- All crashes were male [nationally, most crashes are male], one person not listed.
- All pedestrian crashes involved people over 40 years old.

A summary of Tomahawk's crash data collected between 2015-2020 is shown on **Map 4.**

The Park and Recreation Committee identified the following intersection as very difficult to navigate as a pedestrian:

- 4th Street & Wisconsin Ave.

Wisconsin Bike Crash Analysis

A bicycle crash analysis that was performed for Wisconsin in 2006 (**Attachment A**) has some major findings that directly affect bicycle planning in Tomahawk:

- "Four out of the top five crash types indicate that the motorist made the critical error. This may indicate that motorists are not fully aware of bicyclists on the roadway and that increased education is necessary."
- "For local rural roads [like county highways near Tomahawk], the greater the width, the lower the bicycle-vehicle crash rate. Twenty-foot roadways had a crash rate that was double the crash rate of 22-foot roadways, but the 22-foot roadways had a rate that was over 40% higher than 24-foot roadways. Overtaking-type crashes were significantly lower for 24-foot roadways."
- "Rural state highways had much lower bicycle-vehicle crash rates than local roads. Similar to local roads, 24-foot roadways had significantly lower crash rates then 22-foot roadways. Interestingly, having 3-foot paved shoulders did not improve the crash rate among these widths of roadways. However, the crash rate did significantly lessen when five [foot] paved shoulders were added [compared to three foot paved shoulders]."

In 2015, WisDOT commissioned a pedestrian and bicycle crash analysis (**Attachment B**) which also have some major findings that directly affect bicycle planning in Tomahawk:

Overall Trends in Wisconsin Pedestrian and Bicycle Safety

- "Higher levels of walking and bicycling were associated with greater pedestrian and bicyclist safety: between 2006 and 2013, the number of people walking and bicycling to work increased and the risk of pedestrian and bicyclist fatalities and injuries (per commuter) decreased."
- Of fatal traffic crashes reported between 2011 and 2013, approximately 10% involved pedestrians and 2% involved bicyclists. Approximately 9% of total trips were made by

pedestrians and 1% were made by bicyclists, so these travel modes were overrepresented in fatal crashes.

- The highest concentrations ("hot spots") of fatal and severe-injury pedestrian and bicycle crashes tend to be along signalized, multilane, arterial roadway corridors in urban and suburban areas with moderate to high levels of pedestrian or bicycle activity. Without controlling for pedestrian and bicycle volumes (or other measures of exposure), it is not possible to determine if these locations experienced more crashes simply because they had more activity or because their conditions were inherently more dangerous. Regardless, these types of locations warrant attention due to high numbers of crashes.

Strategies to Improve Pedestrian and Bicycle Safety (Attachment B)

Engineering Strategies

- "Reduce roadway design speeds (e.g., reduce the number of lanes, narrow roadway lanes)."
- "Reduce roadway crossing distances."
- "Provide pedestrian and bicycle facilities (e.g., sidewalks, paved shoulders, and bicycle lanes)."
- "Improve roadway lighting."

See **Attachment B** for additional strategies in Education, Enforcement, & Evaluation.

National Bike Crash Analysis

Since crash typing provides an indicator of critical errors or actions that likely led to the crash rather than on assigning fault, then potential options for reducing specific types of crashes can be identified. These options include better engineering and design, increased education, stronger enforcement, or a combination. As an example, the most frequent crash type involving children is mid-block ride out. Eliminating on-street parking would be one way (engineering/design) to reduce the incidence of this type of crash; however, educating parents and children to this danger may be more effective and less controversial. Similarly, while there are a number of engineering and design techniques that would be effective in reducing the number of bike crashes involving turning motor vehicles, using educational and enforcement techniques to alert both bicyclists and motorists of this concern should be a complementary strategy. These are but two of a litany of common causes for bike crashes and are cited because they demonstrate that there are multiple techniques that are available for improving safety for both bicyclists and pedestrians. At the same time, they show that having a clear understanding of how, where, and why crashes occur can be a crucial determinant in effectively targeting dollars for safety related improvements.

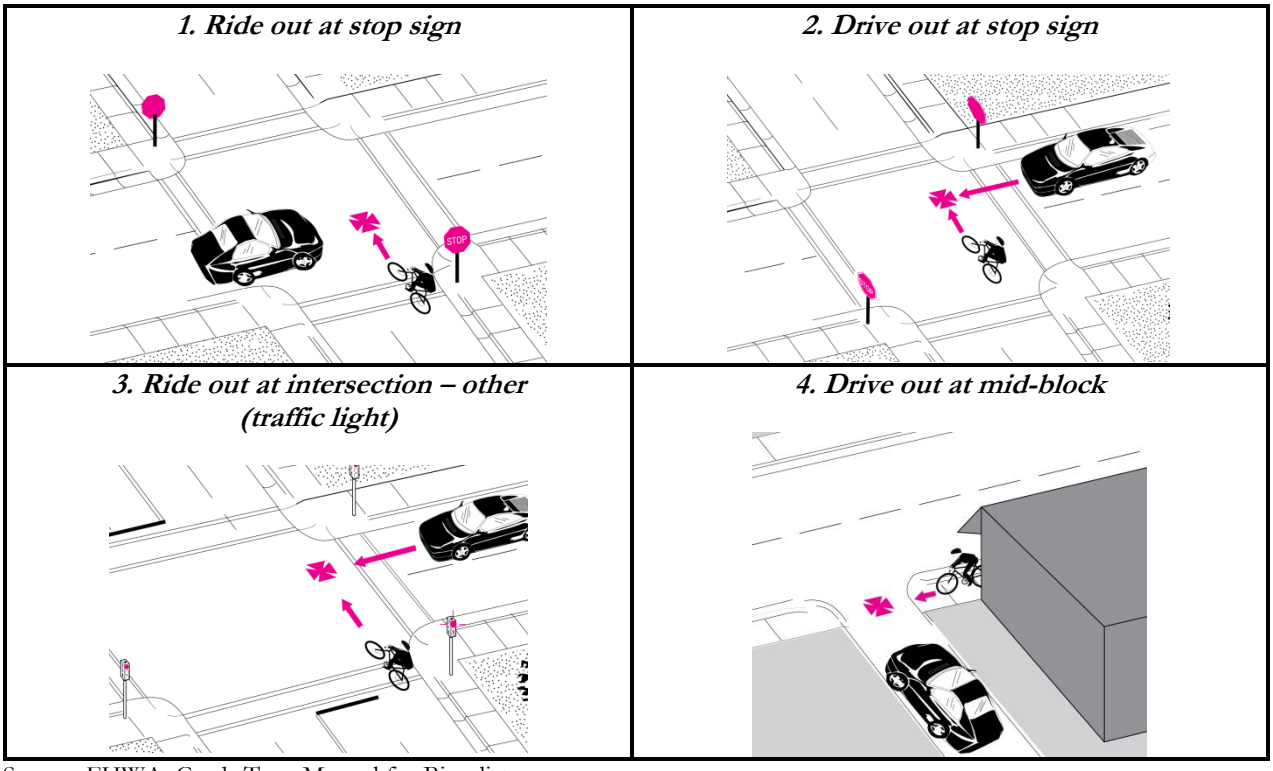
Types of Bike Crashes

Studies have shown that it is possible to "type" crashes into distinct categories. A study undertaken by the FHWA of crashes involving bicycles and moving motor vehicles in six states has identified 38 different crash types. With a database of nearly 3,000 incidents, there are enough incidents in each crash type to provide a relatively good indicator of where, why, and how most crashes occur.

The FHWA study found that the most common crash types were (**Figure 3**):

1.) ride out at stop sign (9.7%)
2.) drive out at stop sign (9.3%)
3.) ride out at intersection – other (7.1%)
4.) drive out at mid-block (6.9%)

Figure 3: Top Bike Crash Types

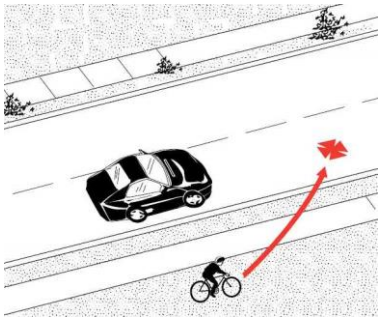
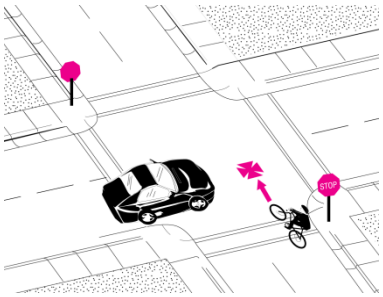


Source: FHWA, Crash-Type Manual for Bicyclists

The three most common crash types involving children (**Figure 4**):

1.) bicyclist mid-block ride-out
2.) bicyclist ride-out at controlled intersection
3.) bicyclist makes unexpected turn or swerves into traffic

Figure 4: Top Bike Crash Types Involving Children

Bicyclist mid-block ride-out	***Bicyclist ride-out at controlled intersection***	***Bicyclist makes unexpected turn or swerves into traffic***
 1. Rides off the curb; 2. Rides out at a driveway; 3. Rides into the road from a gravel shoulder or parking lane.	 Rides through a stop sign.	Four common possibilities: • Left turn: parallel paths, same direction • Left turn: parallel paths, facing approach • Swerve left: parallel paths, same direction • Right turn: bicyclist riding wrong way

Source: FHWA, Crash-Type Manual for Bicyclists

Walking and Bicycling Facilities

Pedestrian Infrastructure

Sidewalks are the primary piece of infrastructure that everyone thinks of when asked where walking is allowed, but the road itself is a walking surface. In Tomahawk, all roads except U.S. Highway 51 are legal to walk and bike on. It is not safe to walk in a travel lane of a 4-lane highway, and it would slow down traffic flow, so sidewalks or a 5-foot paved shoulder are usually provided for people to walk on. Walking is only acceptable on low volume streets and streets that are wide enough to allow for parked vehicles. If there are too many parked vehicles taking advantage of this space, then sidewalks should be installed.

In Tomahawk, sidewalks exist on both sides of many roads in the downtown core, but there are significant gaps or missing altogether in various residential neighborhoods. Curb ramps don't exist on most corners in Tomahawk.

Map 5 – Walking and Biking Facilities shows where sidewalks are in Tomahawk along with other bike and pedestrian facilities.

Map 10 – Proposed Improvements shows where additional sidewalks and paths are proposed.

Crosswalks are the other piece of infrastructure for people to use when crossing streets. In Wisconsin, every street intersecting another street has crosswalks regardless of if they are marked or not.

The challenge for road designers is to balance competing user types (cars, trucks, bikes, pedestrians) in the limited amount of right-of-way, and to develop a transportation infrastructure that provides equal access and safety for all user types.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) became law in 1990. The ADA is a civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life. For transportation purposes this means that sidewalks need ADA compliant ramps on every corner, ends of marked crosswalks, and where the sidewalks start/end to provide access to disable individuals.

Determining if a 4-lane highway or other road should have sidewalks or paved shoulders, directly relates to how many people are projected to walk along that road in a given day, which in most cases depends on the types of land uses along and/or within the vicinity of the road. For example, many state highways now have 3-foot wide paved shoulders to reinforce the lane pavement, but also to provide a minimal amount of pavement for bicyclists. WisDOT provides 5-foot paved shoulders along some moderate to high volume highway segments to provide additional space for areas with higher bicycle and/or pedestrian use or expected higher by bicycle and/or pedestrian use because of the type of land uses within the vicinity. Also, designated bicycle routes are considered by WisDOT when determining if 5-foot paved shoulders should be provided or not. For some lower to moderate volume highway segments that don't currently have paved shoulders or shoulders less than three feet, WisDOT may decide to provide 3-foot paved shoulders for areas expected to have higher bicycle and/or pedestrian use and/or have designated bicycle routes.

This plan takes into account where people are walking now or where they could be walking if the right facilities or circumstances were in place for them to walk confidently.

Bicyclist Infrastructure

Paved roads are the main bicycling infrastructure. In Tomahawk, all roads except U.S. Highway 51 are legal to bike and walk on. Pavement width, road geometry, traffic volume (both bicyclist volume and motor vehicle volume), and speed limit determine if a road is bicycle friendly or not.

Map 2 – Bikeability of Roads shows what roads coming into Tomahawk are listed as bicycle friendly by WisDOT. Bicycle suitability rating are for bicyclists 16 years of age and older. Roads in Tomahawk are not rated. Another way to view this map is that bicyclists over 16 years old who are confident enough in their riding ability ("fearless" & "enthusiastic and confident") will use this map to plan what roads are safe to use right now for their daily commute.

On-street bicycle facilities in Tomahawk (Map 5):

- **North 4th Street bike lanes** begin at Washington Avenue and head north to become wide paved shoulders to about Oneida Drive.

Off-street bicycle and pedestrian facilities in Tomahawk (Map 5):

- Sidewalks densities are shown on **Map 5.**

- **Hiawatha Trail** is a gravel trail beginning at Somo Avenue and heads north along a former railroad bed to Heafford Junction (north of the City).
- **The waterfront trail** is an asphalt paved path with boardwalks connecting the Hiawatha County Trail to the Library, then passes under North 4th Street into Memorial Park.
- The **Louisiana Pacific Trail** is a grass path on the former M.T. & W. Railroad that connects Tomahawk Avenue by Southgate Drive, northeast to Pride Park and south of the Tomahawk School Complex. A variety of boardwalks and compacted earthen paths connect the Louisiana Pacific Trail with the Tomahawk School Complex and to School Road.
- The **Wheeler Rd to Mohawk Dr trail** is a gravel path that connects Wheeler Road to Mohawk Drive on its own right-of-way.

Map 10 – Proposed Improvements shows where additional paths and road improvements are proposed.

Bicycle parking is a key piece of infrastructure that is necessary when people decide to bike to destinations. Schools are traditionally the only places that have enough bike parking for their users. When bicycling becomes a transportation choice vs. a recreational use, then more bike parking will show up at other employers and civic locations. Locking a bike to any number of objects is not adequate bike parking, although it will show where the immediate need for bike parking exists. A bike owner needs a convenient safe place to secure their bike, which is a similar need to a motor vehicle owner. Basically, well designed bike parking allows a bike to be secured using a U-lock, supports the locked bike so it does not fall down, and is located on a paved surface near the main entrance. See **Attachment D** for summarized bike parking guidance.

Bicycle wayfinding is also bike route development. Some roads are just too busy for most users to feel comfortable riding on, so alternate routes are needed. Parallel roads sometimes provide this alternative. While riders are on streets or paths that are not the main roads in Tomahawk, they may need some guidance that directs them to common civic, commercial district, and park destinations. There are two common sources for constructing and locating proper wayfinding signage: The Manual for Uniform Traffic Control Devices, and the NACTO Urban Bikeway Design Guide, and WisDOT's Traffic Operation and Safety Manual. See **Attachment P** for bike route signs and road marking guidance for Tomahawk.

Bicycling Education

For many cyclists and motorists, the shared use of the roadway can be very intimidating. Cyclists are intimidated by the faster and obviously heavier motor vehicles, and motorists are intimidated by the unpredictable behavior exhibited by many cyclists. Sometimes bicycle signage and road markings are not familiar to motorists. Other times, bicyclists don't follow basic rules of the road which may place them in extreme danger (e.g., not stopping or even looking both ways at a stop sign). Sometimes motorists are not looking for bicyclists or become impatient because bicyclists are holding them up.

In order to effectively re-educate motorists and cyclists regarding shared use of the road, the education program must target all age groups and the community at-large.

Currently in Tomahawk, there are no annual events or standardized educational efforts in the public or the schools related to teaching bicycling skills. Occasional citywide Bike Rodeos have taken place, with the most recent one occurring in June 2022. Tomahawk Summer School has an optional Pedal to Paddle class that in-part teaches about bike safety.

The Recommendations chapter of this plan will provide guidance on upgrading current educational efforts in Tomahawk.

Reference Plans and Laws

Each plan and law listed below affects walking or bicycling facilities in Tomahawk.

Tomahawk's Municipal Code

Various municipal codes in Tomahawk relate to where sidewalks are required, size and strength requirements, and maintenance responsibility.

All sidewalks within Tomahawk must be at least 5-feet wide; some are wider per ordinance.

Each resident owned bicycle must be registered once with the Police.

No restrictions exist about what type of bicycle may be operated within Tomahawk.

All Wisconsin laws related to bicycling cover Tomahawk as-is. Tomahawk has not authorized any exceptions to state law where that flexibility may exist.

Tomahawk's Comprehensive Plan, 2017

The Tomahawk Comprehensive Plan was updated in 2017. This document covers all types of development that may occur throughout Tomahawk and encourages the City to continue updating the City's Outdoor Recreation Plan to maintain recreation facilities that residents want.

A recommendation from this 2017 Plan is to "Develop a trail plan for the City that accommodates hiking, biking, as well as motorized activities while minimizing conflict between users, including a waterfront trail connection between Veterans Memorial Park and Bradley Park."

Transportation Chapter

The following Transportation Issues relate to walking and biking:

- Creation of a walking trail between the Library and SARA Park [Completed]
- Trucks speeding through town from USH 51 to STH 86 on Somo Ave.

Under the transportation goal are the following walking & biking objectives and policies:

Objective B: Promote the development of sidewalks, multi-use trails, and trail linkages.

Policy D: Consider extension of trails as part of new development.

Within this chapter is a map titled: "Trails & Bike Routes." Existing and proposed on and off-road routes and trails are shown. **Note:** This map was reviewed and refined and is now **Maps 9A & 9B – Trails & Bike Routes**.

Tomahawk's Outdoor Recreation Plan, 2020-2024

The outdoor recreation plan was updated in 2019. The plan includes a background of the City

including existing demographics and economic development. The plan also identifies all existing trails, parks, and conservancy areas in the City, and identifies on-going and future outdoor recreation projects.

The plan ultimately identifies a number of recommendations and capital improvements to achieve the following goals:

Goal 1 – Upgrade Existing Parks and Establish New Parks.

Goal 2 – Provide additional water recreation.

Goal 3 – Improve walking and bicycling opportunities in Tomahawk.

State Trails Network Plan

This 2003 document clarifies the Wisconsin Department of Natural Resources (WDNR) role and strategy in the provision of all types of trails. The plan identifies a series of potential trail corridors that would link existing trails, public lands, natural features, and communities. This statewide network of interconnected trails would be owned and maintained by municipalities, private entities, and partnerships of the two. Preserving transportation corridors, such as old rail lines, is specifically discussed as a very important strategy in the creation of recreational and alternative transportation corridors.

Segment 18 – Tomahawk to Wausau

From the end of the Bearskin/Hiawatha Trail in Tomahawk, this corridor would go south to Merrill. Part of State Highway 107 has wide shoulders to accommodate bicycles. When the remaining section of State Highway 107 is reconstructed, wide shoulders will be included.
See **Segment 18** on **Map 8.**

Segment 69 – Tomahawk to Crandon

This abandoned corridor would link these two communities via an off-road connector.
Note 1: This is the Louisiana Pacific Trail in Tomahawk.
Note 2: Trail "dead ends" at U.S. Highway 51. There is no underpass.

North Central Wisconsin Regional Bicycle Facilities Network Plan, 2018

North Central Wisconsin Regional Planning Commission created this document to guide the development of an interconnected bikeway system for the North Central Wisconsin Region at the 10-county level. Potential trail corridors are identified and improvement descriptions were created for each trail that exists to facilitate implementation.

The Hiawatha County Trail is the primary designated bike route in Tomahawk.

Another route for Tomahawk is part of an on-road countywide loop that passes through Tomahawk from the south on State Highway 107, then continues north and east through the City on State Highway 86, and leaves Tomahawk by traveling east on County Highway D. See this road route on **Map 8 t**itled: "Scenic Bike Auto Tour."

Note: Routes and improvements suggested in a local bike plan supersede this regional plan.

CHAPTER 3
ROUTE PLANNING

Travel Demand within Tomahawk

A travel analysis was conducted to determine the possible demand for walking and biking within various areas in Tomahawk. Evaluating travel demand will allow Tomahawk to focus on projects that have the greatest potential for increasing walking and biking.

Large employment areas within and directly adjacent to Tomahawk are shown on **Map 6 (Major Trip Generators)**. Total employment was used from a variety of sources. The total employment estimate for a factory with two or three shifts was used even though every employee will not be on-site at one time due to multiple shifts.

Population density and employment density are the primary travel demand determinants on **Map 7 (Latent Travel Demand)**. Customer demand for downtown Tomahawk and the 4th Street commercial corridor businesses was added through airphoto analysis of parking spaces in these two districts. School population was also added, but not school employment. Since Tomahawk's elementary, middle, and high schools are all in one building, then the resulting hotspot was so hot that nothing else was visible on the map; so dialing back the hotspot by not including employment still shows the Tomahawk schools as a prominent travel destination.

Results

The primary hotspots appearing on **Map 7 (Latent Travel Demand)** are the Tomahawk schools and downtown Tomahawk neighborhoods. Additional major hotspots include the 4th Street commercial corridor, Packaging Corporation of America, Louisiana-Pacific Corporation, and SARA Park. One un-mapped hotspot is the Kwahamot Water Ski Park, where about 375 spectators gather every Tuesday, Thursday, and Saturday from Memorial Day to Labor Day to watch the water ski show.

Connecting the Tomahawk schools with the downtown and adjacent residential neighborhoods has by far the greatest potential for increasing walking and biking in Tomahawk. Ensuring adequate pedestrian and bicycle accommodations within the downtown hotspot is an equally high potential for increasing walking and biking due to the density of housing and commercial activity. The road corridors connecting the various remaining hotspots are the priority locations to possibly improve bicycle and pedestrian accommodations within Tomahawk.

Travel Demand surrounding Tomahawk

In order to determine where bicycle connections to areas surrounding Tomahawk should exist, a bike touring analysis was conducted to identify potential bicycling destinations. Various plans and the Park & Recreation Committee's local knowledge were consulted to determine what connections would be needed in the future. Evaluating tourism travel demand will allow local governments to focus on projects that have the greatest potential for increasing biking.

Analysis and Potential Recommendations

Restaurants and bars within Tomahawk and close to the City are shown on maps in **Attachment M**. These locations were identified using Google Maps and the Committee's local knowledge to verify that popular locations were captured. A large cluster of food establishments exists in Tomahawk and another cluster exists directly north of Tomahawk (Cluster of Restaurants on **Figure 5**). Access to the Cluster of Restaurants is provided by the Hiawatha Trail from Tomahawk, with connections to specific supper clubs provided by local roads or highways with wide gravel shoulders off of the Hiawatha Trail, so no additional road improvements are needed. If bike racks do not already exist at supper clubs, restaurants & bars, then each establishment could buy a bike rack per guidance in **Attachment D**. A scattering of food establishments exists east of Tomahawk along CTH A, and even further east along CTH D, east of CTH H. The Wisconsin Bicycle Map for Lincoln County shows that CTH A from 4th Street east to USH 51 has "moderate" conditions for bicycling. Widening the paved shoulders to 5 feet to just this stretch of CTH A would improve conditions for bicycling.

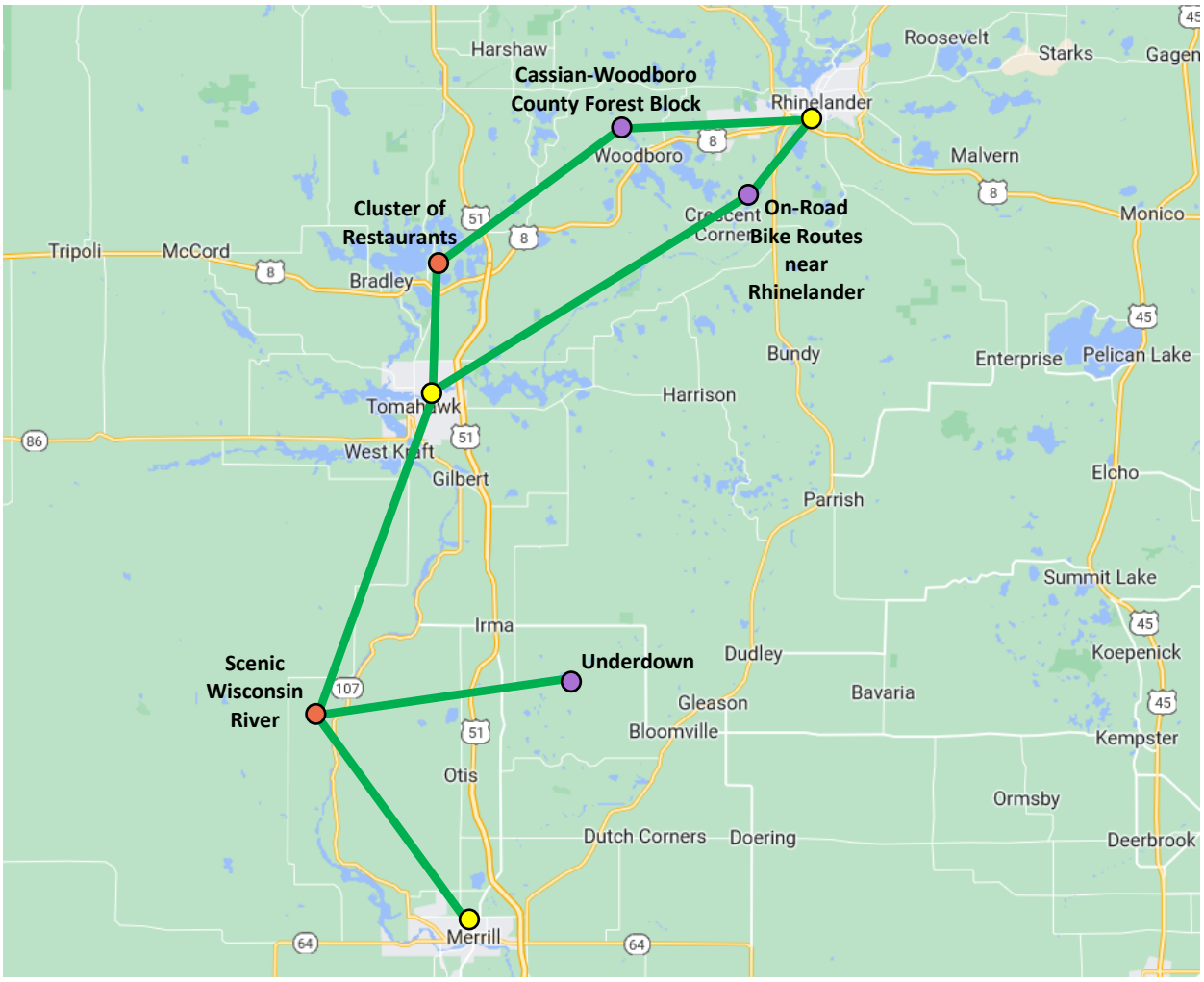
County Trunk Highway A is also the most direct route from Tomahawk to the On-Road Bike Routes near Rhinelander (**Figure 5**). For decades bike routes have been signed on various connecting roads south and southwest of Rhinelander. A sign on CTH A near STH 17 directing riders north along Woodford Rd, Noisy Creek Dr, and Washatko Rd will identify how to get to the marked bike routes, starting at Hat Rapids Road.

The Cassian-Woodboro County Forest Block (**Figure 5**) has a variety of mountain bike trails. This area is accessible in two ways from Tomahawk: 1) along CTH A out of Tomahawk east to the On-Road Bike Routes near Rhinelander, and 2) by taking the Hiawatha Trail out of Tomahawk to CTH K in Oneida County. Since the Wisconsin Bicycle Map for Oneida County shows that CTH K from Hiawatha Trail east has "moderate" to "undesirable" conditions for bicycling, then adding either 5-foot shoulders or a sidepath separate from the highway may improve conditions for bicycling.

The Scenic Wisconsin River destination on **Figure 5** includes all of STH 107 between Tomahawk and Merrill, and part of CTH S into Tomahawk. This bike route is identified in the Lincoln County Outdoor Recreation Plan and this Plan as a potential gravel sidepath along STH 107 and CTH S the full distance between Tomahawk and Merrill. Even though the Wisconsin Bicycle Map shows all of STH 107 and CTH S as having the "best" conditions for bicycling, nobody in the large "Interested but concerned" group of bicyclists would ever consider that route without a sidepath due to CTH S having a posted speed of 55 mph, and scenic distraction of motorists in the many no passing zones on STH 107. This could become a major trail similar to the Hiawatha Trail.

Off to the east of STH 107 are the Underdown (**Figure 5**) mountain bike trails, which are accessible via CTH J. No improvements are needed to CTH J.

Figure 5 Conceptual Corridors



= Stylized Corridor
= Destination City
= Destination
= Block of Trails Destination

Planning Process and Community Input

5-E Approach

Education, Encouragement, Engineering, Enforcement, and Evaluation are the "E's" that combine to provide a well-rounded and complete bicycle and pedestrian support network. As the Plan's recommendations were developed, this approach was used to work through supporting walking and biking trips. Each of the E's are briefly described below:

- **Education –** includes teaching pedestrians, bicyclists, and drivers about traffic safety and creating awareness of each other's use of the roadway. The signing of bike routes shows motorists that bicyclists may be present, and also provides wayfinding for bicyclists – just like highway signs are wayfinding for motorists.

- **Encouragement –** strategies and programming that are about getting people walking and bicycling; such activities will help build support for creating more walkable places, decrease traffic congestion, and improve physical health.

- **Engineering –** any physical change that improves conditions for walking or biking; some improvements include: building paths, creating safer crossings, and slowing down traffic. At the same time, engineering practices recognize the importance of a balanced roadway environment that can accommodate the needs of all modes of transportation, be it foot, bicycle, or motor vehicle.

- **Enforcement –** strategies by engineers, law enforcement, and other partners to deter unsafe behaviors of drivers, pedestrians, & bicyclists, and to encourage all road users to obey traffic laws and share the road safely.

- **Evaluation –** Includes monitoring the outcomes and documenting the results from implementing the other E's. Data collection before and after infrastructure improvements are implemented, such as user surveys and bicycle and pedestrian counts, are critical to measuring the overall effectiveness of the network.

Public Participation

The Tomahawk Park & Recreation Committee was the oversight committee assigned to provide guidance to NCWRPC throughout the planning process in 2021-2022. NCWRPC solicited public comments and input regarding the plan through an online survey and all Committee meetings which were open to the public. All Parks and Recreation Committee meetings were held publicly at 5:00 p.m. so most residents would be able to attend.

June 22, 2021 (5:00 p.m. at City Hall) – Parks and Recreation Committee Meeting #1 – NCWRPC staff presented the overall planning process and draft online survey. The online survey was discussed and modified for public distribution in a few days.

June-July 2021 – Online survey was available to the public from June 23rd to July 26th. See below for the survey results.

August 10, 2021 (5:00 p.m. at City Hall) – Parks and Recreation Committee Meeting #2 – NCWRPC staff presented the survey results, draft goals & objectives, and review of an initial set of maps.

November 9, 2021 (5:00 p.m. at City Hall) – Parks and Recreation Committee Meeting #3 – NCWRPC staff reviewed a full set of maps that provided background for potential recommendations. Some initial recommendations were also presented to gauge what may be acceptable based upon cost and local needs.

December 14, 2021 (5:00 p.m. at City Hall) – Parks and Recreation Committee Meeting #4 – NCWRPC staff presented an initial set of detailed recommendations for Committee reaction.

March 8, 2022 (5:00 p.m. at City Hall) – Parks and Recreation Committee Meeting #5 – NCWRPC staff requested guidance about how to design bike routes in Tomahawk based upon past route planning, and destinations outside of Tomahawk were identified too through a mapping exercise. Map 5, Proposed Improvements, and Chapter 5 Recommendations were discussed.

August 23, 2022 (5:00 p.m. at City Hall) – Parks and Recreation Committee Meeting #6 – NCWRPC presented the full draft plan for their review.

Survey Results

In June & July of 2021, this survey was made available for resident feedback in a variety of ways. Here are the places where the survey was advertised by the City: survey posters were laminated and hung in City parks at various locations and prominently along the trail that connects Memorial Park with the Hiawatha County Trail. The survey was open for 1-month.

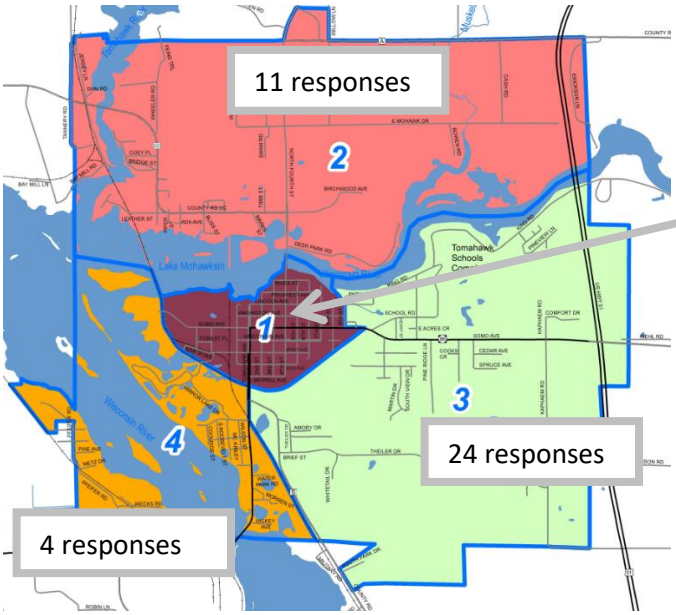
We received **148 responses** to the survey. This survey provides a much deeper understanding of the wants and needs for outdoor recreation than a public hearing, so the results are very valuable. Respondents were allowed to skip questions, so several questions had smaller response groups.

Through an IP address analysis of who took the survey it appears that 9 IP addresses are at least duplicated, which could mean that two people used the same device to take the survey; likely a husband and wife. No IP addresses were repeated more than twice. All of those duplicate IP addresses did not have the same answers, so it appears that nobody "stuffed the ballot box."

A majority of the respondents were female (71% female, 29% male). Respondents came from all age groups, with a strong showing of at least 23% in each of the following age groups: 25 to 40, 41 to 56, and 57 to 75.

For the full survey results with comments (31 pages), see **Attachment C.**

About 95% of respondents said that they live in Tomahawk or have a summer home in the City but **only 41%** provided a location in Tomahawk of where they live per the map below:



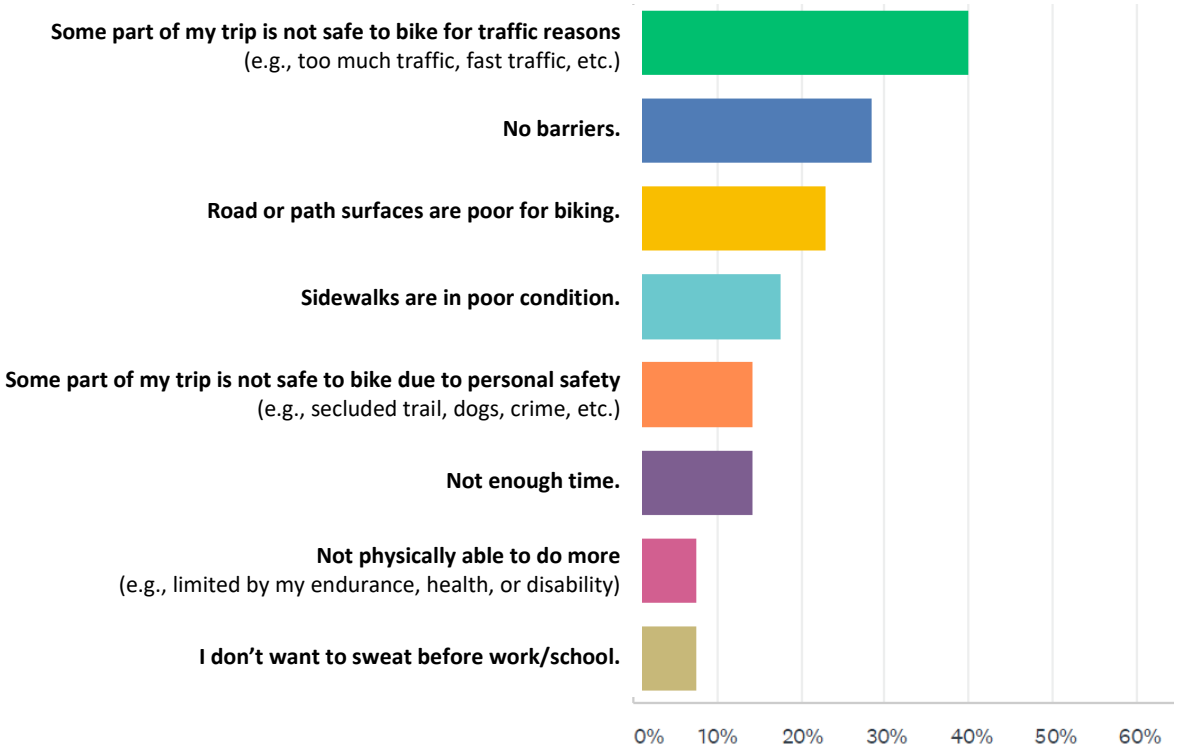
57 responses

Did NOT live in Tomahawk, but live in the 54487 zip code.

Q1. What barriers exist that limit you from walking or biking more often?

(Choose all that apply.)

Answered: 148 Skipped: 0



Q2. In a usual week in summer when the weather is good enough, how do you get to work?

Answered: 148 Skipped: 0

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTAL RESPONDENTS
Not a work day	86.44% 51	20.34% 12	20.34% 12	22.03% 13	22.03% 13	30.51% 18	86.44% 51	59
Drove alone	16.00% 12	92.00% 69	94.67% 71	92.00% 69	88.00% 66	77.33% 58	18.67% 14	75
Carpooled or Vanpooled	50.00% 1	50.00% 1	100.00% 2	50.00% 1	100.00% 2	100.00% 2	50.00% 1	2
Bus	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0
Bicycled	0.00% 0	83.33% 5	66.67% 4	100.00% 6	66.67% 4	100.00% 6	0.00% 0	6
Walked	62.50% 5	87.50% 7	62.50% 5	87.50% 7	50.00% 4	62.50% 5	75.00% 6	8
Taxi	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0
Work at home OR Retired OR Unemployed.	68.57% 48	91.43% 64	90.00% 63	87.14% 61	91.43% 64	94.29% 66	64.29% 45	70

Q3. Tell us how frequently you *walk* for the following purposes:

Answered: 141 Skipped: 7

	NOT AT ALL	MOST DAYS	AT LEAST ONCE A WEEK	AT LEAST ONCE A MONTH	AT LEAST ONCE A YEAR	TOTAL
Work or school commute	75.86% 88	12.07% 14	5.17% 6	6.03% 7	0.86% 1	116
Shopping or errands	41.46% 51	10.57% 13	28.46% 35	13.82% 17	5.69% 7	123
Walk your dog	49.59% 61	34.96% 43	8.94% 11	6.50% 8	0.00% 0	123
Recreation or exercise	6.62% 9	46.32% 63	36.03% 49	11.03% 15	0.00% 0	136
Social or entertainment	21.01% 25	19.33% 23	31.09% 37	26.05% 31	2.52% 3	119

Q4. Tell us how frequently you *bike* for the following purposes:

Answered: 141 Skipped: 7

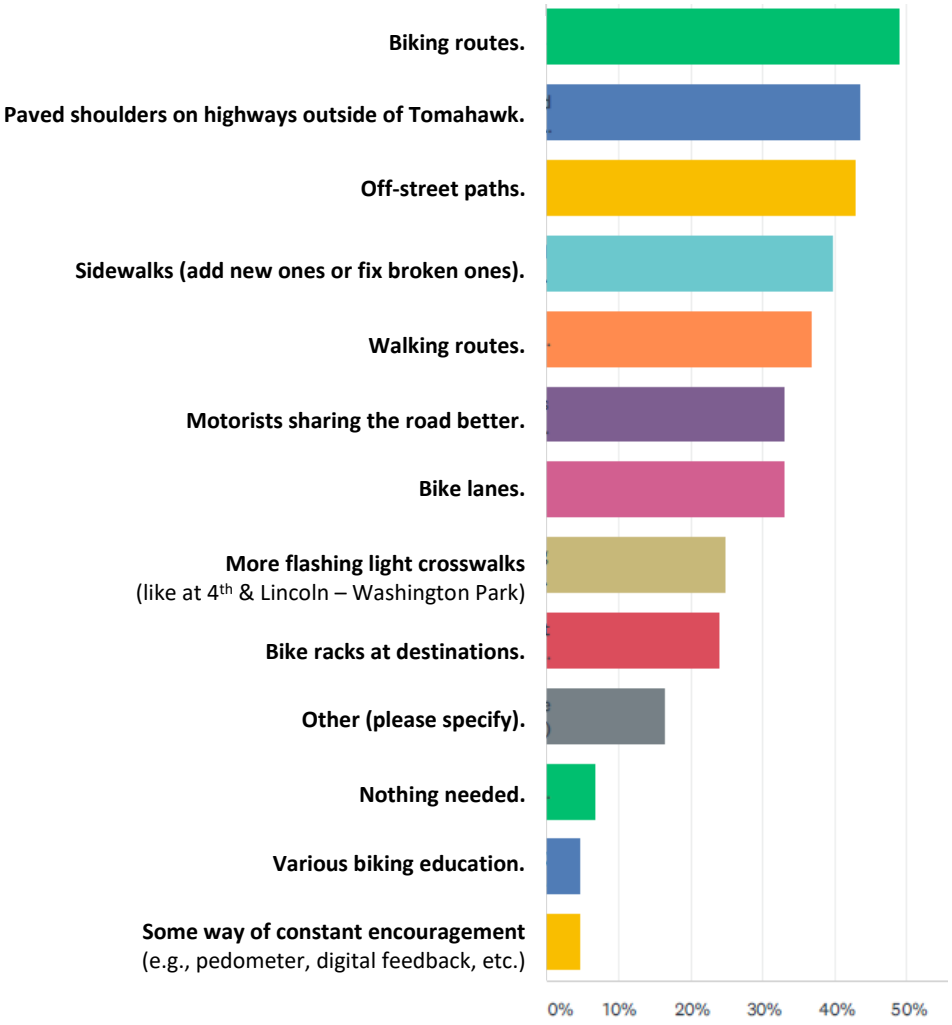
	NOT AT ALL	MOST DAYS	AT LEAST ONCE A WEEK	AT LEAST ONCE A MONTH	AT LEAST ONCE A YEAR	TOTAL
Work or school commute	86.07% 105	4.92% 6	4.10% 5	1.64% 2	3.28% 4	122
Shopping or errands	69.77% 90	4.65% 6	10.85% 14	10.08% 13	4.65% 6	129
Bike with your dog	94.26% 115	0.00% 0	3.28% 4	2.46% 3	0.00% 0	122
Recreation or exercise	31.65% 44	18.71% 26	28.06% 39	15.83% 22	5.76% 8	139
Social or entertainment	51.20% 64	9.60% 12	17.60% 22	17.60% 22	4.00% 5	125

Q5. What concerns do you have about walking or biking in Tomahawk?

Answered: 74 Skipped: 74

(Word Cloud – The larger the word the more mentions)

Q6. What would you like to see in Tomahawk that would help you to walk or bike more often: *(Choose all that apply.)* *Answered: 133 Skipped: 15*



Q7. Any comments about what would help you walk or bike more?

Answered: 35 Skipped: 113

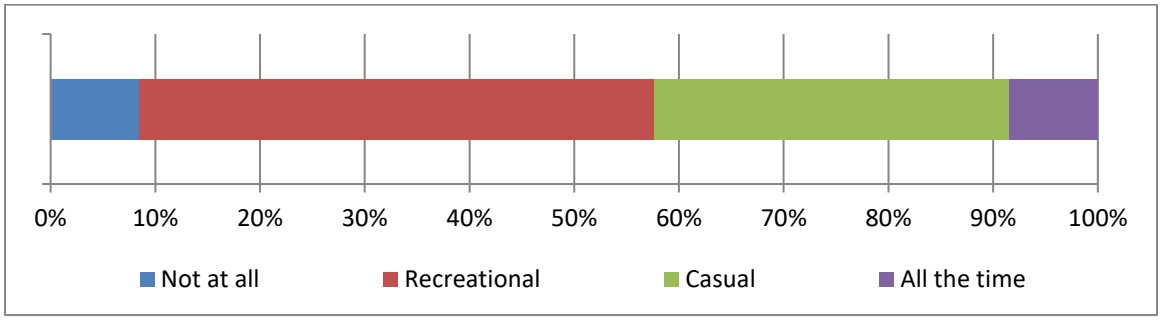
(Word Cloud – The larger the word the more mentions)

Q8. What distance do you *walk one-way* for the following trips in Tomahawk?

Answered: 131 Skipped: 17

	NOT AT ALL.	A FEW BLOCKS (ABOUT 5 MINUTES)	UP TO 1 MILE (ABOUT 20 MINUTES)	UP TO 1.5 MILES (ABOUT 30 MINUTES)	BEYOND 1.5 MILES.	TOTAL
Work or school commute	74.56% 85	6.14% 7	7.89% 9	2.63% 3	8.77% 10	114
Shopping or errands	41.53% 49	23.73% 28	14.41% 17	8.47% 10	11.86% 14	118
Walk your dog	50.00% 59	5.93% 7	16.10% 19	11.86% 14	16.10% 19	118
Recreation or exercise	11.72% 15	5.47% 7	14.84% 19	18.75% 24	49.22% 63	128
Social or entertainment	26.67% 32	15.83% 19	15.83% 19	15.00% 18	26.67% 32	120

Q9. What type of pedestrian are you? Answered: 130 Skipped: 18



Not at all. (Basically, only from my vehicle to a building and back again.)

Recreational. (I primarily walk for recreation or exercise.)

Casual. (I sometimes walk to the store, for fun or exercise, or to walk the dog.)

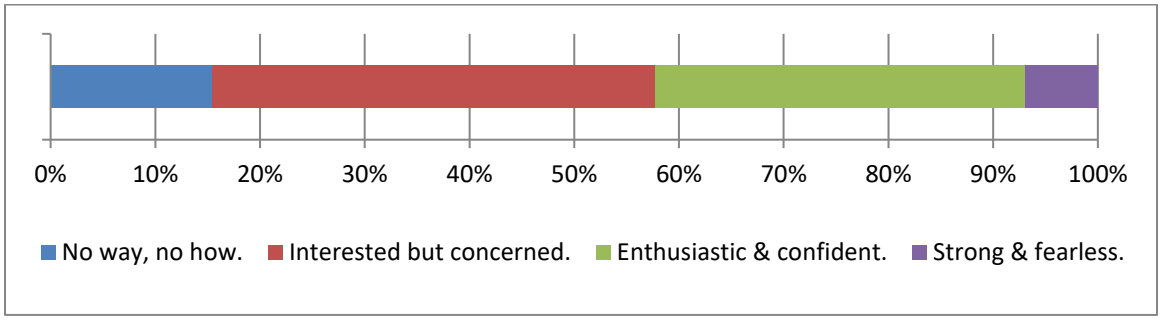
All the time, Anywhere. (I walk for most trips, including to work or school, shopping, and for fun & exercise.)

Q10. What distance do you *bike one-way* for the following trips in Tomahawk?

Answered: 130 Skipped: 18

	NOT AT ALL.	A FEW BLOCKS (A COUPLE MINUTES)	UP TO 1 MILE (ABOUT 5 MINUTES)	UP TO 2 MILES (ABOUT 10 MINUTES)	BEYOND 2 MILES.	TOTAL
Work or school commute	85.47% 100	0.85% 1	5.13% 6	4.27% 5	4.27% 5	117
Shopping or errands	68.91% 82	2.52% 3	9.24% 11	10.92% 13	8.40% 10	119
Bike with your dog	93.86% 107	0.00% 0	0.88% 1	3.51% 4	1.75% 2	114
Recreation or exercise	35.66% 46	0.00% 0	5.43% 7	7.75% 10	51.16% 66	129
Social or entertainment	51.26% 61	1.68% 2	5.04% 6	11.76% 14	30.25% 36	119

Q11. What type of bicyclist are you? Answered: 130 Skipped: 18



No way, no how. (I'm not interested in biking at all, not even for recreation.)

Interested but concerned. (I like riding, but don't do it regularly. I'm generally concerned that my route is not safe to ride, so I don't ride often. I definitely do not ride when the weather is bad.)

Enthusiastic and confident. (I feel comfortable sharing the road with motor vehicles, but I prefer to ride on separate facilities like bike lanes. I may or may not ride in inclement weather.)

Strong and fearless. (I am confident in my abilities and will ride regardless of roadway conditions, amount of traffic, or inclement weather.)

CHAPTER 4
GOALS and OBJECTIVES

To guide the process of documenting the activities and facilities needed to enhance bicycle and pedestrian facilities throughout Tomahawk, a number of goals and objectives were created. As the public and private sectors consider improving biking and walking conditions within their realms of influence, they are encouraged to review how these goals and objectives may improve their efforts.

The following goals regarding Tomahawk's bicycle and pedestrian network are an essential part of this plan and should be considered by local, County, State, and Federal agencies when undertaking activities related to these networks.

The goals and objectives are divided into two initiatives – Local and Tourist. The Tourist initiative builds upon the Local initiative.

Local Initiative

The *Local Initiative* is directed at improving walking and biking for local residents.

Goal 1 – Establish safe and convenient bike routes between trip generators for transportation purposes.

Objective 1.1 – Create a set of bike routes that gets employees to work, and provides safe and convenient routes between trip generators for errands and social trips.

Objective 1.2 – Identify very hazardous road segments so that road improvements can be scheduled to make those segments much safer to use.

Objective 1.3 – Sign bike routes so bicyclists know that they are on the right route and to alert drivers to become aware to share the road with bicyclists.

Objective 1.4 – Encourage creation of a bicycling club to increase local support for using bike improvements recommended in this Tomahawk Bike & Pedestrian Plan.

Goal 2 – Provide bicycle parking. Everyone who owns a bicycle has a place to securely park it at home, but many destinations do not provide secure bicycle parking.

Objective 2.1 – Provide bicycle parking guidance to all employers that want to become more bicycle friendly.

Objective 2.2 – Work with downtown businesses to coordinate better handicapped vehicle parking and bicycle parking within the street & sidewalk right-of-way.

Objective 2.3 – Provide assistance to employers who want to create bike parking for their employees.

Goal 3 – Make all roads safe to walk in Tomahawk. All roads except Highway 51 in Tomahawk are available for people to walk and bicycle on. Some roads are dangerous or very uncomfortable to walk or bicycle on. Alternative routes are needed or the road right-of-way needs some other accommodation to make it safe for all users.

Objective 3.1 – Create a table or matrix about where sidewalks should be installed.

Objective 3.2 – Identify major walking improvements on a map.

Goal 4 – Make all sidewalks ADA compliant. The Americans with Disabilities Act was signed into law in 1990. Many others can also benefit from curb ramps, like parents with strollers and the elderly. Visually impaired individuals may need special traffic light crosswalk buttons with sound.

Objective 4.1 – City to make a short multi-year plan to bring all sidewalks up to ADA compliance.

Goal 5 – Improve confidence with biking on the road. Bicycles are legally classified as: vehicles on Wisconsin roadways. That means bicyclists must obey the rules of the road like any other vehicle and must be treated as equal users by all other vehicles.

Objective 5.1 – Partner with WisDOT and community service groups to provide bicycle safety education to the full range of road users (e.g., motorists, driver education classes, families with children, moderately comfortable bicyclists, expert bicyclists, and bicycle group riders) through various departments and community service groups.

Objective 5.2 – Encourage creation of a bicycling club to organize fun rides for all abilities. Groups of riders are a lot more visible. Riding with a group will help individuals become more confident riders overall.

Goal 6 – Improve confidence with walking on the road. People driving are required by law to yield the right of way to pedestrians in a marked or unmarked crosswalk.

Objective 6.1 – Improve the road to reduce the occurrences of drivers encroaching on pedestrians who walk along the road and pedestrians using crosswalks.

Objective 6.2 – Partner with WisDOT and community service groups to provide walking safety education to the full range of road users (e.g., motorists, driver education classes, families with children, walkers of all ages and abilities).

Goal 7 – Provide safe routes to school. This is an opportunity to make walking and biking to school safer and fun for children in grades K-8, and to increase the number of families who encourage their children to walk and bike.

Objective 7.1 – Cooperate with NCWRPC to apply for Safe Routes to School assistance for each school covering some or all grades K-8 in Tomahawk.

Tourist Initiative

The *Tourist Initiative* is directed at improving walking and biking for tourists.

Goal 8 – Establish scenic bike loop routes.

Objective 8.1 – Map scenic bike route loops, or connections, where the route itself is the destination.

Objective 8.2 – Create a paper and/or digital map of these bike routes.

Objective 8.3 – These bike routes may or may not be physically signed on the roads. If they are to be signed, then work with the Lincoln County Highway Department to officially post any potential routes on town roads or county highways.

Goal 9 – Provide bicycle-friendly lodging. Visitors with bikes have a means for transporting their bicycle securely, but many destinations do not provide secure bicycle parking.

Objective 9.1 – Bicycle-friendly hotels, motels, or campgrounds should have secure bike storage or allow bicycles in rooms.

Objective 9.2 – If a hotel, motel, or campground is expecting to have mountain bikers, then such lodging should also provide bike washes (see the Recommendation chapter in this plan for details).

Objective 9.3 – Consider allowing un-reserved walk-in and bicycle-in camping in SARA Park for those who arrive on their own power (e.g., walking or biking).

CHAPTER 5
RECOMMENDATIONS

Plan support and endorsement both by public officials and residents alike will greatly enhance the potential that walking and bicycling will improve in the City. The Communitywide Bicycle Support Strategies recommendation is seen as an important first step in promoting uniform bicycle and pedestrian facility decisions throughout Tomahawk.

In addition to **policy-based** recommendations, NCWRPC created **education, encouragement, engineering, enforcement, and evaluation** recommendations. Where possible, the recommendations have been developed to establish priorities for undertaking specific actions. This will help decision-makers understand the value of their actions within the broader context of Tomahawk's overall bicycle and pedestrian network.

The cost-effectiveness of physical improvements often can be influenced by when, where, and how specific projects are undertaken. For example, adding paved shoulders to a larger road project is less costly than paving the shoulders as a "stand-alone" project. Similarly, since roadways with traffic volumes under 400 vehicles per day are generally considered acceptably safe for bicycling, expenditures for marking bike lanes to such a low volume road would be difficult to justify.

Implementation

The following guidance for how soon a recommendation could occur is listed by each specific recommendation:

- Short-term (less than 5 years)
- Medium-term (5 to 10 years)
- Long-term (more than 10 years)

Responsible party identifies who may act on this recommendation with **the lead party in bold**.

Quick-Build Implementation

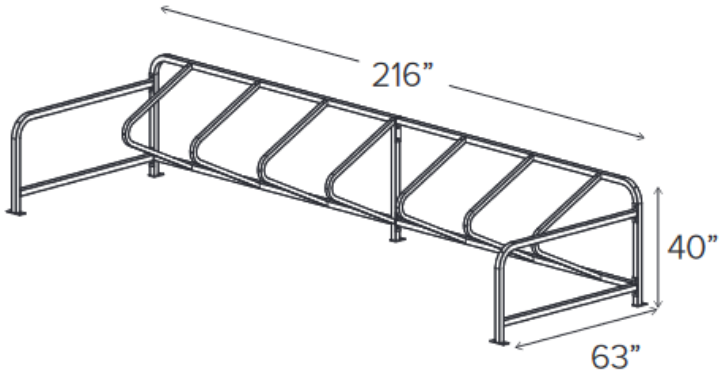
Quick-build recommendations put bicycle, pedestrian or traffic safety improvements in place using materials that can be installed quickly. Quick-build projects are flexible and designed to be easily changed or even removed if necessary. Most quick-build projects can be constructed in mere days or weeks and can go from conception to reality within months. Quick-build projects are not pop-up or demonstration projects that are intended to be removed after a short period. Quick-build allows the community to benefit immediately from walking and bicycling safety improvements, with flexibility for public feedback to impact the design while building enthusiasm and support for more permanent infrastructure. Once a project is accepted by a community, quick-builds can last for years if maintained, or rebuilt using more durable materials.

List of Recommendations

Enforcement Improvements

Evaluation Improvements

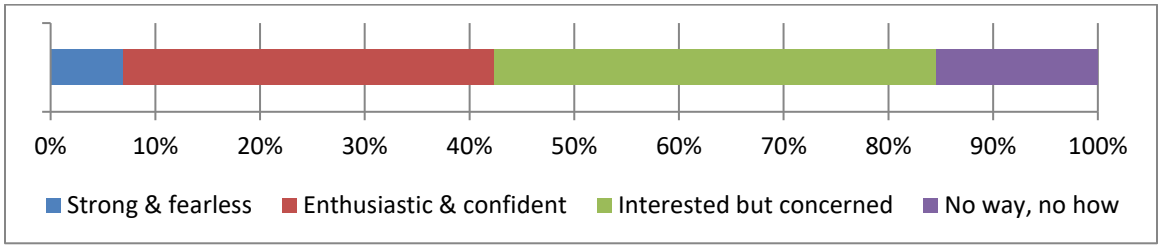
Picture sources: Google for street view, Dero for bike rack, & Dreamstime for e-bike charging icon.



Recommendations

Communitywide Bicycle Support Strategies

The city-wide online walking and biking survey that was done for this plan in June 2021 shows how the Tomahawk Area's population is generally separated into four groups of people:



Strong & fearless. (I am confident in my abilities and will ride regardless of roadway conditions, amount of traffic, or inclement weather.)

Enthusiastic & confident. (I feel comfortable sharing the road with motor vehicles, but I prefer to ride on separate facilities like bike lanes. I may or may not ride in inclement weather.)

Interested but concerned. (I like riding, but don't do it regularly. I'm generally concerned that my route is not safe to ride, so I don't ride often. I definitely do not ride when the weather is bad.)

No way, no how. (I'm not interested in biking at all, not even for recreation.)

The challenge to increasing bicycling among the general population in Tomahawk is:

A) making biking appeal to the large **"Interested but concerned"** group, and

B) supporting the large **"Enthusiastic & confident"** group.

A – "Interested but concerned" group improvements

Making biking appeal to this large group of individuals involves making all major roads bicycle friendly, which to this group means separating bikes from motorists as much as possible. Any improvements made for this group will benefit all bicyclist types.

Short to long-term Responsible party: City

Recommendation A1: Work with annual City budgets to complete the Bike Routes identified on **Maps 9A & 9B** and their related improvements to accommodate bicycling per **Map 10.**

Note: A bike route through any of these intersections would not benefit this group due to the heavy amount of semi-truck traffic and lack of separation between bike and motorist:

- Somo Avenue & 4th Street
- Wisconsin Avenue & 4th Street
- Tomahawk Avenue & CTH S

Medium-term Responsible party: City, School Dist., any group

Recommendation A2: Work with the Wisconsin Bike Fed to bring walking and bicycling education classes (e.g., Share & Be Aware) to Tomahawk. Also see recommendation titled: Bicycle Education Classes.

Short-term Responsible party: City, School Dist., any group or business

Recommendation A3: See the "Bicycle Parking" recommendation about creating places to secure a bicycle.

Short-term Responsible party: City, County, WisDOT

Recommendation A4: Continue to maintain bike route signs on roads. These signs tell motorists to expect to share the road with bikes in that area.

Bicycling is safer when done in groups. Creating a bike club with regular rides may be just the encouragement that many people need to feel more confident riding on the road.

Short to long-term Responsible party: Anyone, possible Hiawatha Trail Friends Group

Recommendation A5: Create a local bicycling club that organizes regular social bicycle riding events (possibly weekly). Consider asking Wausau Wheelers about how to get started.

B – "Enthusiastic & confident" group improvements

A general community education strategy will support this large group of individuals. This group already thinks that the right type of bicycling infrastructure exists. Some key pieces may be missing before this group rides more often. Any improvements made for this group will also benefit the smaller **Strong & fearless** group.

Short to long-term Responsible party: City, WisDOT

Recommendation B1: Work with WisDOT to restripe STH 86 per **Attachment N.**

Note: This group has no problem riding on busy streets if it provides a direct route to their destination. Since all of these roads are open to bicycling, then there should be some type of signage or markings reminding motorists that bicyclists may be in the vicinity:

- **Somo Ave (STH 86)** between 8th Street and Tomahawk Ave.
- **4th Street** between Washington Ave and Wisconsin Ave.

Short-term Responsible party: Any business, any private citizen, City, Town of Bradley, School Dist.

Recommendation B2: Promote safe driving around bicyclists by advertising: "Give Bikes 3 Feet" (**Figure 6**).

a. as yard signs during the summer.
b. possibly on restaurant and bar placemats in summer.
c. on City, School District, and Town newsletters.

Figure 6

Source: WI Bike Fed

Short-term Responsible party: Any business, any private citizen, City, Town of Bradley, School Dist.

Recommendation B3: Promote "Safety Cards" that can be modified for use in Tomahawk. These cards are available online at http://bicyclewausau.org/safety/

a. Possibly use on restaurant and bar placemats in summer.

b. Possibly use on City, School District, and Town newsletters.

Safety Cards

Note: Cards need basic revisions to apply to Tomahawk. Wisconsin Bike Fed created these cards as part of their Share & Be Aware campaign.

Complete Bike Routes in Tomahawk

Tomahawk has started creating a bike route loop around and through the City and has paved shoulders that were previously gravel. **Maps 9A & 9B** show where the existing bike routes are.

Attachment A identifies that 3-foot shoulders are statistically equivalent to no shoulders with how many bicycle crashes occur. 5-foot shoulders significantly lessened the crash rate.

The Manual for Uniform Traffic Control Devices (MUTCD) is law when determining what sign is needed along a road or on private property that is open to the public. Other guides also exist, some of which use the MUTCD. All notations in the manual are not law; *standards* are law, while *guidance* and *option* are built in flexibility. This recommendation uses that flexibility to suggest what may fit best in Tomahawk.

Short to Long-term Responsible party: City.

Recommendation A:

1. Consult **Attachment P** for signs and markings to possibly use in Tomahawk. Other guides like the NACTO Urban Bikeway Design Guide may also be used.
2. Identify on a map the final destinations so that up to 3 destination signs can be installed under a BIKE ROUTE sign (if using this layout).
3. Finish signing bike routes per **Map 9A and 9B.**

Short to Long-term Responsible party: City, County, WisDOT.

Recommendation B: Make specific improvements for walking and biking in Tomahawk per **Map 10.**

Medium-term Responsible party: City.

Recommendation C: Improve STH 86 per **Attachment N** sketches.

Improving Kid Awareness at Specific Intersections

Some intersections are difficult to see around buildings or are in areas where kids are known to dart out on their bikes. Extra driver warning may be needed where young kids are expected.

Short-term Responsible party: City.

Recommendation: Consider improving various intersections per **Attachment O**.

Highway 107 & CTH S Bike Path – Tomahawk to Merrill

The 2021 Lincoln County Outdoor Recreation Plan survey shows that about 55% of respondent's most frequent outdoor recreational activity is: **bicycling.** The 2021 survey also showed that by far the #1 and #2 opportunities that should be developed in Lincoln County are **Bike trails** and **Hiking/Walking trails**.

Tomahawk's 2019 Outdoor Recreation Plan survey shows that about 78% of respondent's most frequent outdoor recreational activity is **hiking/walking.** Adding **bike trails** was the #2 request and adding **hiking/walking trails** was the #4 request when the open ended question asked what should be developed in Tomahawk.

The June 2021 survey for the Tomahawk Bicycle & Pedestrian Plan shows that **off-street paths** was the #3 improvement chosen to help survey respondents walk or bike more often.

Full reconstruction of STH 107 is not scheduled yet, but that would be the time to install a compacted gravel off-road walking and bicycling path parallel to the highway.

Long-term Responsible party: **Tomahawk, Merrill**, **County Forestry**, **County Highway**

Recommendation 1: When WisDOT is in the initial discussion phase for upgrading STH 107, then inform them of the need for a compacted gravel off-road walking & bicycling path alongside the highway. With a compacted gravel surface, this could become a winter ATV & snowmobile trail.

Recommendation 2: While WisDOT is in the initial discussion phase for upgrading STH 107, then consider the location of a matching off-road path along CTH S. With a compacted gravel surface, this could become a winter ATV & snowmobile trail.

Note: Would chip seal over the gravel make this a durable, all-weather, multi-use vehicle surface?

Improve Louisiana Pacific Trail

The Louisiana Pacific Trail is a bike and pedestrian trail that Tomahawk maintains. The current Louisiana Pacific Trail (**Map 5**) surface is grass on railroad ballast rocks. Making this a compacted gravel surface trail would provide a great bicycling surface and maintain snowmobiling in winter. Almost no signs exist for the Louisiana Pacific Trail in Tomahawk. The City of Tomahawk has begun to install trail directional signs on Tomahawk Avenue (see **Panel 8** in **Attachment N**).

Trail directional signs (**Figure 9**) help identify the trail on roads that cross the trail.

Trailhead signs (**Figure 10**) can provide more details for riders about the trail and destinations along the way.

Short-term Responsible party: City.

Recommendation 1: Upgrade trail surface to crushed gravel.

Recommendation 2: Consider creating a new trail directional sign for the Louisiana Pacific Trail and continue installing trail directional signs (**Figure 9**) where the trail crosses a road.

Recommendation 3: Add street signs on the Louisiana Pacific Trail at road crossings, so trail users know where they are.

Recommendation 4: At major road crossings consider installing trailhead signs (**Fig. 10**).

Medium-term Responsible party: City.

Recommendation 5: Upgrade both trail crossings on STH 86. See **Attachment N**.

Hiawatha Trail

The Hiawatha Trail is a bike and pedestrian trail that Lincoln County maintains and is on the same former railroad bed as the Bearskin State Trail. The Milwaukee Road railway had the famed "Hiawatha" steam train that carried visitors along this route in the 1940s and 1950s. This former railroad right-of-way has a crushed granite surface suitable for walking, biking, and snowmobiling in winter. The decking and railings were replaced on the railroad trestle crossing Lake Mohawksin in 2018 with Snowmobile and Recreational Trails Program grant money.

Short-term Responsible party: Any private citizens, City, County Forestry

Recommendation 1: Encourage creation of a *Friends of the Hiawatha Trail* group.

The Friends group could:

a. Organize annual tree and brush maintenance activities to keep the trail clear;
b. Promote trail use through social rides; and
c. Possibly assist Tomahawk with implementing this Bike & Pedestrian Plan.

DNR has brown highway wayfinding signs for the "400" Trail on I-94 at the Lake Delton / Reedsburg exit for STH 23 (see **Figure 7**).

Short-term Responsible party: City, County Forestry

Recommendation 2: Encourage Lincoln County to pursue installation of WisDOT "Specific information signs" for the Hiawatha Trail on USH 51 at the exit for CTH A like in **Figure 7.**

Figure 7

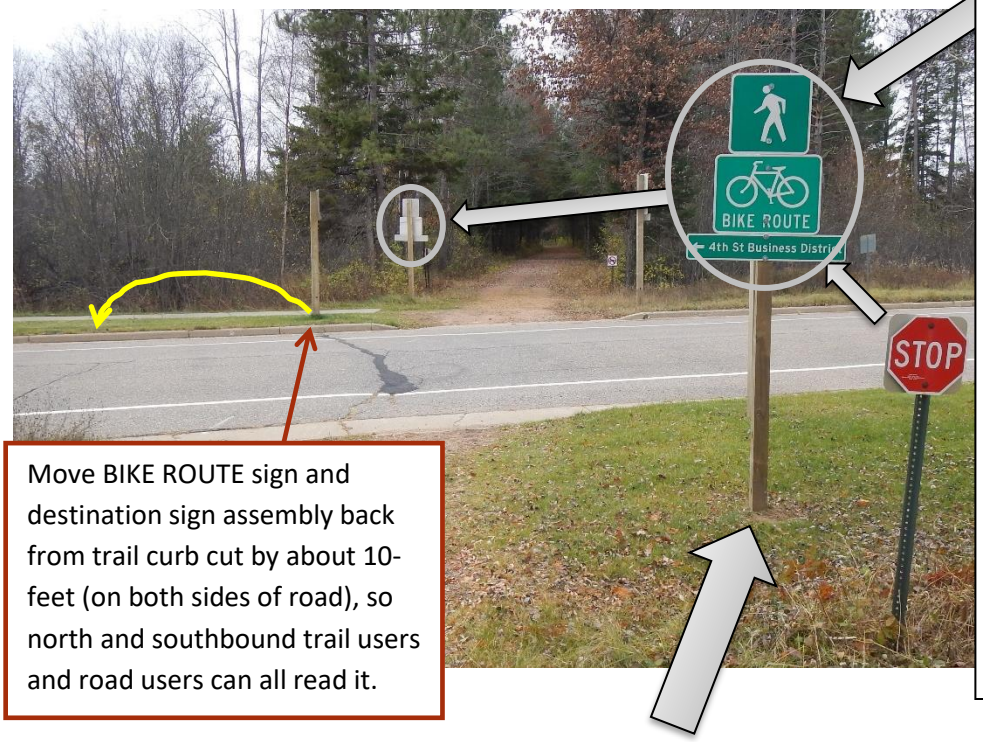
Source: Google

Recommendation 3: Install brown wayfinding signs on North 4th Street at Somo Avenue to direct people to the trailhead in SARA Park for the Hiawatha Trail. Also include "Hiawatha Trail" on SARA Park signs.

Short-term Responsible party: **City**, County Forestry

Recommendation 4: Consider revising how Hiawatha Trail crossings are signed per revisions in **Figures 8a and 8b.**

Figure 8a Hiawatha Trail crossing signage



1. Add a newly designed Hiawatha Trail sign per **Figure 9** on this post facing road. Under that new sign, place the trail sized "no ATVs" sign (at trail height on post).

2. Add double sided street sign to a metal bracket on top of this post (or similar post on other side of the road).

3. Replace these 3 signs with the trail size stop sign (or a larger stop sign).

4. Remove trail sized green metal post after signs are relocated.

Move BIKE ROUTE sign and destination sign assembly back from trail curb cut by about 10-feet (on both sides of road), so north and southbound trail users and road users can all read it.

Optional design of sign assembly

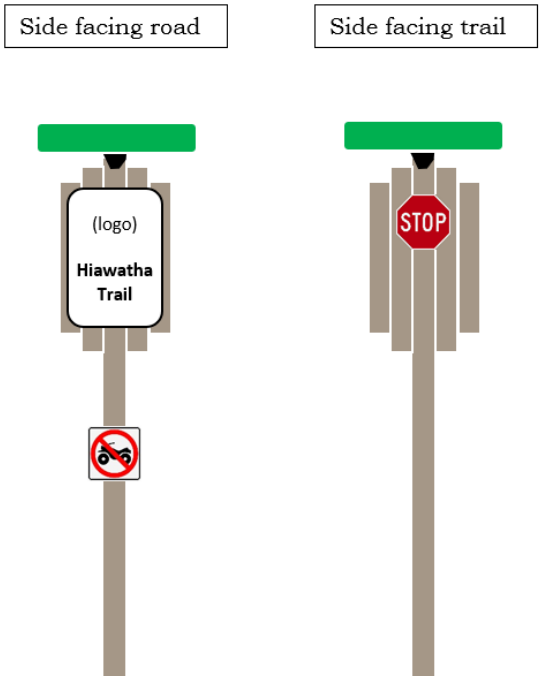
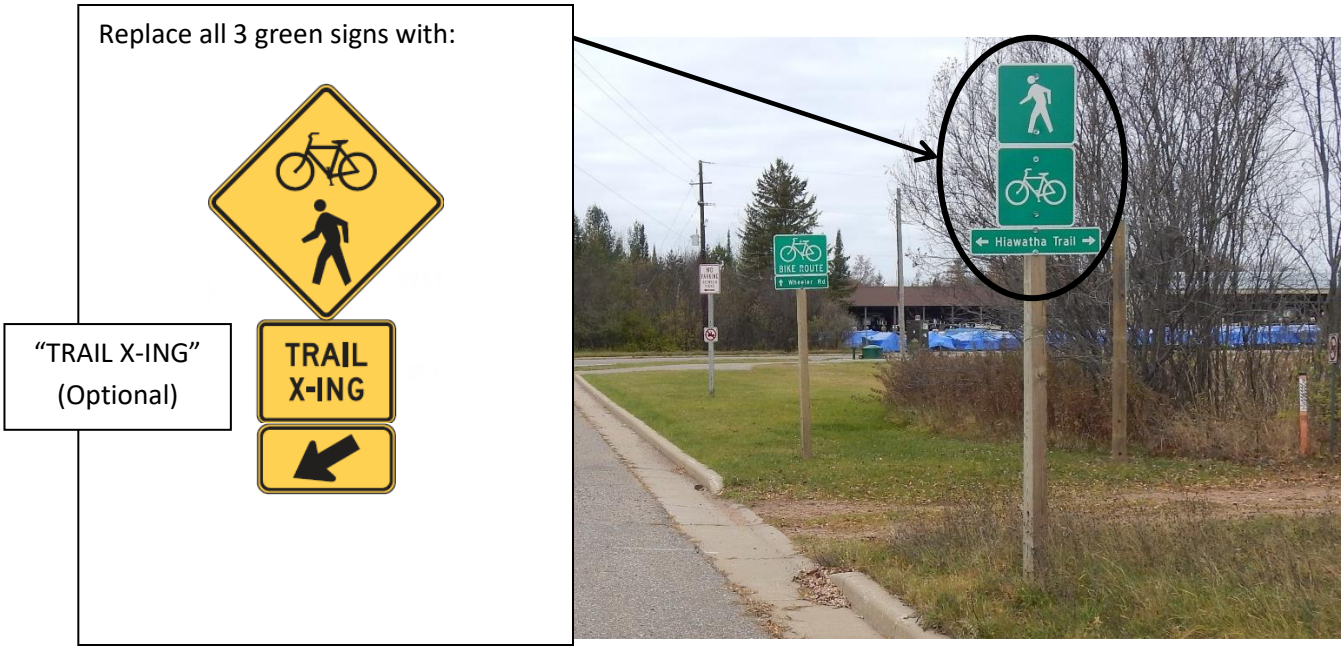


Figure 8b Hiawatha Trail crossing signage



Hiawatha Trail Signage

The Hiawatha Trail is a bike and pedestrian trail that Lincoln County maintains. Almost no signs exist for the Hiawatha Trail in Tomahawk. The City of Tomahawk has begun to install trail directional signs on cross streets (**Figures 8a-b**).

Trail directional signs (**Figure 9**) help identify the trail on roads that cross the trail.

Trailhead signs (**Figure 10**) can provide more details for riders about the trail and destinations along the way.

Short-term Responsible party: **City**, County Forestry

Recommendation 1: Encourage Lincoln County to install trailhead signage or ask permission to do so in Tomahawk.

Recommendation 2: Consider creating a new trail directional sign for the Hiawatha Trail and continue installing trail directional signs (**Figure 9**) where the trail crosses a road.

Recommendation 3: Continue adding street signs on the Hiawatha Trail at road crossings, so trail users know where they are.

Recommendation 4: At major road crossings consider installing larger trailhead signs (**Fig. 10**).

Figure 9 Trail Directional Sign

Existing
Hiawatha Trail Sign

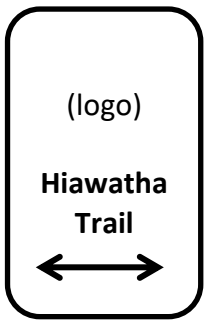
Example
Oak Leaf Trail Sign

Source: Milwaukee County Parks

Example
Green Circle Trail Sign

Source: NCWRPC

Potential
Hiawatha Trail Sign



Potential
Louisiana Pacific Trail Sign

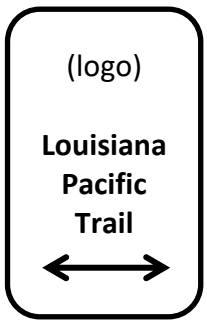


Figure 10 Trailhead Sign Examples

Ozaukee Interurban Trail
Mequon, WI

Source: NCWRPC

Falcon Ridge Trail
Greenfield, WI

Source: Google

Oak Leaf Trail
Milwaukee, WI

Source: Google

Green Circle Trail
Plover River Trail Segment
Plover, WI

Source: UWSP Cedar Signs

Green Circle Trail
Stevens Point, WI

Source: UWSP Cedar Signs

Memorial Park

This 4 acre park is along the south shore of the Wisconsin River, just east of North 4th Street. Memorial Park is one of two trailheads for the pedestrian & bike path that goes under North 4th Street to the Tomahawk Library. This park has a fishing pier, informal play area, picnic area, restrooms (ADA accessible), playground, shelter (ADA accessible), and volleyball courts. Also at the park is a memorial to America's war veterans. No paths exist within the park. An assisted living facility exists on the east side of Memorial Park.

Medium-term Responsible party: City.

Recommendation: Create sidewalks and paths in Memorial Park per the **Attachment L** map to provide wheelchair access to and within Memorial Park.

SARA Park

Several Recommendations in this Plan relate to SARA Park.
See **Attachment H** for a map of all suggested improvements from the following recommendations:

- "Hiawatha Trail Signage" -- Recommendation 3
- "Bicycle Repair Station" -- Recommendation 1
- "Bicycle Friendly Lodging" -- Recommendations 2 & 3

Kwahamot Water Ski Park

This 2 acre park is along the north shore of the Wisconsin River, just east of North 4th Street. There are restrooms, bleachers for viewing the ski shows, concession stand, swimming beach, and a boat launch. The Tomahawk Kwahamot Water Ski Club performs free water ski shows every Tuesday, Thursday, and Saturday at 7:30 p.m. from Memorial Day to Labor Day. About 375 visitors and residents watch each of these shows. The site is not wheelchair accessible.

Medium-term Responsible party: City

Recommendation: Provide wheelchair access to and within Kwahamot Water Ski Park per **Attachment J** improvements.

Pride Park

In the Tomahawk Comprehensive Plan is a map showing that a future loop path is planned for Pride Park. The path would increase the park's wheelchair accessibility.

Medium-term Responsible party: City

Recommendation: Create sidewalks and paths in Pride Park per the **Attachment K** map.

Safe Routes to School

Safe Routes to School (SRTS) programs are an opportunity to make walking and bicycling to school safer for children in grades K-8, and to increase the number of families who encourage their children to walk and bike.

The North Central Wisconsin Regional Planning Commission (NCWRPC) is a local resource to contact about beginning such a process. For more information go online here: https://www.ncwrpc.org/srts/

Medium-term Responsible party: City, School District, NCWRPC

Recommendation: Communities with schools serving K-8 grades may contact NCWRPC to apply for SRTS assistance to improve walking and biking conditions around each elementary school (grades K-8).

Walk & Bike to School Day events celebrate the joy and independence of walking, biking & rolling to school. Creation of these events shows the whole community what is possible when more kids walk or bike to school. Online resources exist here: https://www.walkbiketoschool.org/

Short-term Responsible party: **School District**, NCWRPC

Recommendation: Consider establishing an annual *Walk to School* or *Bike to School* event.

Middle School Bicycle Mechanics Program

Kids learn through action. There are a few middle schools in Wisconsin that have created a young bike mechanic program within their buildings to create a larger bicycling culture in their community. Each program has started out small, and gradually increased over time.

Two examples include:

- **Omro WI Middle School's Bike Fleet:** The school developed a cycling program using a fleet of more than 35 donated bicycles that are available to students during physical education classes, lunch, and special events/trips. These bicycles are maintained by the school's "Young Mechanics," who are trained high school and middle school students working in a fully equipped bike shop on campus. Students also work on other bikes from the community and can earn-a-buck to pay for parts for their own bikes. See **Attachment I** for more details.
- **Reedsburg WI: Pineview Elementary Bike Recycling Effort:** With the help of volunteers, fourth and fifth graders fix bikes to donate to impoverished nations. Student participants also have the chance to repair a bike of their own to take home. Unwanted bikes are collected from donations, junk piles, anywhere with cycles and parts to spare. Parts can be used from other bikes. The goal is to give kids valuable technical skills while helping countries where many people are too poor to buy automobiles.

Short to long-term Responsible party: Any private citizens, any school, any group

Recommendation: Consider replicating one of the above programs:

1. Start by finding a person to champion the idea;
2. Then find an un-used space possibly in a school building;
3. Encourage the community to donate bike repair equipment, parts, and used bicycles (per your specific request sheet); and
4. Staff the bike shop with a combination of school employees, volunteer adults, and kids (you pick the age) to start working on bikes.

Bicycle Education Classes

For many people (e.g., cyclists, motorists, semi-truck drivers), sharing the road can be very intimidating. Bicyclists fear that a faster and larger motor vehicle may not notice that they are present. Motorists are used to using the full width of the road regardless of how wide it is and may not be used to sharing the road with slower users (bicyclists). Semi-truck drivers need more lane width to operate and have extensive blind spots that a bicyclist may not be aware of. Each of the three users have a legal right to operate on the roads within Wisconsin (except freeways).

Many children are taught by their parents to ride on the sidewalk. Their parents believe that the sidewalk is the safest place to ride, since it appears to be protected from vehicular traffic. When the young cyclists grow up and begin to drive cars of their own, they continue to hold on to the idea that bicycles belong on the sidewalk, so the pattern continues.

In order to effectively re-educate the community regarding safe and confident cycling, the education program must target all age groups and the community at large.

This bicycle education program will utilize a multi-faceted approach intended to reach as much of the community as possible by any means feasible.

Education through Engineering

Lane widths, pavement markings, and signs provide a tremendous opportunity to teach the community about the safe and shared usage of the roadway. This education not only benefits local residents, but also the surrounding community and tourists who come and visit.

- The Hiawatha Trail Signage recommendation provides consistent signage guidance that will help motorists be cautious near crossings.
- The Downtown Crosswalk Improvements recommendation gives constant reminders about where a pedestrian is to be expected and to not crowd them.
- The Citywide Crosswalk Improvements recommendation also provides for overall citywide reminders to motorists about how to behave near walkers.
- Maintaining lane markings and signs throughout the City reinforce that those existing facilities still require a motorist's attention.
- Consider adding portable speed feedback signs under speed limit signs in problem areas. Only keep them at a location for up to 2-weeks at a time to keep them fresh. Program the speed feedback sign to only flash when the speed is 5+ miles per hour over the speed limit, so people will pay attention to the flashing number.

Education through Bike Safety Classes

There are a variety of educational programs for youth, adults, driver's education, and corporate drivers.

- The Middle School Bicycle Mechanics Program recommendation can create a larger bicycling culture in the community.
- The Safe Routes to School Bike To School event's recommendation can show a community what is possible before expensive infrastructure is built, or can show how easy it is to walk or bike to school right now.
- **Table 1** identifies various ways to provide bike education to new drivers, walkers, and the general public.
- See the **Communitywide Bicycle Support Strategies** recommendation for various citywide educational efforts.

Short-term Responsible party: See Table 8.

Recommendation 1: Consider updating existing bicycle safety training for children by replacing the bike rodeo with a bike camp, Share & Be Aware classes, or Safety City.

Short-term Responsible party: See Table 8.

Recommendation 2: Consider providing additional or updated walking and biking classes in Tomahawk. See **Table 1** for examples.

Short-term Responsible party: **City**, local news media.

Recommendation 3: When new street markings are added, consider various ways to inform the public about how to navigate around these new markings. See **Attachment P** examples.

Table 1: Walk and Bike Classes

Share & Be Aware Class (WI Bike Fed)	(Optional) Responsible Parties
Skills for Pedestrians. This class can be tailored for a senior citizen audience as they are at a higher crash risk, but is appropriate for all adults.	Nursing homes, Assisted living homes, WI Bike Fed.
Driver's Ed & Bicycle Friendly Driver These courses can be tailored for new, veteran, or professional drivers and highlights the responsibilities of people driving to keep people walking and biking safe.	Driver's Ed Course providers, WI Bike Fed.
Improving Safety for All Road Users This course tells law enforcement officers about laws to help keep people biking and walking safe so they can help create a better community. Recent law changes, targeted enforcement strategies, and additional resources are all covered.	Police, WI Bike Fed., WisDOT Bureau of Transportation Safety & Technical Services
Safety City Class	(Optional) Responsible Parties
A sampling of safety issues covered in Safety City classes are: • **Traffic Safety:** Traffic lights, stop signs, pedestrian rules, cross walks, safety patrols • **Stranger Safety:** Various situations involving strangers and what to do • **Poison Safety:** Learn about dangers of poison and medicines • **Water Safety:** Discuss safety around water • **Fire Safety:** Meet a firefighter, learn about fire safety in your home • **School Bus Safety:** Learn about bus safety, and how to follow driver's rules • **Bicycle Safety:** We will be riding bikes and learning all about helmets	School District, Police, WisDOT Bureau of Transportation Safety & Technical Services

Bicycle Friendly Lodging

A hotel, motel, or campground* is considered bike friendly if at a minimum they provide secure overnight bike parking—either by allowing the bike in the room, an indoor bike valet, or an outdoor bike locker. If chambers of commerce or bike groups create a bike friendly designation, then amenities beyond secure bike parking may be required. An indoor bike valet could be a room off the lobby just accessible by staff (like a coat check) or access to a locked garage or shed, with in-garage/shed secure locking ability to a fixed object is also secure overnight parking.

Common bike friendly amenities include:

- Secure overnight bike parking (see above paragraph);
- (Optional) Having a tire pump and tool kit available;
- (Optional) Have trail maps available;
- (Optional) Provide bike washing station (optional unless muddy bikes are expected);
- (Optional) Have a partnership with a local bike shop or bike mechanic that can come on-site to fix a bike (for a fee to the client).

Note: A **bicycle wash** should just use standard municipal water pressure when designating an area to wash mud off of bikes. High pressured wash stations could cause damage by forcing abrasives into bike bearings.

Note: Bicycle rental – If an establishment wants to provide an extra service, then it could either provide complimentary bikes for guests (with locks and helmets), or could rent bikes (with locks and helmets) for guests.

If an establishment wants to provide either of these types of services, then an agreement could be made with a bike shop to provide bikes (with locks and helmets) and on-going maintenance.

*__For campgrounds__ to become bicycle friendly, the most important thing they could do is to establish a no-turn-away policy. See **Attachment G** for additional information about best practices for bicycle camping.

Short to long-term Responsible party: **City**, **Chamber of Commerce**

Recommendation 1: Encourage properties that want to become bike friendly to look at the above descriptions.

Short-term Responsible party: City

Recommendation 2: Tomahawk to establish a no-turn-away policy for hiking/bicycling camping at SARA Park, and to post this policy under Rules & Regulations on the SARA Park Camping website and on a sign within the SARA Park campground. See **Attachment G** for no-turn-away policy guidance.

Short-term Responsible party: City

Recommendation 3: Tomahawk to consider establishing a non-reservable hiking/bicycling camping area within SARA Park that is available only to those traveling solely by hiking or bicycling. See **Attachment G** for best practices for bicycle camping and see **Figure 1 in Attachment G** for a sample facility layout in SARA Park.

Cycling Without Age

Cycling Without Age brings the amazing feeling of riding a bicycle to those who are not able to pedal on their own. A local chapter can be created at a nursing home, senior apartment building, or whole communities. Volunteers (pilots) sign up for bike rides with the elderly as often or as rarely as they want to.

Wisconsin Bike Fed staff are experienced in working with communities, nursing homes, and assisted living facilities to get Cycling Without Age programs started. Once the Bike Fed helps with the purchase of the special trishaw, train the pilots, and organize the program, a local chapter can take over from there.

Short-term Responsible party: **Anyone in Tomahawk**, nursing home, assisted living facility, WI Bike Fed

Recommendation: Consider establishing a local Cycling Without Age chapter in Tomahawk.

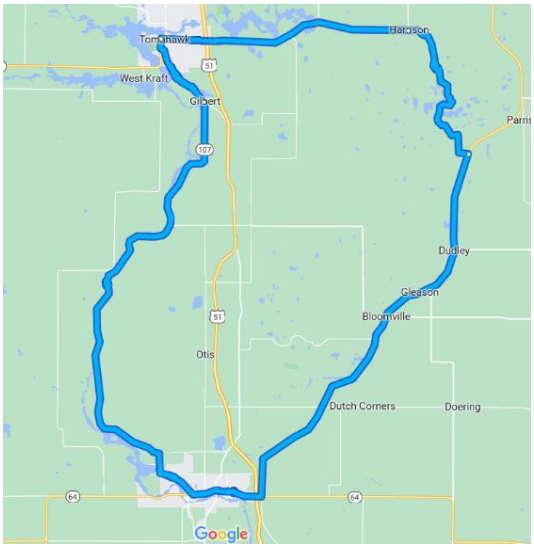
Scenic Byway Designation

The Scenic Byways program is a cooperative effort between local communities and WisDOT to identify and promote state and local highway corridors with scenic and/or historical attributes that provide travelers an enjoyable visual, educational, and recreational experience.

A scenic byway is a non-interstate highway route, at least 30 miles long, that offers travelers numerous scenic and/or historical attributes whose promotion can serve to boost a region's attractiveness as a tourist destination.

Short-term Responsible party: Cities (Tomahawk & Merrill), County Highway, WisDOT, Chambers of Commerce.

Figure 11 **Scenic Bike and Auto Tour**



Recommendation: Consider establishing the "Scenic Bike and Auto Tour" (**Figure 11**) as a scenic byway either through official WisDOT designation, or by simply posting Lincoln County created scenic signage that identifies the route.

NOTE: If this is signed a "bike" route, then some segments of county and state highways may need up to 5-foot paved shoulders before signing the route. Wherever the Wisconsin Bicycle Map for Lincoln County shows a road as having "undesirable" conditions for bicycling, then up to 5-foot wide paved shoulders may be needed. An alternative to paving most shoulders would be to direct bicyclists north from CTH D towards Tomahawk onto CTH H to CTH A toward Tomahawk, and then directing bicyclists onto Cash Road to Mohawk Drive in Tomahawk.

Bicycle Friendly Community Designation

Nationally, the League of American Bicyclists created a standard for assisting and recognizing how friendly states, communities, businesses, and universities are toward bicycling. Any community that undertakes the application process of becoming a Bicycle Friendly Community will get customized feedback on their application and access to technical assistance for improving.

A Bicycle Friendly Community welcomes bicyclists by providing safe facilities for bicycling and encouraging people to bike for transportation and recreation. Making bicycling safe and convenient are keys to improving public health, reducing traffic congestion, improving air quality and improving quality of life.

Since its inception, more than 800 communities have applied and the five levels of the award (i.e., diamond, platinum, gold, silver, and bronze) provide a clear incentive for communities to continuously improve.

Short-term Responsible party: Hiawatha Trail Friends group, City, anyone.

Recommendation: Consider applying to become a Bicycle Friendly Community.

Bicycle Repair Station

Public bicycle repair stations provide an area for cyclists to re-inflate tires, tune bikes, and make repairs while away from home. Installing these stations along popular routes bolsters support of cycling as a mode of transport or recreational activity. Cyclists can be confident that if they have a minor problem on the road, that facilities are nearby for the necessary repairs.

Short-term Responsible party: City, local business/non-profit

Recommendation 1: Consider locating a bicycle repair station with air pump at a park that has the potential for high visibility to bike users. A local business or non-profit could financially sponsor such installations and their logo could go on the station.

1a. Washington Park is a good choice because North 4th St has bike lanes; and install bike repair signs & arrow signs on North 4th Street to direct riders to the location of the repair station (see **Attachment E)**.

1b. SARA Park is a good choice because it is the trailhead location for the Hiawatha Trail (see **Attachment H**).

Short to long-term Responsible party: Anyone

Recommendation 2: Consider where additional bicycle repair stations with air pumps could be located as the need arises. A bicycle repair station could be at a gas station, apartment building, city hall, park, bicycle trailhead, school, or a business.

Recharging Ebikes On-The-Go

Most people just need a standard wall outlet to plug in their battery charger. Charging the battery when there is between 30% and 60% of the capacity remaining is recommended by many manufacturers of ebike lithium batteries. Sometimes an ebike charger is integrated into the bike, so it is best to locate a few exterior and interior outlets in a community.

During battery charging, the battery should be in an area above freezing but less than 110 degrees Fahrenheit. The best charging temperature is between 60 and 70 degrees Fahrenheit.

There are no industry standards as to how much power a battery charger will need. Usually, a standard ebike battery charger uses 3 amps, while a fast charger uses 6 amps of a standard 15 Amp 120 Volt outlet.

Top spots for a traveler to plug in **with permission** are:

- Bike shops
- Restaurants
- Coffee Shops
- Campgrounds
- Hotel rooms
- Libraries
- Picnic pavilions in parks
- Public Works Buildings
- City Halls

Choosing Public Locations to Plug In

- Identify an outlet that could provide secure charging so that the battery and charger don't walk off.
  - Exterior outlets for chargers built into bikes – provide a bike rack near outlet.
  - Interior outlets – multiple options could exist depending upon if the person is staying with their charger and battery or leaving to visit local businesses. An outlet behind a service counter would be secure at a city hall or library.
- Consider registering an indoor or outdoor outlet on a vehicle charging website (e.g., plugshare.com) so that people can find where allowable public outlets for charging their battery exist.

Figure 12 Possible Ebike Bike Rack Location

Source: NCWRPC

Outdoor outlet to consider registering as a potential ebike recharge outlet.

Replace rocks with brick pavers and install a bike rack (**Attachment D**). Do not mount a bike rack to brick pavers since they are not secure. Either install a freestanding bike rack that can hold at least 3 bikes or mount a rack into or on poured concrete 12-inch diameter by 2-feet deep. Install bike rack so locked bikes do not hang over either sidewalk.

Short-term Responsible party: City

Recommendation: City to consider installing an ebike bike rack in front of City Hall (**possibly Figure 12**) and then registering the site near the outlet on a website per above. Additional bike parking may be added in other locations near City Hall too.

Bicycle Parking

For bikes to be used more often for transportation, everyday destinations like work, school, stores, offices, government buildings, and restaurants must have places to park a bicycle securely.

Installing bike racks in each park, especially near spectator sports, would provide secure parking for residents and visitors.

Installing bike racks by each employer, or conveniently located in a commercial district, would provide secure parking for residents and visitors alike.

Employers that want to provide secure long term bike parking for their employees may choose to use a closet or create a covered, fenced in bicycle parking area conveniently located on their property for employees to store their bikes.

Some considerations for employers providing secure employee bike parking:

- Will the bicycle be secure in the storage area? Does the space allow every bike to be locked?
- Will the bicycle be protected from inclement weather?
- Will anyone with a bicycle in the storage area be able to get their bike out without tipping over the remaining bicycles in the area?
- Is an employee using a bicycle that is different from a 2-wheel bike that is about 70-inches long? If so, then make sure there is enough space to park that bike and others like it.
- Is there a shower facility available for bicyclists to clean up in? A shower is not required, but some riders may need it to maintain their professional appearance to customers.
- Does an employee have another need for bike parking? Ask, and work with your facility manager about how to accommodate it.

A summary of bicycle parking recommendations from the Association of Pedestrian and Bicycle Professionals (APBP) is included in **Attachment D**. The amount of space needed for a bike rack, and how to determine good bike rack designs are included in those guidelines.

Short-term Responsible party: Any entity that installs a bike rack

Recommendation 1: Use the *Bike Parking Guidelines* in **Attachment D** when purchasing a bike rack, so that it allows a bicyclist to use a U-lock to secure their front tire and bike frame to a rack and keeps the bike upright by two points of contact while locked.

Short-term Responsible party: Any entity that installs a bike rack

Recommendation 2: Provide the bicycle parking guidance on this page to all employers that want to become more bicycle friendly. Encourage employers to explore the Bicycle Friendly Business program requirements from the League of American Bicyclists to determine how to provide good employee bike parking and bike support.

Short-term Responsible party: City

Recommendation 3: Consider installing bicycle parking (**Attachment D**) at every city building and every park, especially near spectator sports areas (see **Attachments H & K**).

Short-term Responsible party: City, local businesses

Recommendation 4: In business districts where visitor parking is provided on-street, work with the local businesses to identify space for bike racks within the road & sidewalk right-of-way (see **Attachment D**).

Short-term Responsible party: City, local businesses, Crime Stoppers

Recommendation 5: Replace all downtown bike racks with new ones per **Attachment D** that allow a bicycle frame to be supported by two points and allow a front wheel and frame to be locked using a U-lock.

Light for Walking

Daylight Saving Time (DST) continues to be championed by various groups as a way to increase the amount of daylight available after work to shop and recreate. In 2005, Congress extended DST by a week in the fall. In Tomahawk and other northern latitude communities this means that those who walk or bike to work or school in the morning do so in the dark for about a week before the time change provides the extra hour of morning light. Even after 5:00 p.m. when it is dark, people walk to parks, walk the dog, and various other destinations.

Many neighborhoods in Tomahawk have utility pole streetlights on the corners. Many of these high pressure sodium vapor streetlights are dim as compared to their LED counterparts.

In 2020 the Federal Highway Administration created: Research Report: Street Lighting for Pedestrian Safety (FHWA-SA-20-062). From that report, the recommended lighting levels are a minimum 2 lux vertical illuminance in areas where pedestrian volumes are low (0-100 pedestrians per hour). Higher pedestrian areas (>100 pedestrians per hour) are recommended to be 10 lux semi-cylindrical. The luminance recommendations for low volume pedestrian zones is 1 cd/m2 in urban areas. For high volume urban areas, 2 cd/m2 is recommended and rural areas are recommended to maintain 1 cd/m2. The color temperature of the light source should be 3000 or 4000 K (see last sentence about "environmental sensitivity"). Pedestrian crosswalks should have a minimum of 20 lux vertical as current guidelines suggest. For pedestrian scale lighting (6.5m in height or lower) an additional 2 lux vertical and 0.5 cd/m2 are required to be added to the criteria to overcome the glare from the lower mounting height. Along with these design recommendations, other roadway lighting criteria must also be met, such as consideration of glare, surround ratio, light trespass, and environmental concerns (3000 K is the minimum for pedestrian visibility, and the maximum in "areas of environmental sensitivity," or prevent light trespass from light fixture in such "areas").

See **Attachment F** for a Federal Highway Administration fact sheet on lighting as a safety countermeasure.

Short-term Responsible party: **City**, WPS

Recommendation 1: Encourage Wisconsin Public Service (WPS) to speed up conversion of their sodium vapor streetlights to LED streetlights. City may want to provide a list of high priority intersections to WPS.

Short-term Responsible party: City

Recommendation 2: City to upgrade lighting in front of City Hall to accommodate night meetings.

Sidewalk Improvement Program (SIP)

A Sidewalk Improvement Program aims at providing safe sidewalks for all residents by eliminating tripping hazards and providing ADA accessible ramps. Many sidewalks adjacent to downtown Tomahawk are missing sidewalk ramps. Federal law requires ADA compliant curb ramps with any paving project along a street (outside of routine maintenance like pothole repairs and joint filling/sealing) regardless of funding source. Establishing a sidewalk improvement program would prioritize what sidewalks and sidewalk ramps need improvement in a given year.

Example of how the program could work:

1. City staff begin in downtown and choose which neighborhoods to identify for inspection and repair.
2. Properties included in that year's SIP receive a letter notification that inspections will be occurring soon.
3. City staff inspects sidewalks in identified neighborhoods. When a hazard is identified, staff will mark the area with paint.
4. City coordinates sidewalk maintenance and bills the adjacent property owner unless the City chooses to pay for a particular type of repair.

Short-term Responsible party: City

Recommendation 1: Consider establishing a Sidewalk Improvement Program in Tomahawk to fix sidewalks, complete sidewalk installation on incomplete sidewalk blocks, and add sidewalk ramps.

Short-term Responsible party: City

Recommendation 2: If a formal CIP is not established, then implement a short term plan to install sidewalk ramps throughout the City.

Construct Sidewalks

Carefully designed pedestrian facilities improve safety for walkers. Creating good walking areas provides all people with greater mobility and the freedom to have safe transportation choices. Sidewalks provide a safe separation from faster moving motorists.

Short-term Responsible party: City

Recommendation: Consider revising the Tomahawk Code of Ordinances to require sidewalks per **Table 2** with the following considerations.

Considerations:

1. Sidewalks may be omitted from a side of the street where there are not any anticipated pedestrian trip generators (e.g., a river runs along the road, a freeway exists on that side of a road, etc.).
2. Sidewalks may be omitted from the side of the street where a bicycle path exists or is planned on the same side of the street.
3. Within areas around a school, consider requiring a sidewalk or path along at least one side of specific road segments where kids collect from adjacent side streets.

Table 2: Recommended Guidelines for Sidewalk Placement	
Land-use/Dwelling Unit (Road's Functional Classification)	**New or Existing Urban and Suburban Roads**
Commercial	Prefer both sides; at least one side. Both sides in downtown.
Industrial Park	If continuous parking lanes exist without turn lanes at intersections, then no sidewalks needed. Sidewalk segments or painted urban shoulders should be installed where adults would not feel comfortable walking (e.g., no parking lanes, across railroad tracks, parking lanes that are frequently used for motor vehicle parking, etc.)
Residential* (Principal or Minor Arterials)	Both sides.
Residential* (Minor or Major Collectors Or roads that act** as Collectors)	Prefer both sides; at least one side, or 6-foot shoulders (includes gutter pan if curb & gutter exist) both sides if 35-mph or slower road, or 8-foot shoulders both sides if 40-mph or faster road.
Residential* – More than 4 units/acre (Local Road)	Prefer both sides; at least one side.
Residential* – 1 to 4 units/acre (Local Road)	Prefer at least one side; at least two 12-foot wide lanes.
Residential* – Less than 1 unit/acre (Local Road)	At least two 12-foot wide lanes.

Source: NCWRPC (original from SEWRPC)

Notes for additional consideration:

1. This table is to assist Tomahawk with a prudent way of providing safe walking areas for the most vulnerable users—elderly, disabled, and children. Additional sidewalks may be self-required by Tomahawk as they see fit.
2. Every effort should be made to add sidewalks where they do not exist and to complete missing links per the above table.
3. *Residential – as identified on Tomahawk's future land use map in their Comprehensive Plan.
4. **If several streets empty onto "road A" that is not functionally classified as a collector, then for the purpose of this table "road A" acts like a collector.

Downtown Sidewalks Snow Removal

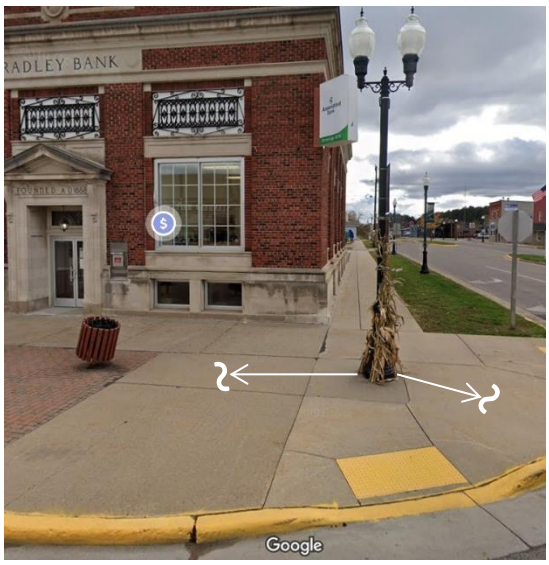
Businesses and their customers always want sidewalks clear of ice and snow in winter. Snow events happen at all times of the day. Clearing snow while the business is open can be a struggle for many small businesses with limited staff. A more efficient way to keep the sidewalks clear is to cooperate with each other to have a company take care of the task for everyone. This is what the downtown Wausau Business Improvement District (BID) does with great success.

Short-term Responsible party: **City**, **Tomahawk BID**

Recommendation: Encourage Tomahawk's Business Improvement District (BID) to coordinate snow removal from downtown sidewalks.

Downtown Sidewalks Light Post

On the southeast corner of Wisconsin Ave and Tomahawk Ave there is a light post in the middle of the sidewalk. This is an unnecessary barrier to handicapped and blind people. Sure, there is enough room to navigate around it, but it is best to minimize obvious barriers.



Short-term Responsible party: City

Recommendation: Move light post out of the direct line of sidewalk per one of two directions shown in picture.

Downtown Crosswalk Improvements

Downtown Tomahawk = Wisconsin Ave from Railway St to 4th St.

Downtown has a high demand for walking as identified in the Travel Demand analysis. In general, the downtown has continuous sidewalks in good condition, marked crosswalks, and good lighting. Out of the 6 bicycle and pedestrian crashes in Tomahawk from 2015 to 2020, 2 were in downtown Tomahawk (see **Map 4**).

High-visibility crosswalk lines are time intensive to maintain on a regular basis. In downtown, traffic wear and snowplows have removed over half of the crosswalk lines.

Short-term Responsible party: City

Recommendation 1: Improve durability of painted crosswalks in downtown. Installing recessed pavement markings by grinding the specific area where lines are painted protects against snowplow damage, which extends the life of crosswalk lines.

Motorists are sometimes crowding pedestrians by stopping too close to a crosswalk (or rolling through stop signs). Stop lines in downtown are painted too close to crosswalks to be effective at reminding motorists to stop before their vehicle enters a crosswalk.

Short-term Responsible party: City

Recommendation 2: Paint stop lines at least 9-feet away from the nearest crosswalk line, and when possible, move stop signs back 9-feet to match the stop lines.

Short-term Responsible party: City

Recommendation 3: Continue painting high visibility crosswalks ("zebra" per **Figure 13**) throughout downtown, including painting crosswalks on the road around each corner per **Figure 14.**

Traffic on Wisconsin Avenue from Tomahawk Avenue to 4th Street is not required to stop at intersections. Existing in-street pedestrian crossing signs (MUTCD R1-6) on the yellow center lines are working at reminding motorists to stop for pedestrians crossing in the crosswalks.

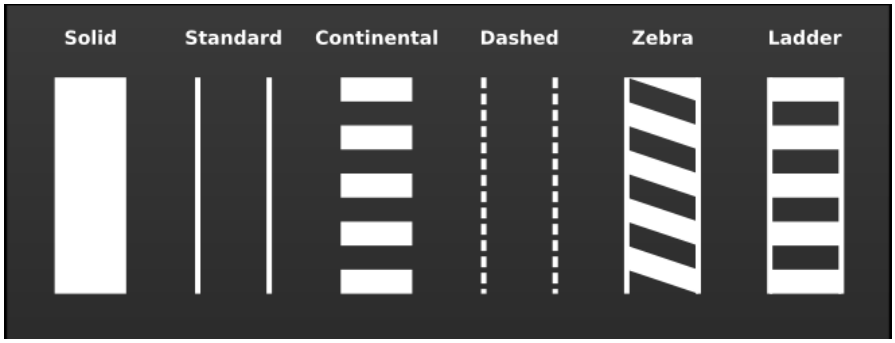
Short-term Responsible party: City

Recommendation 4: Since the crosswalks on Wisconsin Ave are unusually long at over 50-feet from curb ramp to curb ramp for a two-lane road, then:

a) continue to keep in-street pedestrian crossing signs on the yellow center lines per **Figures 14 & 15**, and

b) consider installing concrete planters to narrow the travel lanes to 14-feet in each direction (see **Figures 14 & 15**). Adding concrete planters is less expensive than constructing curb bump outs. Stop signs on the side streets can be mounted to the inside of these concrete planters to make stop signs more visible. City may choose to remove planters in winter for snow removal, or contract with downtown business improvement district to remove snow that plow truck can no longer remove due to planter locations.

Figure 13 Crosswalk Styles



Source: FHWA

WisDOT approved High Visibility Crosswalks are: Continental, Zebra, and Ladder.

Figure 14 Sample Downtown Intersection

▲ = In-street pedestrian crossing sign

● = concrete planter (5-ft dia., 3-ft tall)

Paint continuous high-visibility crosswalks on the road around each corner like what is shown on these corners. The following downtown intersections should receive this treatment: 2nd St & Wisconsin, 3rd St & Wisconsin, and 4th St & Wisconsin.

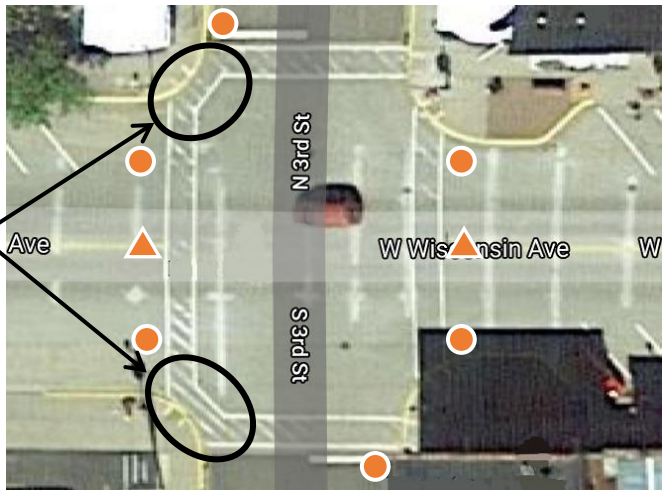


Photo source: Google

Figure 15 All Downtown Intersections

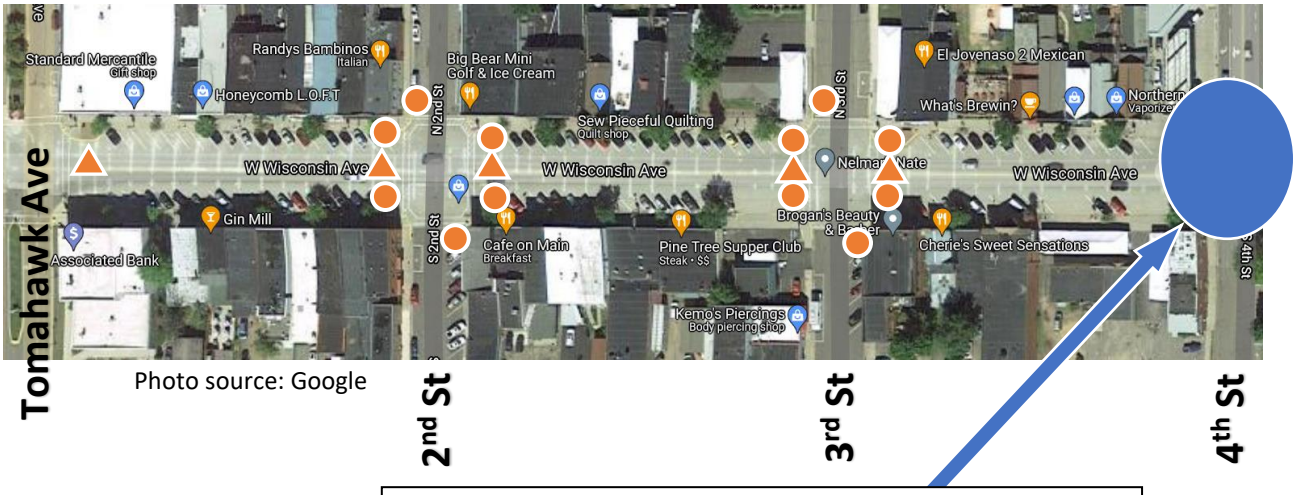


Photo source: Google

See **Figures 16, 17, & 18** for details at this intersection.

Southbound traffic on 4th Street at Wisconsin Avenue gets to make right-hand turns without stopping, and eastbound traffic on Wisconsin Avenue is allowed to make left-hand turns without stopping. Pedestrians that use this intersection have a difficult time crossing due to motorists using the wide turning radiuses to make these turns almost at full posted speed without slowing down.

Short-term Responsible party: City

Recommendation 5: Create a safer intersection for pedestrians without stopping traffic by employing proven safety countermeasures. Such countermeasures are provided in **Figures 16, 17, & 18, which could be implemented with paint and construction barrels to try it and refine it.**

Note: If all the improvements in **Figures 16, 17, & 18** are made and there is still a pedestrian safety problem, then either create a 4-way stop at 4th Street & Wisconsin Ave or hire a traffic engineer to design raised crosswalks on all 4 legs of the 4th Street & Wisconsin Ave intersection.

Figure 16 4th & Wisconsin Intersection

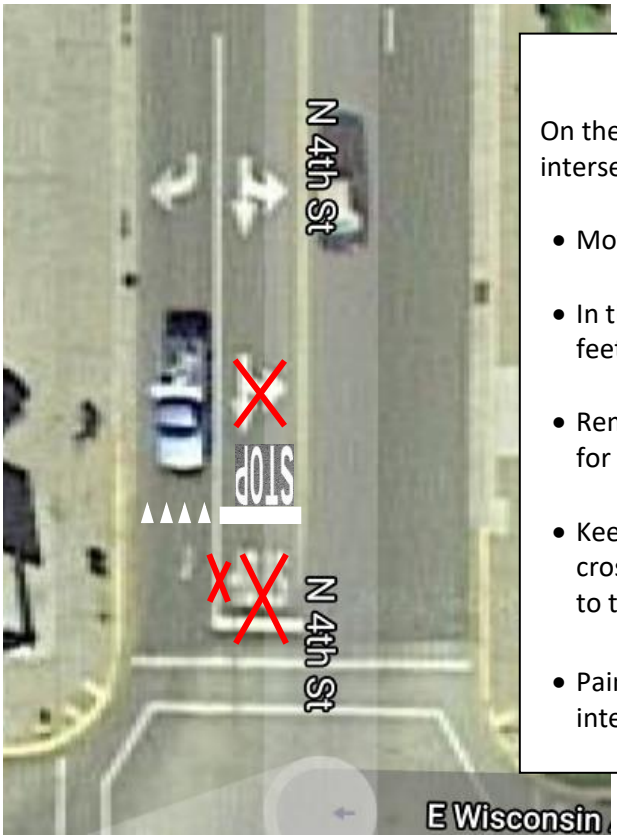


Photo source: Google

4th & Wisconsin Improvements

On the north side of the North 4th Street & Wisconsin Ave intersection…

- Move "STOP" and stop line back 20-feet from crosswalk.
- In the south-bound curb lane, paint Yield Line triangles 20-feet from crosswalk (see MUTCD Figure 3B-16).
- Remove one of the painted arrow sets to provide room for STOP and stop line.
- Keep the double yellow centerline painted to the crosswalk. Remove the white line from the new stop line to the crosswalk.
- Paint high-visibility crosswalks across each leg of this intersection and around each corner per **Figure 14**.

Figure 17 4th & Wisconsin Southbound Stop Sign

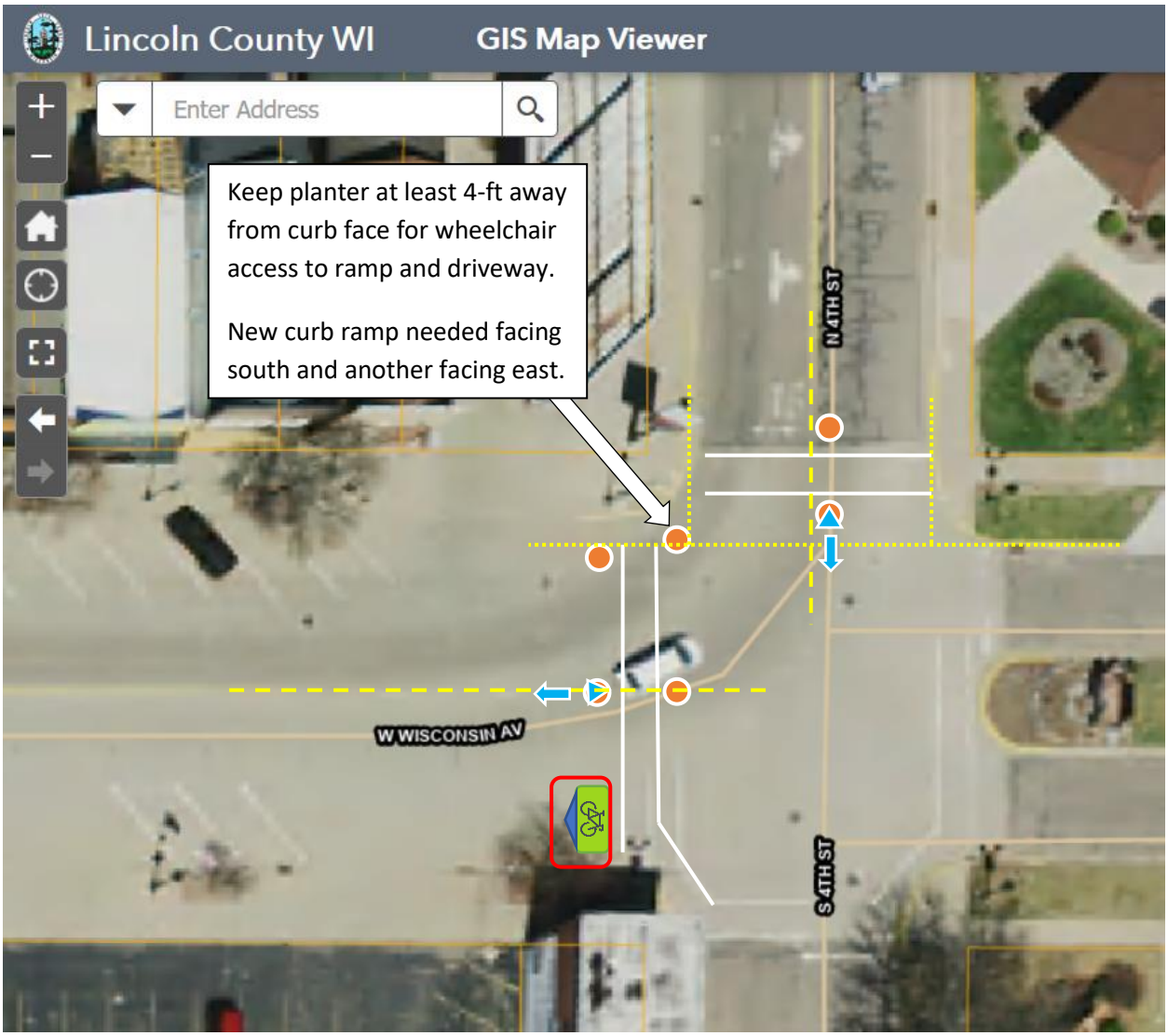
Photo source: Google and MUTCD

On the north side of the North 4th Street & Wisconsin Ave intersection…

Add: "State Law…" MUTCD's R1-6 sign to **existing** stop sign pole. Move street name signs to top of this pole too.

Add another pole to be even with new stop and yield lines per **Figure 16.** The new pole will hold the "STOP" and "Right Turn No Stop" signs.

Figure 18 4th & Wisconsin Intersection Crosswalk Improvements



= New painted crosswalk. Paint rest of crosswalk at this whole intersection as-is.

= One-sided In-street pedestrian crossing sign to be placed on concrete planter

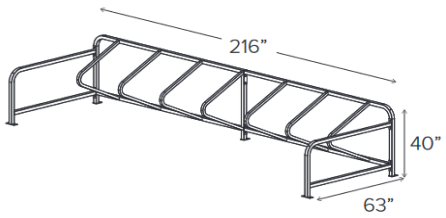
= concrete planter (5-foot diameter, 3-foot tall)

= (Yellow ***dashed*** line) Center line of street

= (Yellow ***dotted*** line) Curb line

= 3-sided bike corral rack (**Figure 19**)
Install 3-sided bike corral rack instead of concrete planters on this corner to protect pedestrians and provide bike parking.

Figure 19 3-sided Bike Corral Rack



Source: DERO

Citywide Crosswalk Improvements

Motorists have been observed sometimes crowding pedestrians by stopping too close and in crosswalks (or rolling through stop sign or right-hand turns at lights). Stop lines need to be visibly separate from the crosswalk to be effective at reminding motorists to stop before their vehicle enters a crosswalk. The federal Manual For Uniform Traffic Control Devices' (MUTCD) minimum is 4 feet.

Short-term Responsible party: City

Recommendation 1: Paint stop lines at least 9-feet away from the nearest crosswalk line, where stop lines are painted. Stop lines are not required per 2009 MUTCD.

Another way to reduce vehicle-pedestrian conflicts is to turn on the WALK signal 3 to 7 seconds before the green light at traffic signals. By giving pedestrians a head start, it is less likely that there will be conflict between pedestrians and turning vehicles. Leading Pedestrian Intervals (LPIs) increase the percentage of motorists who yield the right of way to pedestrians because pedestrians are in the crosswalk by the time the traffic signal turns green for parallel vehicle movements.

Short-term Responsible party: City

Recommendation 2:

2a. At the traffic light, program the WALK signal to appear 3 seconds before the motorists are allowed to proceed through an intersection.

2b. Also at the traffic light, remove the pedestrian actuated buttons and program the WALK signal to turn on automatically.

Travel Demand surrounding Tomahawk

Two travel demand analyses were conducted to figure out where people would want to walk or bike if it was safe to do so or after possible improvement programming. One analysis was performed within Tomahawk and the other was performed surrounding Tomahawk. The analysis within Tomahawk supports this whole bike & pedestrian plan. The analysis surrounding Tomahawk was performed to determine where connections to destinations outside of Tomahawk should occur.

Short-term Responsible party: Possibly County Highway and any surrounding municipalities

Recommendation: Review the "Analysis and Potential Recommendations" on pages 18 & 19 to determine where Tomahawk may connect to other bicycling destinations and what potential road improvements may be needed.

Roadway Design – Vision Zero Deaths

Research shows that lowering a speed limit without other improvements like road design changes or improved police enforcement does not work to slow traffic. Roadway design affects people's speeds.

See "Strategies to Improve Pedestrian and Bicycle Safety" in **Attachment B**.

Traffic measures to slow speeds, deter distracted driving, and help make walking and biking more comfortable:

- Reduce the number of travel lanes (road diets).
- Reduce the width of travel lanes.
- Make crosswalks more visible.
- Paint bike lanes or urban shoulders where roads are already wide enough.
- Shorten crosswalks.
- Add raised median islands in the middle of busy streets as a refuge for pedestrians at crosswalks.
- Reduce turning radius at intersections, without restricting truck turns.
- Install traffic circles – usually done where residential street speeds are high.

Short to Long-term Responsible party: Streets Dept, Police, WisDOT, County Highway

Recommendation: A variety of Engineering recommendations in this Tomahawk Bike & Pedestrian Plan involve roadway design.

Crosswalk Enforcement

Crosswalk enforcement campaigns are an effective way to remind motorists of their duty to yield to pedestrians in crosswalks. A press release is usually associated with such campaigns to make the broader public aware of how to operate in the crosswalk areas in Tomahawk.

Short-term Responsible party: Police

Recommendation: Consider adding crosswalk enforcement into the annual rotation of police duties.

School Zone Speed Enforcement

Strict enforcement of speed laws in school zones is one law enforcement tool that can improve the safety for children walking and bicycling to school as well as motorists. A 'zero tolerance' policy for speeders in school zones and even an increase in fines for drivers who violate the posted school zone speed limit are potential approaches. (SRTS Guide)

Short-term Responsible party: Police, schools, Streets Dept.

Recommendation: Consider adding school zone speed limit enforcement into the annual rotation of police duties. Work with the Streets Department to make sure school zones are properly signed and marked, and then work with the school chosen for that year's speed limit enforcement campaign to provide additional education in the local school newsletter.

Sidewalk Snow and Ice Removal Enforcement

Sidewalks are not useful in winter if they are covered with impassible amounts of snow and ice. Every business or resident on a corner lot should be reminded to keep their corner sidewalk ramps clear. If the sidewalk ramp is not cleared, then people in wheelchairs cannot access the sidewalk and may need to use the nearest driveway to get off the road.

Short-term Responsible party: City, Streets Dept.

Recommendation: Continue enforcing the Tomahawk sidewalk snow & ice clearing ordinance.

Program Counts

Reviewing how programs are working and how people are interacting on a regular basis determine if changes are needed to get the desired effect.

Short-term Responsible party: Same entity that is organizing event.

Recommendation: Always count how many people are participating in a bicycle education class, or fun ride, or Walk & Bike To School day event.

Bike and Pedestrian Route Counts

One of the greatest challenges facing the bicycle and pedestrian field is the lack of documentation on usage and demand. Without accurate and consistent demand and usage figures, it is difficult to measure the positive benefits of investments in these modes, especially when compared to the other transportation modes such as the private automobile. Annual bicycle and pedestrian counts provide a direct way to track usage trends over time. The National Bicycle & Pedestrian Documentation Project provides a recommended methodology and timing, survey and count forms free online. Volunteers conduct the counts under a local government committee, so little financial burden exists. Don't forget to provide a thank you token of appreciation to the volunteers.

Short-term Responsible party: City, local bicycling club.

Recommendation 1: Consider annually counting how many people are biking and walking at various points throughout the City using volunteers. See the National Bicycle & Pedestrian Documentation Project for details on setting up a local program.

Short-term Responsible party: City, County Forestry (for Hiawatha Trail).

Recommendation 2: Consider installing trail counters to consistently count walkers and bikers using a trail.

MAPS

Map 1A
Functional Classification
City of Tomahawk
Lincoln County, WI

Legend

- Prinicipal Arterial
- Major Collector
- US & State Highways
- County Highways
- Local Roads
- Existing Trail
- City Limits
- Water

2100 2019 Average Daily Traffic Counts, WisDOT

See Inset

Source: WI DNR, NCWRPC, C. Tomahawk

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

0 0.125 0.25 0.5 0.75 Miles

North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

Map 1B
Functional Classification

City of Tomahawk
Lincoln County, WI

W RIVER ST
E RIVER ST
N 4TH ST
E PROSPECT AV
W LINCOLN AV
E LINCOLN AV
N 3RD ST
N 5TH ST
N 6TH ST
N 2ND ST
9400
W WASHINGTON AV
N RAILWAY ST
N TOMAHAWK AV
W SOMO AV
E SOMO AV
1200
2400
2700
2800
4700
360
2400
260
210
6600
680
5000
5100
5200
E WISCONSIN AV
5600
370
S TOMAHAWK AV
S 2ND ST
S 3RD ST
S 4TH ST
S 5TH ST
S 6TH ST
W SPIRIT AV
W RICE AV
W MERRILL AV
MARINETTE ST
CONSERVATION ST
NORTH AV
LAKE DR
MIRROR LAKE DR
SOUTHGATE DR

Legend

- Prinicipal Arterial
- Major Collector
- Minor Collector
- Existing Trail
- US & State Highways
- County Highways
- Local Roads
- Water

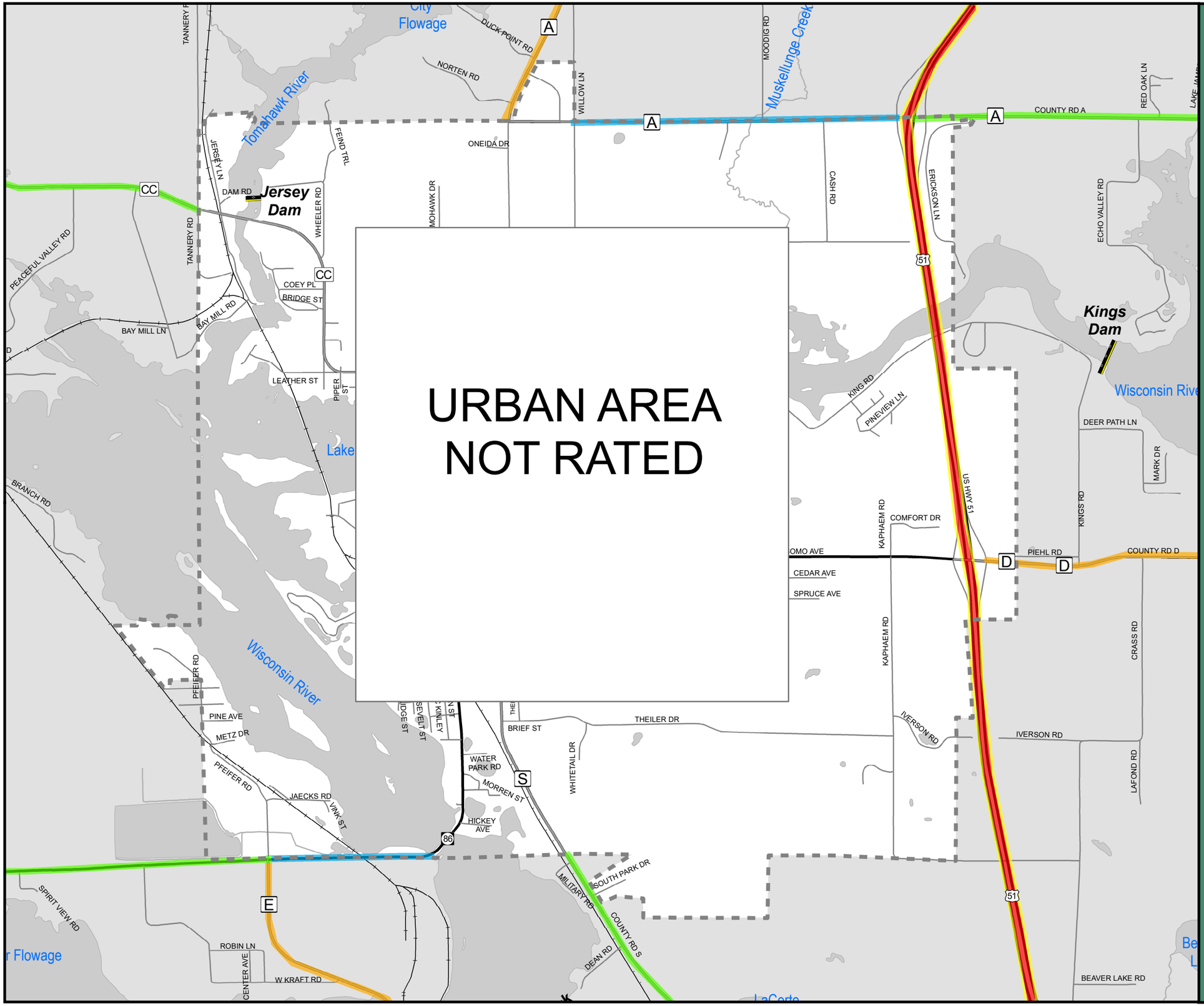
2100 2019 Average Daily Traffic Counts, WisDOT

Source: WI DNR, NCWRPC, C. Tomahawk

N

0 0.025 0.05 0.1 0.15 Miles

North Central Wisconsin Regional Planning Commission
NCWRPC
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org



Map 2
Bikeability of Roads
City of Tomahawk
Lincoln County, WI

Legend

- US & State Highways
- County Highways
- Local Roads
- City Limits
- Water

Bikeability

- Best
- Moderate
- Undesirable
- Prohibited

Source: WI DNR, NCWRPC, C. Tomahawk

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

0 0.125 0.25 0.5 0.75 Miles

North Central Wisconsin Regional Planning Commission

210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

Map 3
Truck Routes
City of Tomahawk
Lincoln County, WI

Legend

- WisDOT Designated Long Truck Route
- WisDOT 65' Restricted Truck Route
- County or Tomahawk Designated Truck Routes
- City Limits
- Local Roads
- Water

Source: WI DNR, NCWRPC, C. Tomahawk

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

0 0.1 0.2 0.4 0.6 Miles

North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

Map 4
Crash Locations
2015-2020
City of Tomahawk
Lincoln County, WI

Legend

- Bicycle
- Pedestrian
- US & State Highways
- County Highways
- Local Roads
- Existing Trail
- City Limits
- Park Areas
- Water

Source: WI DNR, NCWRPC, C. Tomahawk

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

0 0.125 0.25 0.5 0.75 Miles

North Central Wisconsin Regional Planning Commission
NCWRPC
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

Map 5
Walking and Biking Facilities
City of Tomahawk
Lincoln County, WI

Legend

- City Limits
- US & State Highways
- County Highways
- Local Roads
- Existing Trail
- 3 Foot Paved Shoulders
- 5 Foot Paved Shoulders
- Bike Lanes
- Walk & Bike Path
- Underpass
- Sidewalks On One or Both Sides of most Streets
- Significant Sidewalk Gaps
- Almost No Sidewalks

Source: WI DNR, NCWRPC, C. Tomahawk

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

0 0.1 0.2 0.4 0.6 Miles

North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

Map 6
Major Trip Generators
City of Tomahawk
Lincoln County, WI

Legend

- US & State Highways
- County Highways
- Local Roads
- Existing Trail
- City Limits
- Major Employment Areas
- Park Areas
- Water

Number	Park
1	Jersey City Park
2	Box Factory Island
3	Kwahomot Water Ski Park
4	SARA Park
5	Memorial Park
6	Washington Square Park
7	Pride Park
8	Sunset Boulevard Park
9	Tomahawk Sports Complex
10	Bradley Park
11	Frenchtown Park
12	Frenchtown Beach

Source: WI DNR, NCWRPC, C. Tomahawk

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

0 0.125 0.25 0.5 0.75 Miles

North Central Wisconsin Regional Planning Commission
NCWRPC
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

Map 7
Latent Travel Demand
City of Tomahawk
Lincoln County, WI

Legend

- US & State Highways
- County Highways
- Local Roads
- City Limits
- Existing Trail
- Water

Value

High — Low

Source: WI DNR, NCWRPC, C. Tomahawk, Census

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

0 0.125 0.25 0.5 0.75 Miles

North Central Wisconsin Regional Planning Commission
NCWRPC
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

Tomahawk River
Muskellunge Creek
Lake Mohawksin
Wisconsin River
Spirit River Flowage
Jersey Dam
Kings Dam
Hiawatha Trail
Louisiana Pacific Trail

Map 8
Proposed Regional Bike Routes

City of Tomahawk
Lincoln County, WI

Legend

- US & State Highways
- County Highways
- Local Roads
- Railroad
- City Limits
- Existing Trail
- DNR Segment 18 (Potential Trail)
- Alt Scenic Bike Auto Tour
- Scenic Bike Auto Tour
- Water
- Park Areas

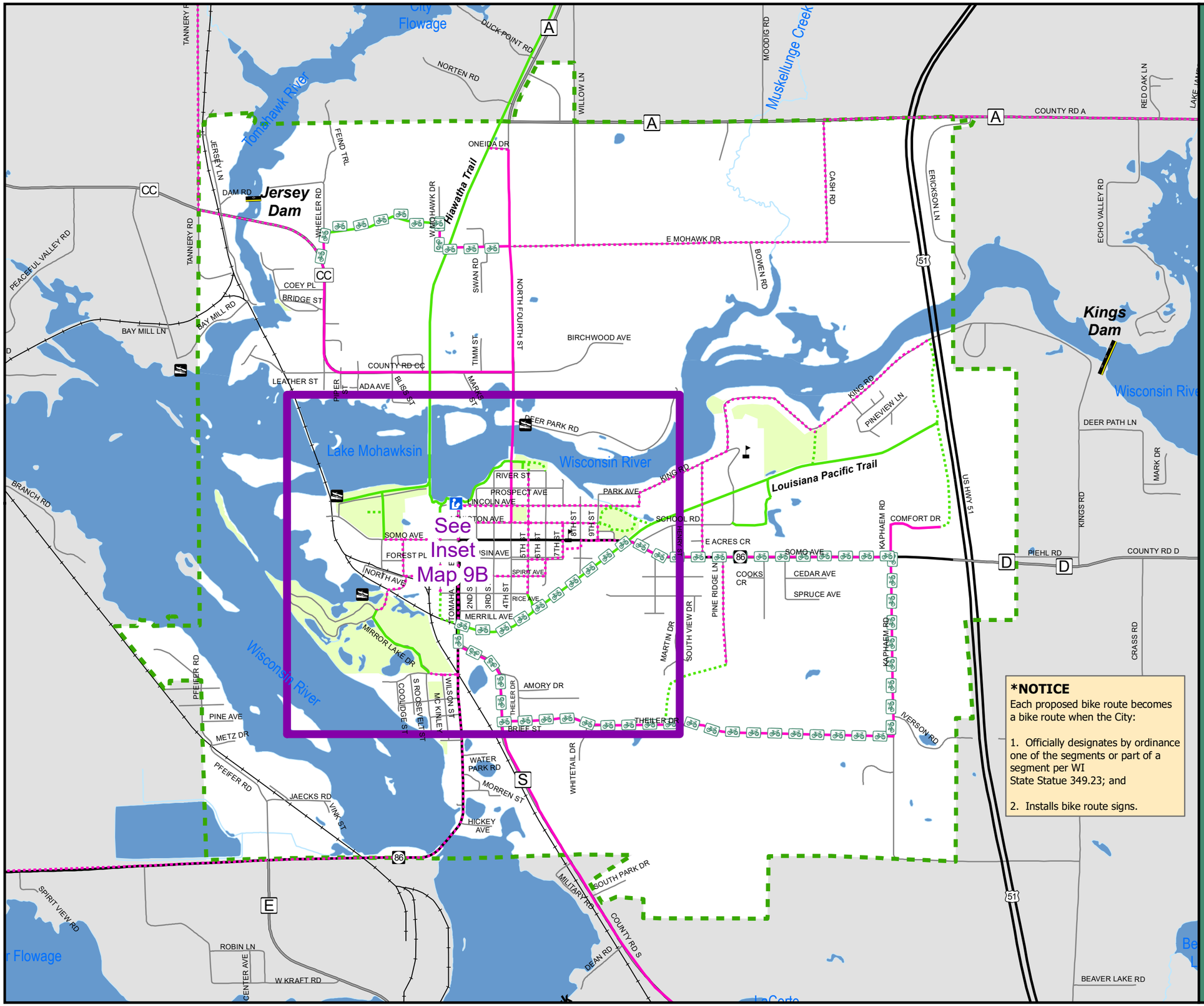
Source: WI DNR, NCWRPC, C. Tomahawk

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

0 0.125 0.25 0.5 0.75 Miles

North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

Map 9A
Trails & Bike Routes
City of Tomahawk
Lincoln County, WI



Legend

- Signed Bike Routes
- Existing On Road (Bike Lane or Route)
- Proposed On Road
- Existing Off Road (Trail)
- Proposed Off Road
- Railroad
- City Limits
- US & State Highways
- County Highways
- Local Roads
- Boat Launches
- Library
- School
- Water
- Park Areas

Source: WI DNR, NCWRPC, C. Tomahawk

This map is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only. NCWRPC is not responsible for any inaccuracies herein contained.

0 0.125 0.25 0.5 0.75 Miles

North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

Map 9B
Trails & Bike Routes
City of Tomahawk
Lincoln County, WI

Lake Mohawksin

Wisconsin River

Hiawatha Trail

DEER PARK RD

RIVER ST

PROSPECT AVE

LINCOLN AVE

PARK AVE

WASHIGTON AVE

SOMO AVE

FOREST PL

WISCONSIN AVE

5TH ST

6TH ST

7TH ST

8TH ST

9TH ST

SPIRIT AVE

NORTH AVE

TOMAHAWK AVE

2ND ST

3RD ST

4TH ST

RICE AVE

Louisiana Pacific Trail

MERRILL AVE

MIRROR LAKE DR

MARTIN DR

AMORY DR

THEILER DR

THEILER D

WILSON ST

MC KINLEY

S ROOSEVELT

COOLIDGE ST

BRIEF ST

consin River

***NOTICE**
Each proposed bike route becomes a bike route when the City:

1. Officially designates by ordinance one of the segments or part of a segment per WI State Statue 349.23; and

2. Installs bike route signs.

Legend

- Signed Bike Routes
- Existing On Road (Bike Lane or Route)
- Proposed On Road
- Existing Off Road (Trail)
- Proposed Off Road
- City Limits
- US & State Highways
- County Highways
- Local Roads
- Railroad
- Boat Launches
- Library
- School
- Water
- Park Areas

Source: WI DNR, NCWRPC, C. Tomahawk

N

0 0.045 0.09 0.18 0.27 Miles

North Central Wisconsin Regional Planning Commission
NCWRPC
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

Map 10
Proposed Improvements
City of Tomahawk
Lincoln County, WI

Legend

- See Table
- See Attachment N

Description

- Proposed Sidewalks
- Proposed Asphalt Path
- Proposed Paved Shoulders
- Proposed Road Diet
- Hazard - Move Guy Wires Covering Path
- Proposed 10-ft Wide Path
- Existing Trail
- US & State Highways
- County Highways
- Local Roads
- Park Areas
- Water

1	On all of CTH CC in Tomahawk, shrink travel lanes to 11-ft wide. Pave 4-ft shoulders. Paint 5-ft bike lanes.
2	Add sidewalk on west and south sides of CTH CC. Instead of adding a sidewalk to Curve Street, add sidewalk to one block of Bridge St and Leather Ave.
3	Complete sidewalk segments. Meander an asphalt path (in lieu of sidewalk) through trees in Sunset Park. Add sidewalk on north side of School Rd.
4	Replace 4-ft wide asphalt path with 10-ft wide asphalt path.
5	Add sidewalk to south side of Somo Ave.
6	Tomahawk Ave Road Diet - Convert curb travel lanes into buffered bike lanes. Existing on-street parking will remain.
7	Add Rapid Flash Beacons for Trail crossing on Tomahawk Ave. Extend a 10-ft wide compacted gravel trail south from the end of Railway Street to the Louisiana Pacific Trail.
8	Shrink travel lanes to 11-ft wide, and paint 5-ft bike lanes.
9	Add sidewalk on east and south side of STH 86 between Water St and the first driveway west of bridge. Expand bridge deck to create bike lanes.
10	Add 10-foot wide compacted gravel path along CTH S from Brief Street south to Kalhle Park (STH 107 & CTH S).

Source: WI DNR, NCWRPC, C. Tomahawk

N

0 0.125 0.25 0.5 0.75 Miles

North Central Wisconsin Regional Planning Commission
210 McClellan St., Suite 210, Wausau, WI 54403
715-849-5510 - staff@ncwrpc.org - www.ncwrpc.org

ATTACHMENT A

Bicycle Crash Analysis for Wisconsin, 2006

From: Wisconsin Department of Transportation

Bicycle Crash Analysis for Wisconsin

Successful efforts have been made over the past three decades in Wisconsin to reduce the number of crashes and fatalities related to bicycle–vehicle crashes. However, a more complete understanding of these crashes was necessary in order to continue to decrease the number of serious and fatal crashes. This comprehensive crash analysis takes the first and most important step of "typing" bike-motor vehicle crashes for 2003. This report goes on to analyze these crashes in more depth and identifies commonalities between these crashes and crash characteristics, specifically related to traffic conditions, roadway attributes, and the users involved in the crashes.

REVIEW OF MAJOR FINDINGS

Based on the preliminary findings of previous smaller studies, some of this study's findings are not surprising. In another regard, the study produced significant new contributions to crash evaluation in the state. This study made an enormous contribution by determining the crash types for all bicyclist-motorist (bicycle–vehicle) crashes during an entire year. It also researched the characteristics of roadway width in more depth than in previous works. Additionally, the evaluation of sidepath crashes was not done on a statewide basis until this study was performed. Here are the major findings of the report:

- Bicycle–vehicle crashes are declining in the State of Wisconsin. From 1999 – 2004, annual crashes have decreased by 14%. Ideally, this report will contribute to a continual reduction in crashes by increasing bicyclist awareness, providing countermeasures to avoid common crashes, and increasing education amongst bicyclists and motorists.
- Bicycle–vehicle crashes are almost twice as common during workweek days than on the weekend days. The majority of workweek crashes occur during the a.m. and p.m. peak travel hours. The lower number of crashes occurring on weekends may indicate that recreational bike trips occur more frequently on recreational trails or low volume roadways where exposure is less.
- Many bicycle–vehicle crashes had similar characteristics. A large concentration of crashes occurred within one of, or a combination of, the following environments: in an urban city, at an intersection, or on an urban city street or arterial roadway. Eighty-three percent of crashes occurred in a city (MV4000 Report), 93.6% of crashes occurred in an urban area (MV4000 Report), 65.7% of crashes occurred at an intersection (PBCAT), 71.7% of crashes occurred on a city street (MV4000 Report), and 56.1% of crashes occurred on an arterial street.
- Unfortunately, alcohol was a factor in some of the crashes. The MV4000 data does not declare whether the driver or bicyclist was under influence, only if alcohol was a factor in the crash. 4.2% of urban crashes reported alcohol as being involved and 4.6% of rural crashes reported alcohol as being involved. This is slightly lower than national percentages from the Crash Types of the Early 1990's report and compares to a 7.0% alcohol involvement of all Wisconsin crashes.
- Bicycle–vehicle crashes occurred mainly during daylight hours, and when they did occur at night, most were in a location with lighting. Over 83% of crashes occurred during daylight hours, and of the 12.3% of crashes occurring at night, only one out of every ten occurred without some sort of lighting present.

Source: Bicycle Crash Analysis for Wisconsin Using a Crash Typing Tool (PBCAT) and Geographic Information System (GIS); Michael Amsden and Thomas Huber; June 2006

Bicycle Crash Analysis for Wisconsin

- Male bicyclists were involved in almost 75% of all bicycle – vehicle crashes. Even crashes involving children reported over 70% of the bicyclists being male.
- Almost 80% of rural bicycle–vehicle crashes occurred on roadways with posted speed limits of 55 miles per hour. Crashes occurring at such high rates of speed will increase the likelihood of a bicyclist injury or death. This is evident in the higher percentage of rural crashes resulting in fatalities than in urban crashes.
- Four out of the top five crash types indicate that the motorist made the critical error. This may indicate that motorists are not fully aware of bicyclists on the roadway and that increased education is necessary.
- Urban areas and urban streets have much higher crash rates than rural areas based on all indices examined - miles of roadway, bicycle miles traveled, and vehicle miles traveled. Although crash rates were higher for urban areas, the rate of fatal crashes was double for rural crashes compared to urban crashes based on bicycle miles traveled.
- Milwaukee County has the highest average crash rate when bicycle miles traveled and vehicle miles traveled are averaged together. The rate is three times that of the lowest counties of Brown, Marathon, and Wood.
- The city of Madison has a low average crash rate based on bicycle miles traveled. A scattering of other cities – Appleton, Green Bay, and Wausau also have relatively low average crash rates based on bicycle miles traveled, but none of these communities come close to the total bicycle miles traveled as demonstrated by Madison.
- When bicycle-vehicle crash rate is compared to the overall crash rate for all vehicles, the rate was twice as high for bicycle-vehicle crashes compared to all vehicle crashes. The bicycle crash rate was based on bicycle miles traveled, while the comparison rate for total vehicle crashes was based on total vehicle miles traveled.
- For local rural roads, the greater the width, the lower the bicycle-vehicle crash rate. Twenty foot roadways had a crash rate that was double the crash rate of 22 foot roadways, but the 22 foot roadways had a rate that was over 40% higher then 24' roadways. Overtaking-type crashes were significantly lower for 24' roadways.
- Rural state highways had much lower bicycle-vehicle crash rates then local roads. Similar to local roads, 24-foot roadways had significantly lower crash rates then 22-foot roadways. Interestingly, having three foot paved shoulders did not improve the crash rate among these widths of roadways. However, the crash rate did significantly lessen when five [foot] paved shoulders were added (compared to three foot paved shoulders).
- Sidepath crashes are common crashes in urban areas. Twenty-nine percent of all urban crashes were recorded as such. Motorist drive-out from both sign and signal-controlled intersections are by far the two most common crash types. How significant a problem this is, is difficult to ascertain without knowing the frequency of bicycle use on sidepaths/walks and their connecting crosswalks.

Source: Bicycle Crash Analysis for Wisconsin Using a Crash Typing Tool (PBCAT) and Geographic Information System (GIS); Michael Amsden and Thomas Huber; June 2006

ATTACHMENT B

Highlights of...
Wisconsin Pedestrian and Bicycle Crash Analysis: 2011-2013

From: Wisconsin Department of Transportation

Highlights

Overall Trends in Wisconsin Pedestrian and Bicycle Safety

- Higher levels of walking and bicycling were associated with greater pedestrian and bicyclist safety: between 2006 and 2013, the number of people walking and bicycling to work increased and the risk of pedestrian and bicyclist fatalities and injuries (per commuter) decreased.
- Of fatal traffic crashes reported between 2011 and 2013, approximately 10% involved pedestrians and 2% involved bicyclists. Approximately 9% of total trips were made by pedestrians and 1% were made by bicyclists, so these travel modes were overrepresented in fatal crashes.
- The highest concentrations ("hot spots") of fatal and severe-injury pedestrian and bicycle crashes tend to be along signalized, multilane, arterial roadway corridors in urban and suburban areas with moderate to high levels of pedestrian or bicycle activity. Without controlling for pedestrian and bicycle volumes (or other measures of exposure), it is not possible to determine if these locations experienced more crashes simply because they had more activity or because their conditions were inherently more dangerous. Regardless, these types of locations warrant attention due to high numbers of crashes.

Fatal Pedestrian and Bicycle Crashes

The following points highlight common characteristics of fatal pedestrian and bicycle crashes reported in Wisconsin between 2011 and 2013. Note that these results do not control for exposure: some characteristics may have high percentages of crashes because they are associated with higher levels of pedestrian or bicycle activity.

Fatal Pedestrian Crashes: Location

- 83% were at locations with no traffic signal or stop sign facing the driver (some of these locations had crosswalks, which require motorists to yield the right-of-way to pedestrians).
- 74% were on arterial or collector roadways.
- 55% occurred on roadways between intersections (i.e., >50 feet from the nearest intersection).
- 46% were on roadways with speed limits of 35 mph or higher.
- 36% were on rural roadways.
- 20% were at night on roadways with no lights.

Fatal Pedestrian Crashes: Behavior

- 77% involved a motor vehicle traveling straight.
- 31% involved alcohol (either the driver or the pedestrian had been drinking alcohol).
- 28% involved a driver not yielding to a pedestrian in a crosswalk.
- 65% of fatalities at intersections involved driver error (59% failed to yield to a pedestrian in a crosswalk and 6% violated a traffic signal) while 12% involved pedestrian error (violated a traffic signal).

Fatal Pedestrian Crashes: Other

- 52% occurred between 3 p.m. and midnight. The peak 3-hour period was 3 to 6 p.m. (24%).
- 31% involved pedestrians aged 65 or older.

Fatal Bicycle Crashes: Location

- 76% were on arterial or collector roadways.
- 70% were on roadways with speed limits of 35 mph or higher.

- 67% were at locations with no traffic control for the driver (i.e., no traffic signal or stop sign).
- 64% were on roadways between intersections.
- 33% were on rural roadways.

Fatal Bicycle Crashes: Behavior

- 79% involved a motor vehicle traveling straight.
- 39% involved a motor vehicle striking a bicyclist from behind on a roadway. Of these rear-end fatalities, 62% were on rural highways and 31% occurred during darkness.
- 27% involved alcohol (either the driver or the bicyclist had been drinking alcohol).

Fatal Bicycle Crashes: Other

- Crashes involving bicyclists younger than age 20 decreased from 62% of all bicycle crashes in 2003 to 33% of all bicycle crashes between 2011 and 2013 (includes all injury severity levels).

Strategies to Improve Pedestrian and Bicycle Safety

This report recommends a multi-faceted approach to reduce pedestrian and bicycle crash risk, including engineering, education, enforcement, and evaluation strategies.

Engineering

- Reduce roadway design speeds (e.g., reduce the number of lanes, narrow roadway lanes).
- Reduce roadway crossing distances.
- Provide pedestrian and bicycle facilities (e.g., sidewalks, paved shoulders, and bicycle lanes).
- Improve roadway lighting.

Education

- Increase driver awareness of laws requiring them to yield to pedestrians in crosswalks and provide at least three feet of space when passing bicyclists (even when a bike lane exists).
- Increase driver awareness of the danger they pose to their neighbors who are walking and bicycling when they speed, are intoxicated, or are distracted (e.g., texting while driving, eating).
- Increase driver awareness of their responsibility to travel at a prudent speed (potentially lower than the speed limit) in order to be able to react safely to pedestrians and bicyclists at night.
- Increase bicyclist awareness of the risk of riding in the opposite direction of adjacent traffic, disobeying traffic control, and bicycling at night without lights and bright clothing.
- Increase pedestrian awareness of the risk of walking while intoxicated and disobeying traffic control. Emphasize the importance of pedestrian nighttime visibility to aid driver detection.

Enforcement

- Enforce laws to reduce drunk driving, speeding, failure to yield to pedestrians, and passing too close to bicyclists
- Enforce laws to reduce bicycling at night without lights and pedestrian and bicyclist traffic signal violations.

Evaluation

- Improve police pedestrian and bicycle crash reporting practices to record details such as alcohol involvement by person/individual, crash type, helmet use, use of lights, and relevant maintenance problems.
- Collect pedestrian and bicycle counts and surveys to account for exposure.
- Quantify the impacts of specific intersection and roadway characteristics, education, and enforcement efforts on pedestrian and bicycle crash risk to inform future recommendations.

ATTACHMENT C

2021 Tomahawk Bicycle & Pedestrian Survey Results
Summarized Responses with Comments

Compiled by: NCWRPC

2021 Tomahawk Bicycle & Pedestrian Survey

Summarized Responses with Comments

Tomahawk Bicycle & Pedestrian Survey

Responses and Status

TOTAL RESPONSES	OVERALL SURVEY STATUS	NOTIFICATIONS
148	CLOSED	Edit

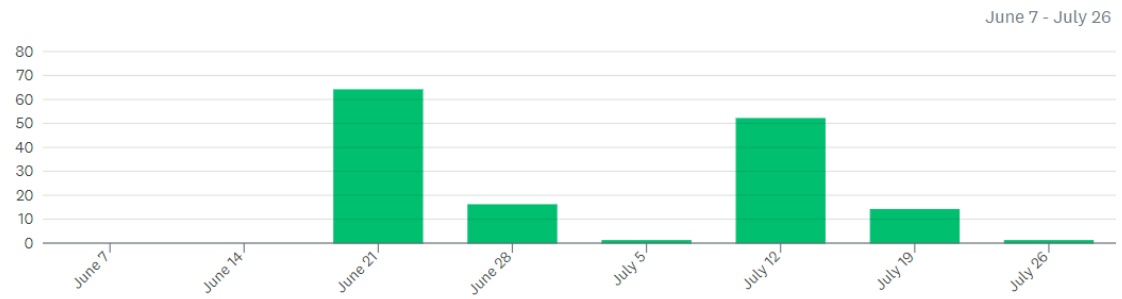
Collectors

CLOSED

Tomahawk
Created: 6/21/2021

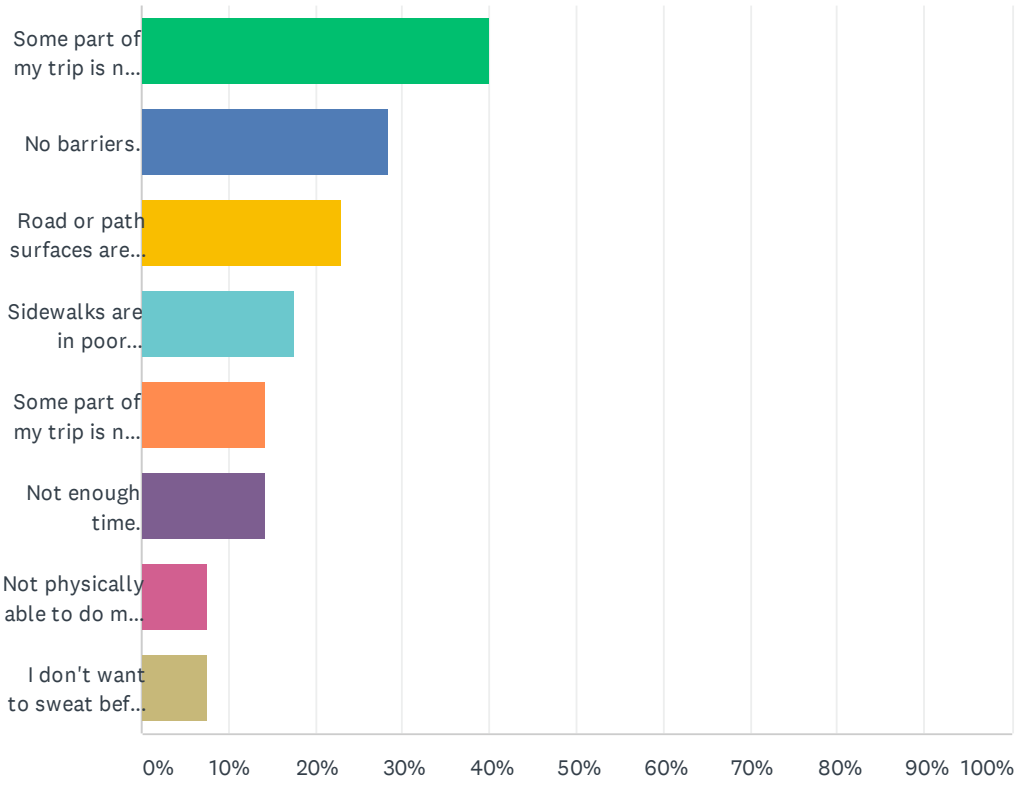
148 RESPONSES COLLECTED

Responses Volume



Q1 What barriers exist that limit you from walking or biking more often? (Choose all that apply.)

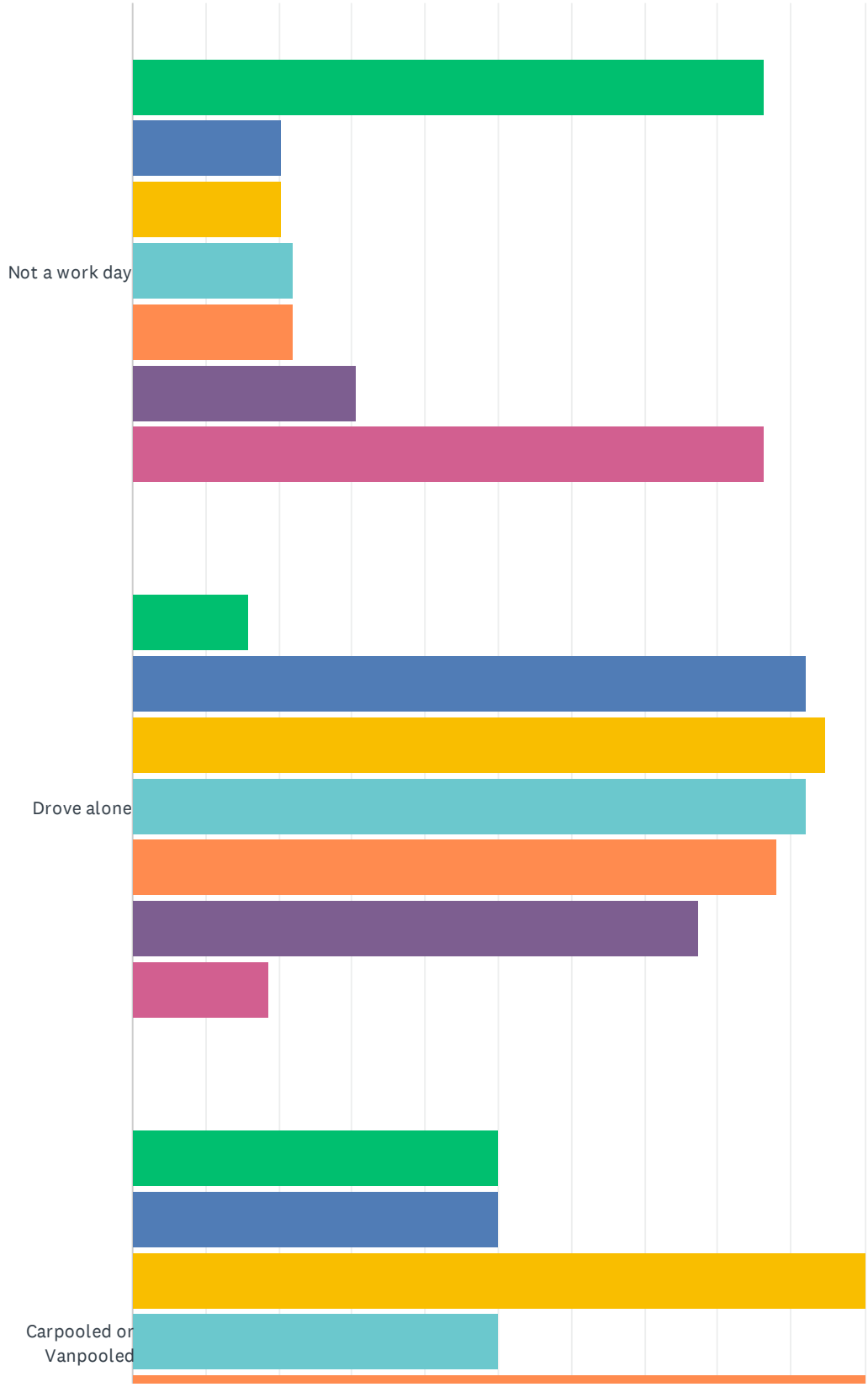
Answered: 148 Skipped: 0

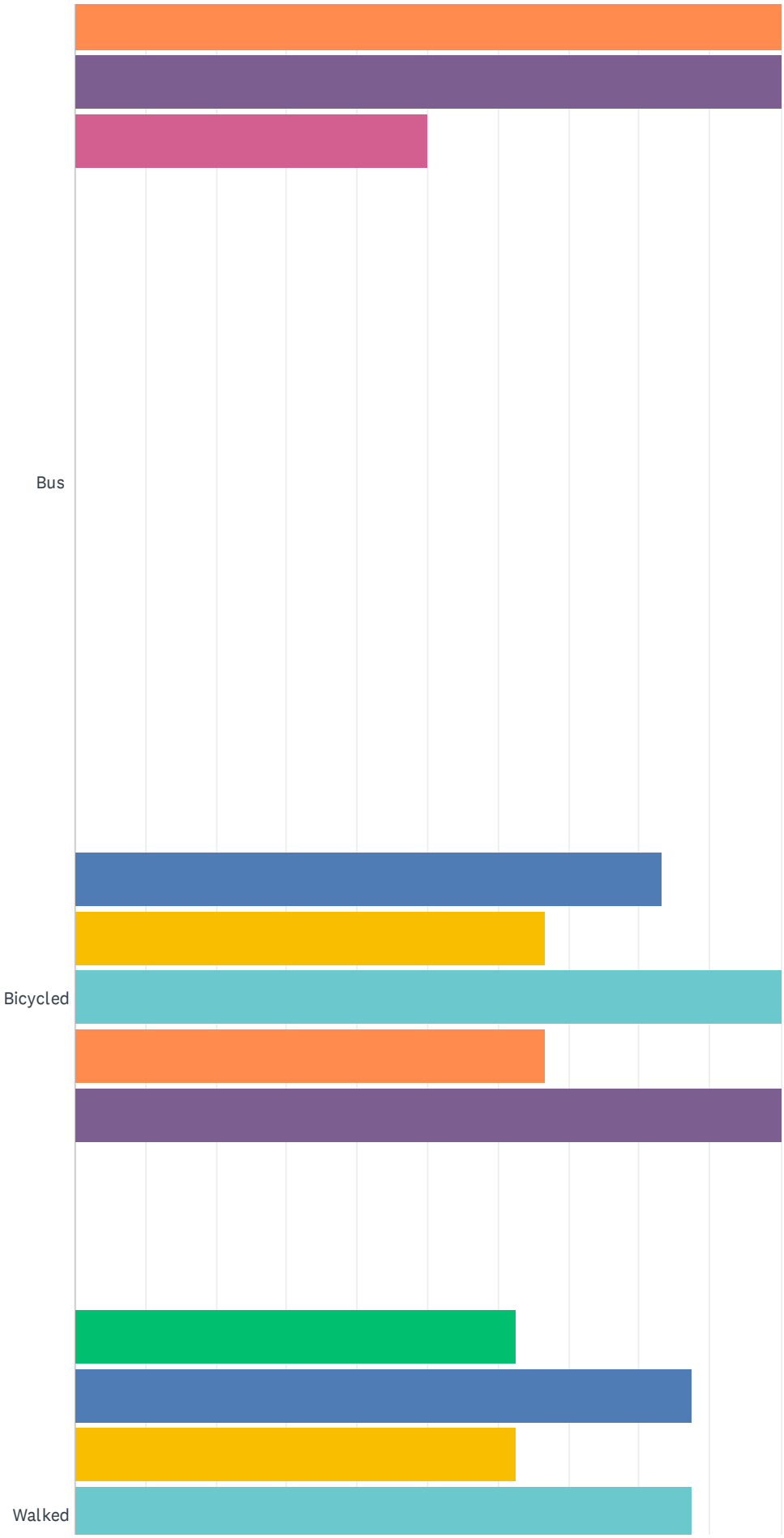


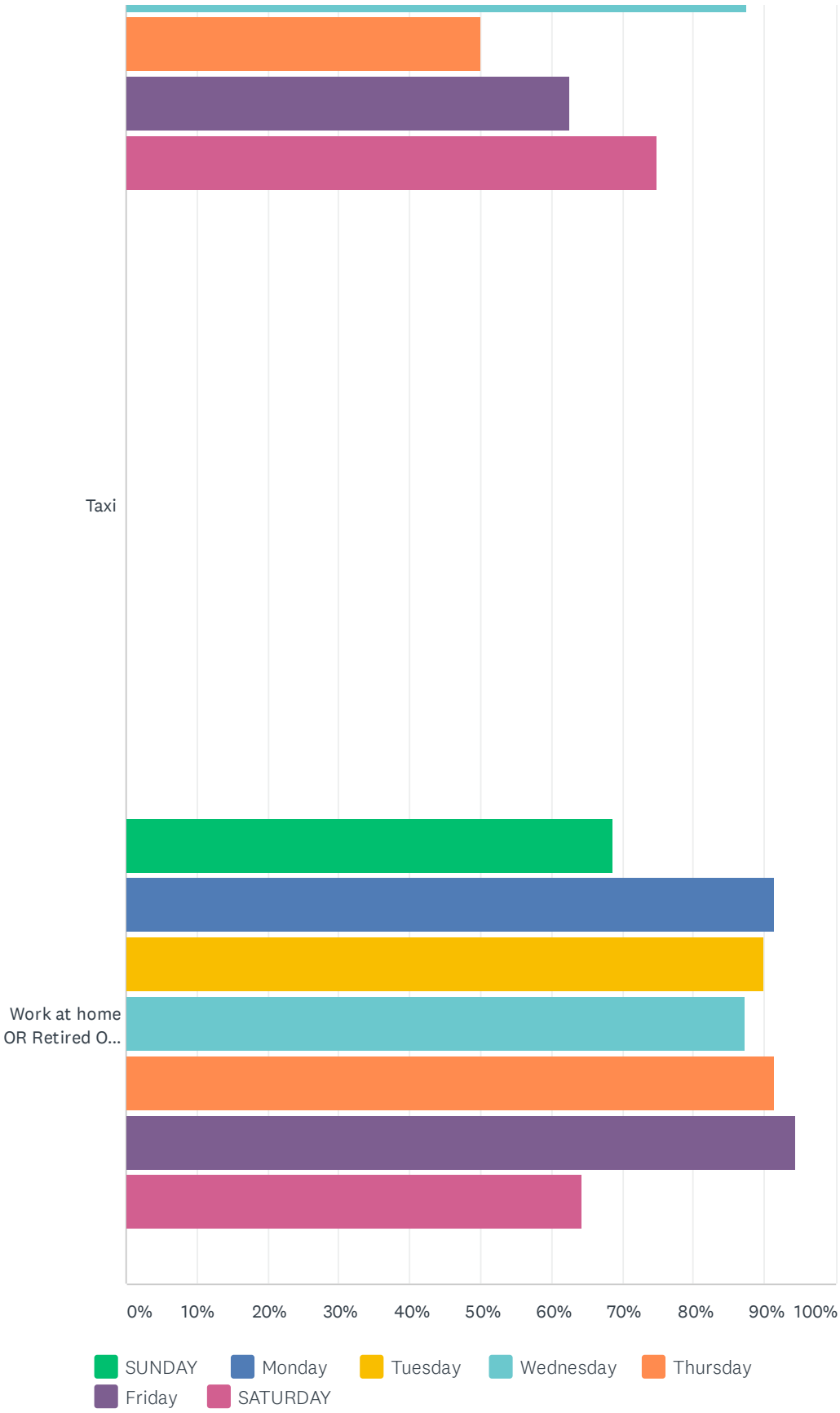
ANSWER CHOICES	RESPONSES	
Some part of my trip is not safe to bike for traffic reasons (e.g., too much traffic, fast traffic, etc.)	39.86%	59
No barriers.	28.38%	42
Road or path surfaces are poor for biking.	22.97%	34
Sidewalks are in poor condition.	17.57%	26
Some part of my trip is not safe to bike due to personal safety (e.g., secluded trail, dogs, crime, etc.)	14.19%	21
Not enough time.	14.19%	21
Not physically able to do more (e.g., limited by my endurance, health, or disability).	7.43%	11
I don't want to sweat before work/school.	7.43%	11
Total Respondents: 148		

Q2 In a usual week in summer when the weather is good enough, how do you get to work?

Answered: 148 Skipped: 0



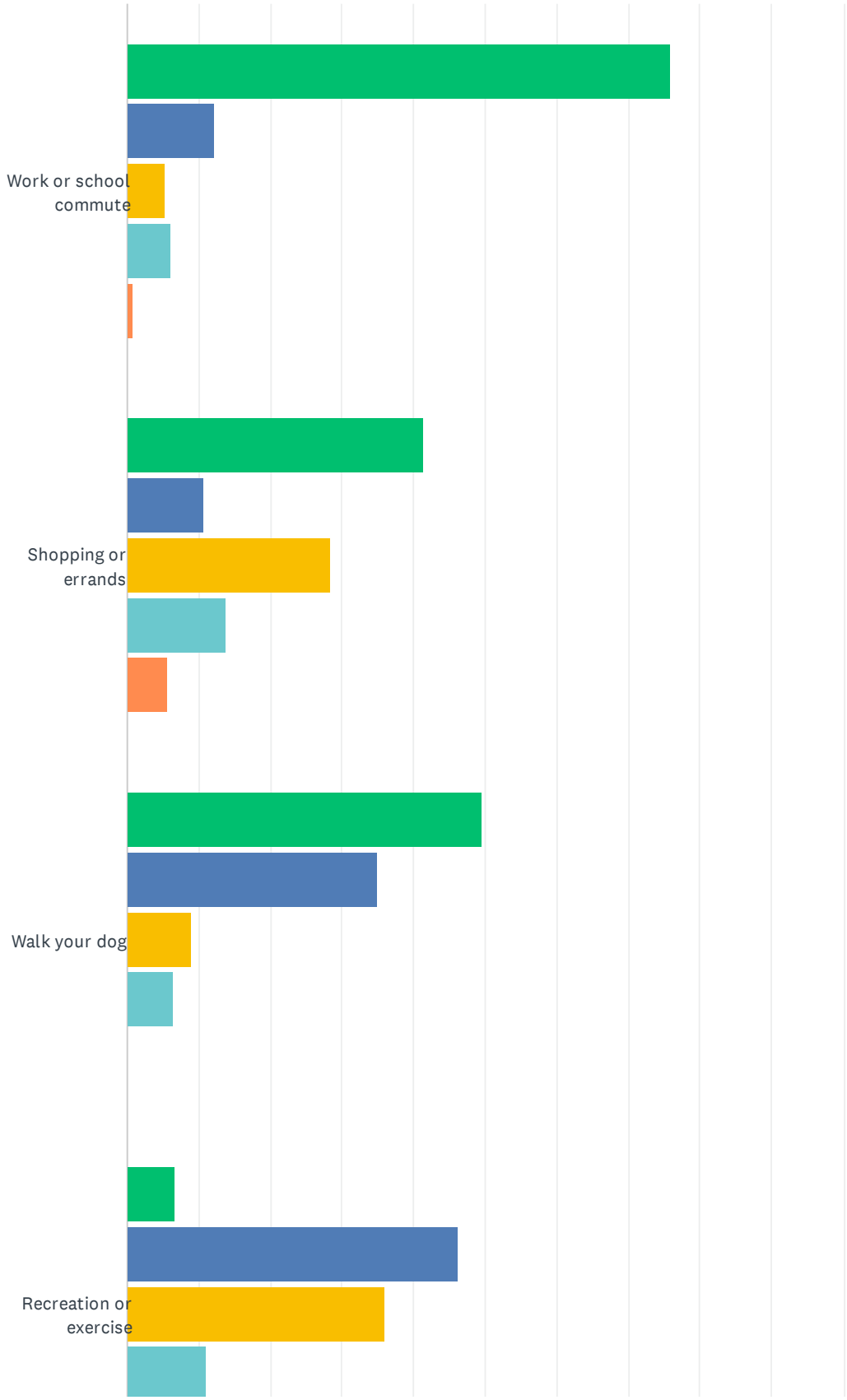

Bus
Bicycled
Walked

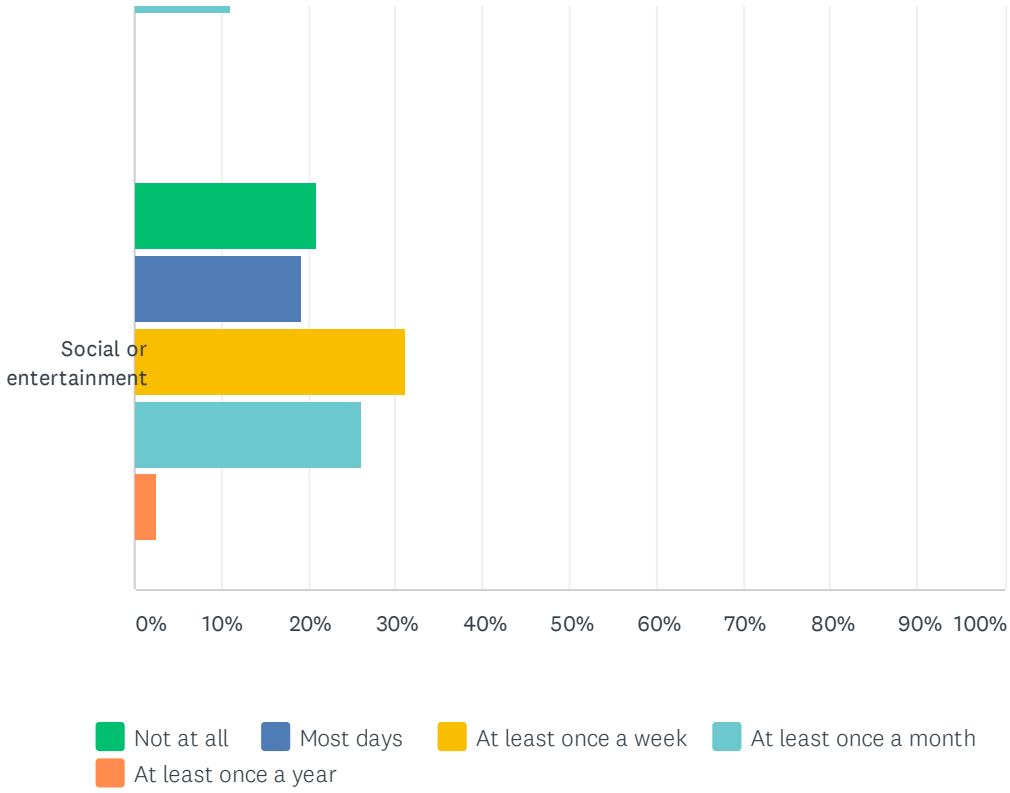

Taxi
Work at home OR Retired O...
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
SUNDAY
Monday
Tuesday
Wednesday
Thursday
Friday
SATURDAY

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	TOTAL RESPONDENTS
Not a work day	86.44% 51	20.34% 12	20.34% 12	22.03% 13	22.03% 13	30.51% 18	86.44% 51	59
Drove alone	16.00% 12	92.00% 69	94.67% 71	92.00% 69	88.00% 66	77.33% 58	18.67% 14	75
Carpooled or Vanpooled	50.00% 1	50.00% 1	100.00% 2	50.00% 1	100.00% 2	100.00% 2	50.00% 1	2
Bus	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0
Bicycled	0.00% 0	83.33% 5	66.67% 4	100.00% 6	66.67% 4	100.00% 6	0.00% 0	6
Walked	62.50% 5	87.50% 7	62.50% 5	87.50% 7	50.00% 4	62.50% 5	75.00% 6	8
Taxi	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0
Work at home OR Retired OR Unemployed.	68.57% 48	91.43% 64	90.00% 63	87.14% 61	91.43% 64	94.29% 66	64.29% 45	70

Q3 Tell us how frequently you walk for the following purposes:

Answered: 141 Skipped: 7

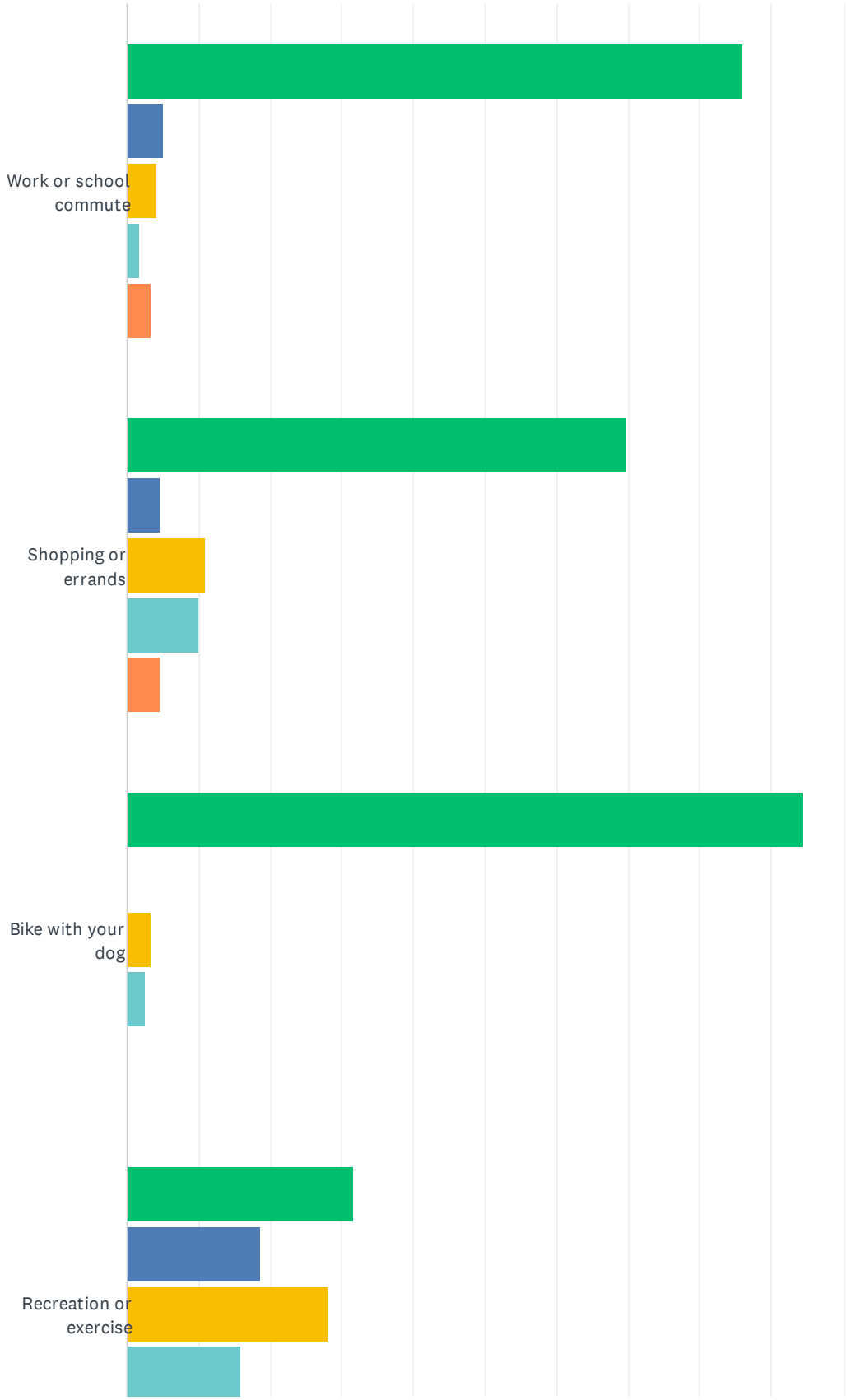


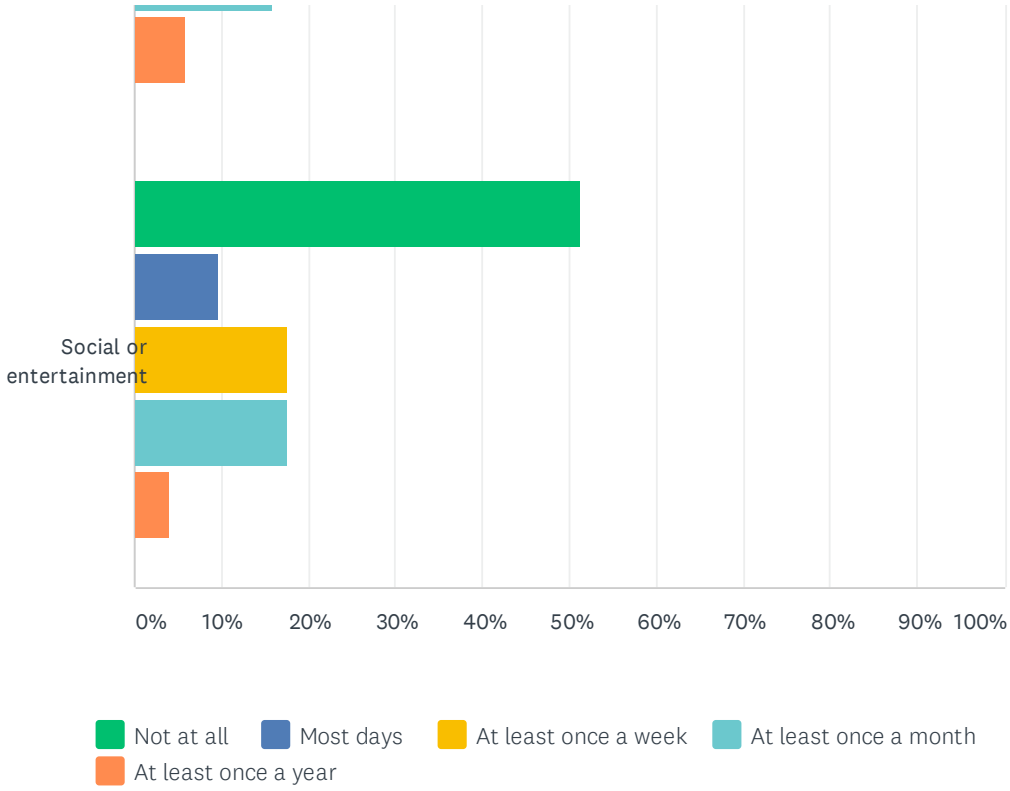


	NOT AT ALL	MOST DAYS	AT LEAST ONCE A WEEK	AT LEAST ONCE A MONTH	AT LEAST ONCE A YEAR	TOTAL
Work or school commute	75.86% 88	12.07% 14	5.17% 6	6.03% 7	0.86% 1	116
Shopping or errands	41.46% 51	10.57% 13	28.46% 35	13.82% 17	5.69% 7	123
Walk your dog	49.59% 61	34.96% 43	8.94% 11	6.50% 8	0.00% 0	123
Recreation or exercise	6.62% 9	46.32% 63	36.03% 49	11.03% 15	0.00% 0	136
Social or entertainment	21.01% 25	19.33% 23	31.09% 37	26.05% 31	2.52% 3	119

Q4 Tell us how frequently you bike for the following purposes:

Answered: 141 Skipped: 7





	NOT AT ALL	MOST DAYS	AT LEAST ONCE A WEEK	AT LEAST ONCE A MONTH	AT LEAST ONCE A YEAR	TOTAL
Work or school commute	86.07% 105	4.92% 6	4.10% 5	1.64% 2	3.28% 4	122
Shopping or errands	69.77% 90	4.65% 6	10.85% 14	10.08% 13	4.65% 6	129
Bike with your dog	94.26% 115	0.00% 0	3.28% 4	2.46% 3	0.00% 0	122
Recreation or exercise	31.65% 44	18.71% 26	28.06% 39	15.83% 22	5.76% 8	139
Social or entertainment	51.20% 64	9.60% 12	17.60% 22	17.60% 22	4.00% 5	125

Q5 (Optional) What concerns do you have about walking or biking in Tomahawk?

Answered: 74 Skipped: 74

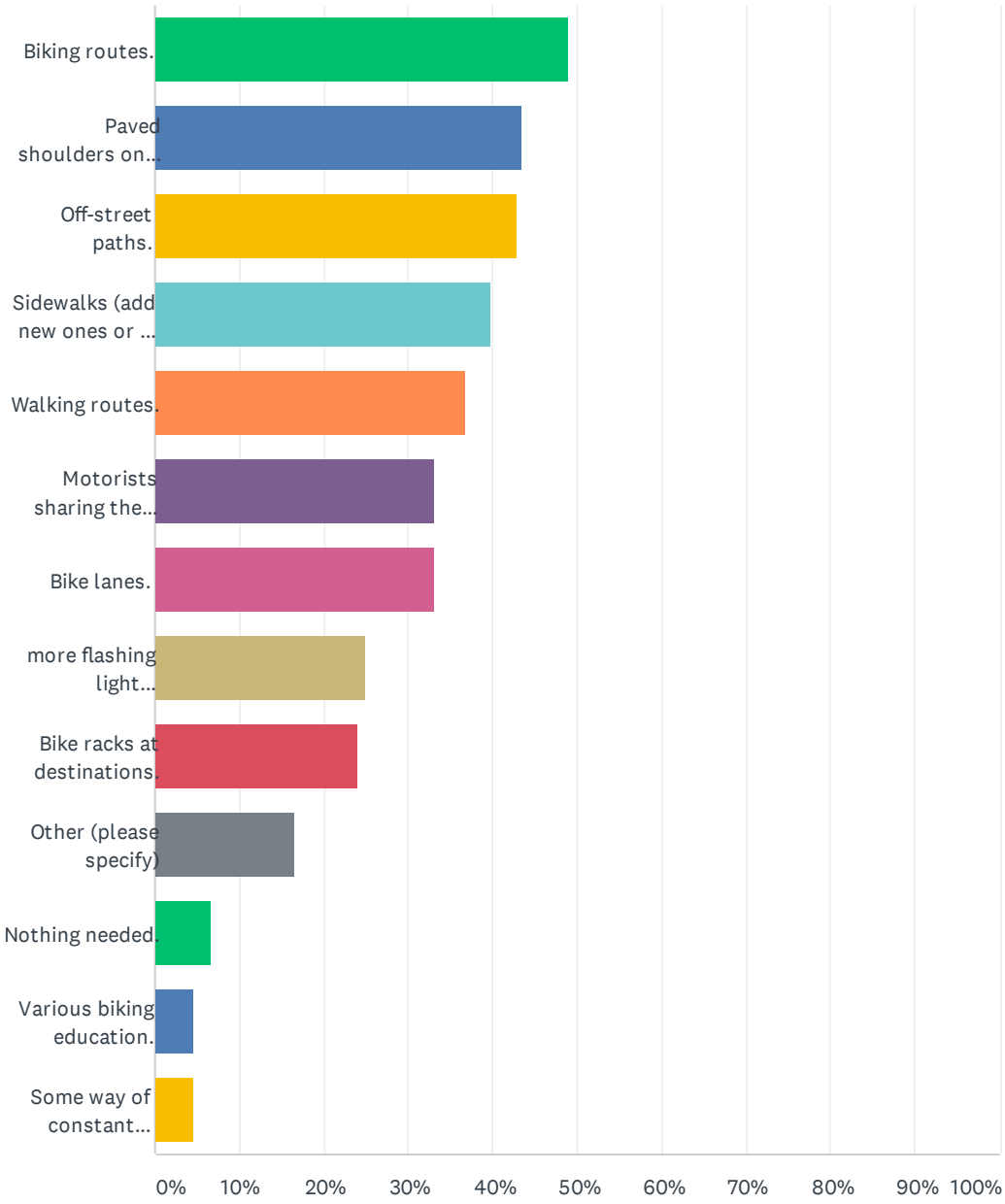
#	RESPONSES	DATE
1	I love biking. I'm off during the summer and I bike 3-4 days a week or more. I have been almost hit many times in Tomahawk. I've been brushed my cars even though no other cars have been in the opposite lane. The general public in Tomahawk does not respect bikers. Truck traffic coming from the paper mill is especially dangerous.	7/26/2021 9:16 AM
2	Walking in winter very difficult due to unshoveled, icy sidewalks.	7/25/2021 2:11 PM
3	Lack of trails and trails next to automobile traffic	7/24/2021 12:42 PM
4	Drunk drivers and drivers not stopping for people in the crosswalks	7/23/2021 10:05 PM
5	Some area like the river walk are unsafe due to the lack of safety measures. I personally have had dangerous encounters with other people on the river walk and I now avoid it and running alone all together.	7/23/2021 8:45 PM
6	The "Bike trail" on CC is not a bike trail. Too close to the cars. Sidewalks are in terrible repair.	7/23/2021 8:07 PM
7	lack of a continuous loop or linear trail that is paved and out of traffic or at least heavy traffic. Look at Boulder Junction for an excellent example.	7/23/2021 4:56 PM
8	Not enough bike/walk lanes. Drivers unaware or do not yield to Walker/jogger/biker	7/23/2021 12:31 PM
9	Limited visibility along river walk	7/20/2021 8:08 PM
10	The graffiti that happens on the bridge and tunnel. People just hanging out on the bridge.	7/17/2021 8:10 PM
11	I live about 3 miles outside of Tomahawk on Hwy 86. The shoulder is gravel, and too difficult for me because I need to use a recumbent bicycle. I have the same problem in town because there are no dedicated bike lanes or paths, and it's currently not safe to share the road because most drivers do not understand or follow the bike share rules of the road.	7/17/2021 1:24 AM
12	I love walking in Tomahawk!	7/16/2021 11:03 AM
13	I live quite a ways out of town.	7/15/2021 11:13 PM
14	None	7/15/2021 11:09 PM
15	Hwy A is dangerous to bike on...would love a bigger shoulder on each side.	7/15/2021 1:02 PM
16	Traffic and small shoulders on the roads	7/15/2021 12:22 PM
17	Need a sitter for our young kids	7/15/2021 11:11 AM
18	More paved trails	7/15/2021 6:55 AM
19	Poor condition of sidewalks. Busy road to cross which can be unsafe at times to take my children across.	7/15/2021 5:18 AM
20	Trails close to or crossing traffic, tall weeds.	7/15/2021 4:46 AM
21	The majority of sidewalks in town are not bike or wheelchair friendly. There is no on/off access at the ends of each block unless you can jump the curb. Sidewalks are uneven.	7/14/2021 11:30 PM
22	Live on hwy cc no bike path. Cars drive way too fast	7/14/2021 10:47 PM
23	Off County U there is no safe space to bike to a trail. Vehicles drive way too fast on that section of road.	7/14/2021 10:36 PM
24	Paths on roadways. The rr grade needs to be upgraded	7/14/2021 8:25 PM

25	When biking in Bradley park the main road and trail by mirror lake was opened to atv traffic and now the speeds the vehicles travel make it dangerous to be on the trail and the washed out and ruts left behind make it worse cause they are not properly maintained.	7/14/2021 8:01 PM
26	Safety	7/14/2021 7:54 PM
27	I wish there were more trails.	7/14/2021 7:46 PM
28	No lighting on trails	7/14/2021 7:44 PM
29	Not enough off sidewalk or road trails	7/14/2021 6:45 PM
30	The 4 wheelers and atv/utv are expanding to more and more silent sport trails. Not enough places designated walking, biking, running only!	7/14/2021 5:33 PM
31	Unlevel ground that can cause me to fall no place to sit and rest a minute	7/14/2021 5:06 PM
32	No paved trails...I love the Villas county trails!	7/14/2021 4:14 PM
33	bears	7/14/2021 3:03 PM
34	None	7/14/2021 3:01 PM
35	Crossing highway 8	7/14/2021 2:41 PM
36	There are no updated trails	7/14/2021 2:01 PM
37	Little to no paved shoulder on Cty Highways	7/14/2021 1:55 PM
38	Low hanging branches over sidewalks, dog poop not being picked up, lack of available poop bags towards center city area, Lack of sidewalk on Bradley Farm road. Bradley Farm road is a high traffic area, especially during school year and can make walking/biking dangerous.	7/4/2021 6:55 AM
39	Road traffic	7/1/2021 9:20 AM
40	Traffic. Lack of following biker walker protocols... safety awareness issues... traffic is TOO FAST and NOT MINDFUL be good to have more bike racks and bike repair stations along trails wider shoulders FOR biking on roads (S and D, for example) and marked as such	7/1/2021 8:16 AM
41	None	7/1/2021 7:53 AM
42	None	7/1/2021 6:52 AM
43	I live in the country and live on a county road with a lot of corners and traffic that isn't safe for me to ride on.	6/30/2021 10:15 PM
44	The congested traffic getting to the trails.	6/30/2021 2:27 PM
45	Motorists not paying attention to those biking or walking - not knowing the pedestrian laws regarding motor vehicles.	6/28/2021 3:31 PM
46	Traffic	6/28/2021 2:21 PM
47	none	6/28/2021 10:18 AM
48	Trails not mowed enough, worry about ticks, bugs are bad	6/28/2021 9:03 AM
49	Cyclists need to realize they should stay on bike trails. they think they own the roads. With all the logging trucks on this area they should stay off the roads.	6/27/2021 9:53 PM
50	It is getting difficult to cross North 4th Street. Traffic is heavy and drivers are usually going 5 to 10mph over the posted speed limit and they rarely yield to pedestrian traffic. I never see the TPD enforcing the speed limit on 4th Street during the daytime when the traffic is the heaviest.	6/27/2021 8:26 PM
51	Groups of kids being disrespectful and disruptive, destroying property (graffiti under the tunnel and on the trestle), leaving garbage everywhere, etc. Areas being very crowded. Too many ATVs and UTVs driving recklessly and at dangerous speeds.	6/26/2021 10:28 PM
52	Sidewalks are often broken up with missing sections that force you to walk on someone's lawn or head out onto the street.	6/26/2021 6:47 PM
53	Usually need to carry items to and from places.	6/26/2021 4:56 PM

54	Have to cross 4th street. Not easy as there are not many breaks in traffic. 4 way stop way to busy to easily cross. Drivers are not good at letting pedestrians or bikes cross.	6/26/2021 12:13 PM
55	Maintenance of trails AFTER construction.	6/26/2021 11:46 AM
56	Gravel is harder and more dangerous to ride. We drive up to boulder junction	6/26/2021 8:07 AM
57	The sidewalks all don’t have ramps. It’s hard to push a stroller over the curbs.	6/26/2021 8:04 AM
58	Bikes shouldn't be on the sidewalk & likely too slow to be safe in the car lanes, especially downtown.	6/26/2021 8:02 AM
59	Not enough well lit trails or even surfaces.	6/26/2021 7:51 AM
60	The sidewalks are in bad condition and on some streets they randomly end making you have to walk in the streets.	6/26/2021 7:24 AM
61	There seems to be quite a few bikes on the sidewalks.	6/26/2021 7:03 AM
62	Division of walking and biking spaces, lack of.	6/26/2021 6:55 AM
63	Keeping bikes off the sidewalks.	6/26/2021 6:45 AM
64	Bugs! MTW and Hiawatha Trails need to be mowed more often and brush cut back on a more routine basis.	6/25/2021 10:50 AM
65	Lack of respect from the utv/atvs and regular vehicles.	6/24/2021 12:48 PM
66	I walk alone and with my dog. Crime, safety.	6/24/2021 11:04 AM
67	The bear skin trail needs to be mowed, I was biking on the trail in June & it was not mowed	6/23/2021 6:58 PM
68	A lot of large trucks going through town.	6/23/2021 4:01 PM
69	Traffic	6/23/2021 1:40 PM
70	Lack of bike lane. Low hanging branches on side walk.	6/23/2021 1:33 PM
71	Better enforcement of the speed limit on S. Tomahawk Avenue from Putnam Street to Hwy E. Scary stretch for bikers and walkers (sidewalk ends a block before the bridge). Heavy car/truck/suv and semi traffic, and UTVs now, too.	6/23/2021 1:27 PM
72	Between logging trucks, UTVs, motorcycles, and regular traffic, I would not be likely to bike through town, even if there is a small dedicated bike lane on the side of the street. A lot of tourists don't have much regard for locals.	6/23/2021 1:22 PM
73	Inattentive elderly drivers	6/23/2021 1:00 PM
74	I wish i felt more safe to allow my kids to bike around town	6/23/2021 12:49 PM

Q6 What would you like to see in Tomahawk that would help you to walk or bike more often? (Choose all that apply.)

Answered: 133 Skipped: 15



ANSWER CHOICES	RESPONSES	
Biking routes.	48.87%	65
Paved shoulders on highways outside of Tomahawk.	43.61%	58
Off-street paths.	42.86%	57
Sidewalks (add new ones or fix broken ones).	39.85%	53
Walking routes.	36.84%	49
Motorists sharing the road better.	33.08%	44
Bike lanes.	33.08%	44
more flashing light crosswalks (like at 4th & Lincoln - Washington Park)	24.81%	33
Bike racks at destinations.	24.06%	32
Other (please specify)	16.54%	22
Nothing needed.	6.77%	9
Various biking education.	4.51%	6
Some way of constant encouragement (e.g., pedometer, digital feedback, etc.)	4.51%	6
Total Respondents: 133		

#	OTHER (PLEASE SPECIFY)	DATE
1	Longer connected bike trails.	7/26/2021 9:16 AM
2	It would be nice to have a clearly marked route to Bradley Park for walking or bicycling.	7/25/2021 2:11 PM
3	Possibly adding a safety button along walk ways that people can press, notifying the police, if they feel unsafe or are in danger. They have these buttons at college and I think would be good way of keeping people safe when biking, running or walking alone. Also more police watching popular walking/biking areas would help	7/23/2021 8:45 PM
4	Reduced speed/flashing light markers on Wisconsin Ave (Main St) during high tourism times, like during the summer.	7/17/2021 1:24 AM
5	Hands down paved shoulders on highways outside of Tomahawk (Hwy E)!!!	7/15/2021 11:13 PM
6	More biker education to use bike lanes correctly and stay off side"WALKS"!	7/15/2021 10:46 AM
7	A paved bike path similar to Steven's point. Further off the road-- similar to hiyawatha but paved	7/15/2021 5:18 AM
8	Easy access on and off sidewalks. There are barely any ramps to access the sidewalks. Most have curbs. This is not handicap friendly, stroller, or bike friendly.	7/14/2021 11:30 PM
9	Maintenance and publicity for what we already have. There is a great trail system in Bradley Park but one volunteer can’t keep up with all the damage from storms, vandalism, etc.	7/14/2021 8:01 PM
10	Drivers are rude, they do not stop for people in crosswalks. Add to that too many people drink and drive you take your life in your hands when you go for a walk or bike.	7/14/2021 7:46 PM
11	No one uses the flashing light at 4th and Lincoln. Didn’t know that it was operational yet as there is lack of communication in this town since the news paper changed ownership.	7/14/2021 7:44 PM
12	I would rather bike away from traffic.	7/14/2021 4:14 PM
13	See above question 5 on needed sidewalk on Bradley Farm road but additionally a side walk on King Road where turn on backside of elementary school.	7/4/2021 6:55 AM

14	Driver awareness education Biker awareness to also follow vehicle rules. Bikers need to stop at the stop signs also .	7/1/2021 9:20 AM
15	repair stations education and signage for road sharers	7/1/2021 8:16 AM
16	I do also see a lot of cars not stopping for pedestrians or bikes who are teying to cross. People just keep driving by while these people sit there and wait to cross safely.	6/30/2021 10:15 PM
17	I'm not sure there is a solution for biking downtown. Can't be on the sidewalks, but it's downright dangerous to be riding down the street!	6/28/2021 3:31 PM
18	Again, trails need to be mowed more	6/28/2021 9:03 AM
19	Some communities encourage biking and walking. We do a good job along the River with that trail, better for walking than biking, not much room to pass. Extend the trail to downtown and even out to Bradley Park.	6/26/2021 12:13 PM
20	Blacktop trails	6/26/2021 8:07 AM
21	Frequent mowing/brushing.	6/25/2021 10:50 AM
22	On the main trail (just west of 4th st) there are too many 4 wheelers where I don't feel safe. I know they're not allowed but people take them on there anyways. Even south of cc they just go around the boulder, it's very frustrating. And it's frequent enough that I've stopped using the trail.	6/24/2021 7:17 PM

Q7 (Optional) Any comments about what would help you walk or bike more?

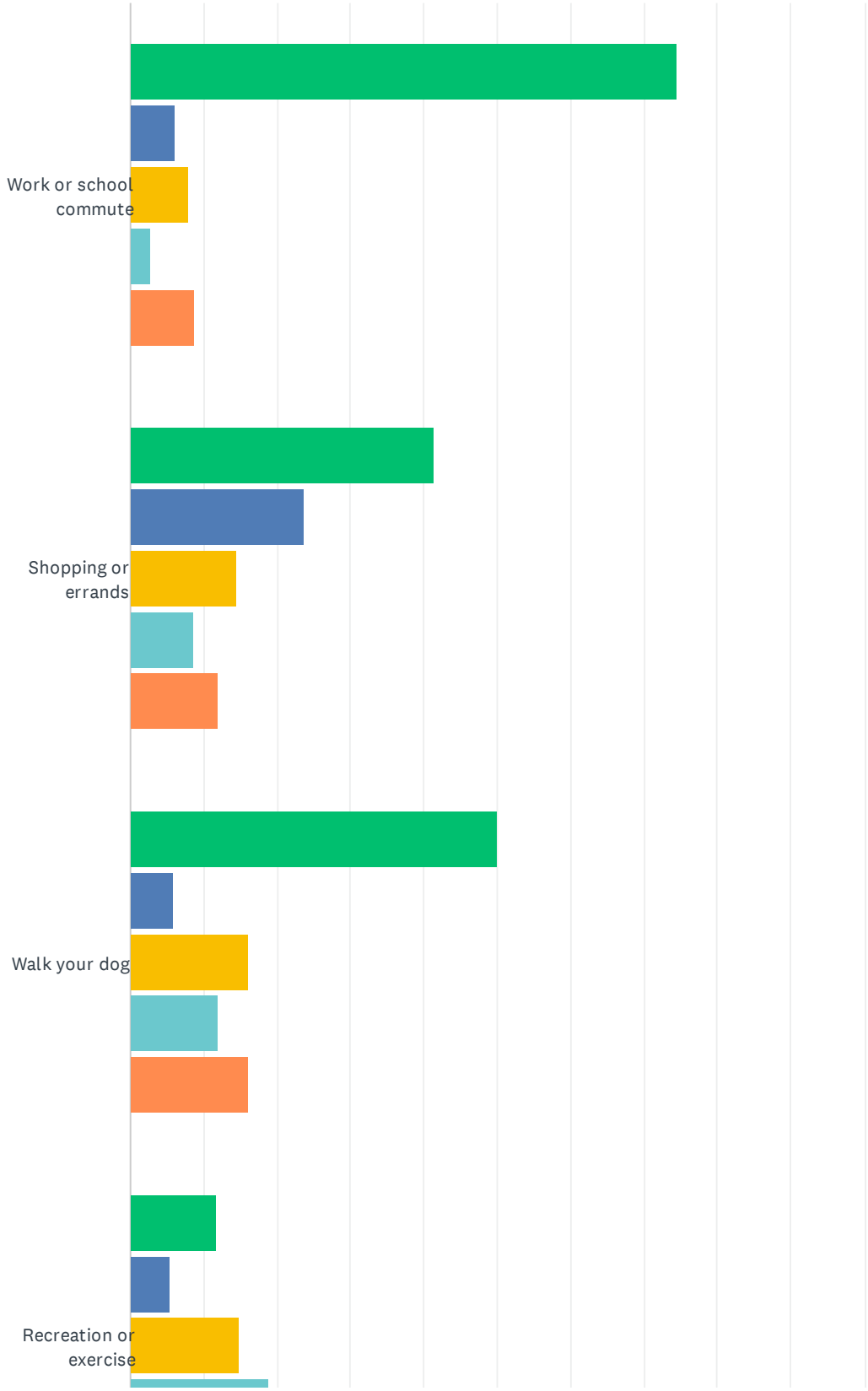
Answered: 35 Skipped: 113

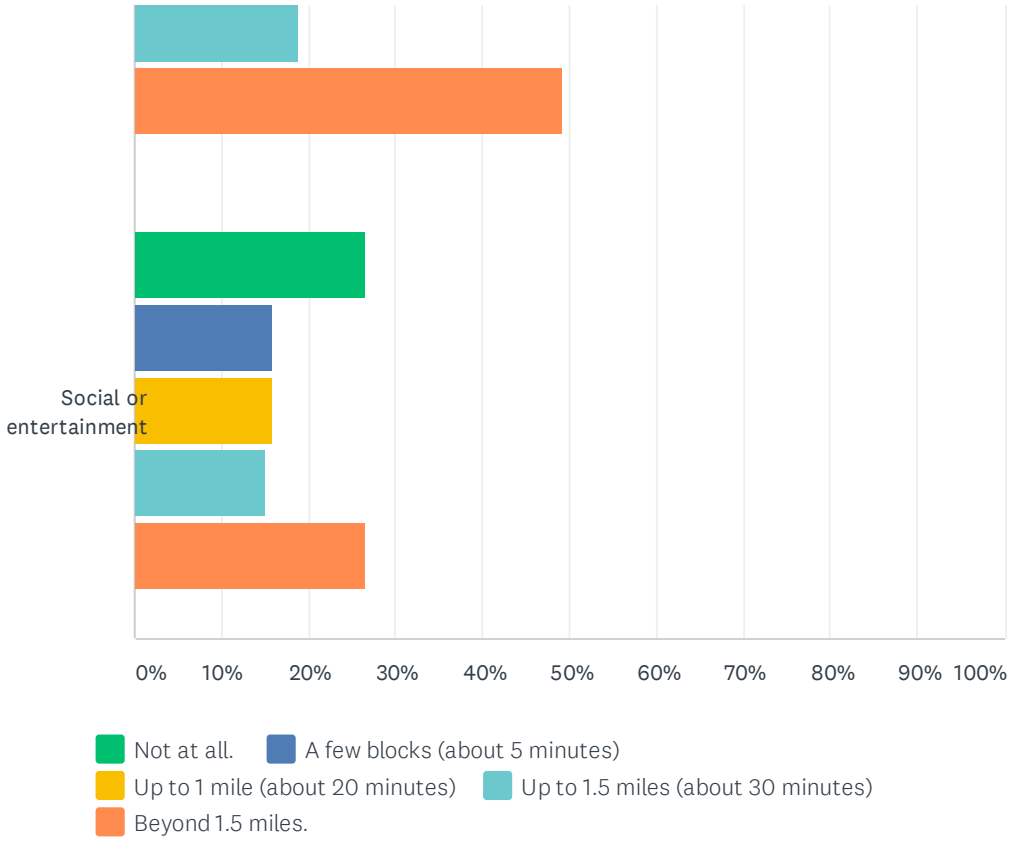
#	RESPONSES	DATE
1	We often drive to other cities to ride our bikes. Which is sad for Tomahawk because when we bike in other towns, we always spend money. We eat lunch or dinner and go into local shops. We find that other surrounding towns support the safety of biking as well as bike lanes and bike trails make it safer.	7/26/2021 9:16 AM
2	There are some blind spots (particularly near the little bridges) on the trail between DQ and the Hiawatha Trail trestle where you can't see whether someone is coming toward you.	7/25/2021 2:11 PM
3	Unfortunately the development of vertigo is keeping me off my bike.	7/23/2021 10:05 PM
4	Dedicated bike routes through town and safe scenic paths for and recreation and exercise.	7/17/2021 1:24 AM
5	Better roads	7/15/2021 10:46 AM
6	Safe area to do so and take my children with	7/15/2021 5:18 AM
7	I rarely taken my younger kids biking in town due to the poor sidewalk conditions. Safe paths and sidewalks would encourage more use of our bikes.	7/14/2021 11:30 PM
8	Need bike lanes	7/14/2021 10:47 PM
9	As said in previous comment above, safe access from County U to a trail.	7/14/2021 10:36 PM
10	I need an easier way to transport my bike to bike trails. I'd also enjoy the trail more if it continued past prairie rapids road by the nokomis town hall	7/14/2021 10:11 PM
11	Better paved bike trails like the one between Manitowish Waters and St Germaine	7/14/2021 9:04 PM
12	Only thing that’s ever kept me from doing this more is the lack of maintenance.	7/14/2021 8:01 PM
13	There is no enforcement of pedestrians having the right of way in cross walks and that includes police officers not stopping for pedestrians so.	7/14/2021 7:44 PM
14	maybe a walking group for the out of shape people	7/14/2021 5:06 PM
15	Community wellness encouragement programs. - starting a new habit - over coming procrastination - business involvement with their staff - benefits of parents mental well-being improvement - increase quality of family togetherness	7/1/2021 9:20 AM
16	Courtesy of drivers.	6/30/2021 2:27 PM
17	Motorists being truly educated on pedestrian and biking laws.	6/28/2021 3:31 PM
18	I'd probably walk/bike in Tomahawk more if the local rednecks in their pickups wouldn't rev up their engines up or "roll coal" at me while using the sidewalks.	6/27/2021 8:26 PM
19	Add biking route to meet up with the Minocqua trail system without having to ride on the road.	6/26/2021 10:33 PM
20	Potentially having more monitoring of parks, paths, and trails. Additional garbage cans, enforcing littering fines, organize a community trash pickup day.	6/26/2021 10:28 PM
21	I live to far out of town. Need to bring bike to town to ride.	6/26/2021 4:56 PM
22	Easier way to cross 4 th street. The tunnel is good but not convenient to use when biking. Too many people walking by Dairy Queen and the park to easily use.	6/26/2021 12:13 PM
23	Connect to other trails for longer options. Bike lanes on cc and 86.	6/26/2021 8:07 AM
24	Better sidewalk conditions	6/26/2021 7:24 AM

25	Paved walking/ biking trails. Like Boulder junction.	6/26/2021 6:45 AM
26	Roadways : wider shoulders if possible, bike lanes don't seem to have the same effect in rural areas. Gravel pathways : keep motorized vehicles off the trail. It's hard to have a trail that serves both purposes. And if the city doesn't want to actually reprimand persons who ride their vehicles on the trail then they should just allow them.	6/24/2021 7:17 PM
27	Speed of traffic on Theiler Dr	6/24/2021 12:48 PM
28	Question #6 is where the issues are at!	6/24/2021 12:48 PM
29	Any improvement on what we already have in the area.	6/24/2021 11:04 AM
30	Need more mountain bike trails	6/24/2021 4:52 AM
31	Maybe a biking center along the path by the library with air and outside water station!	6/23/2021 5:55 PM
32	Bike lanes!!!!	6/23/2021 1:33 PM
33	I like to rollerblade and at times the sidewalks are so bad I can’t successfully skate.	6/23/2021 1:09 PM
34	could the city help or invest in some infrastructure to develop and maintain the Bradley park trails for hiking and biking?	6/23/2021 12:49 PM
35	It would be nice to have printed maps of bike and pedestrian trails.	6/23/2021 12:48 PM

Q8 What distance do you walk one-way for the following trips in Tomahawk?

Answered: 131 Skipped: 17

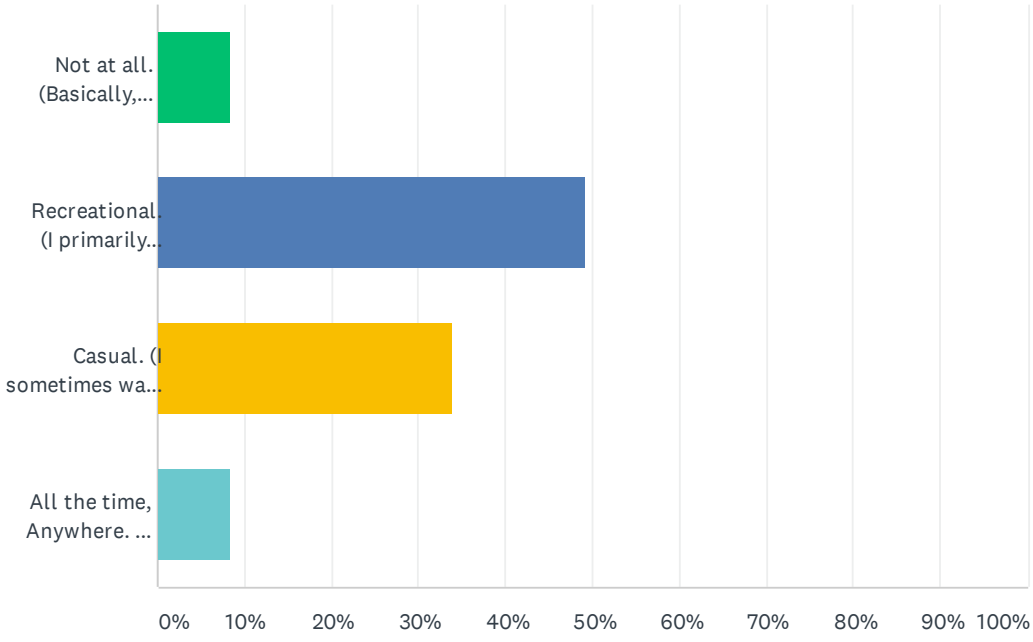




	NOT AT ALL.	A FEW BLOCKS (ABOUT 5 MINUTES)	UP TO 1 MILE (ABOUT 20 MINUTES)	UP TO 1.5 MILES (ABOUT 30 MINUTES)	BEYOND 1.5 MILES.	TOTAL
Work or school commute	74.56% 85	6.14% 7	7.89% 9	2.63% 3	8.77% 10	114
Shopping or errands	41.53% 49	23.73% 28	14.41% 17	8.47% 10	11.86% 14	118
Walk your dog	50.00% 59	5.93% 7	16.10% 19	11.86% 14	16.10% 19	118
Recreation or exercise	11.72% 15	5.47% 7	14.84% 19	18.75% 24	49.22% 63	128
Social or entertainment	26.67% 32	15.83% 19	15.83% 19	15.00% 18	26.67% 32	120

Q9 What type of pedestrian are you? (Choose one.)

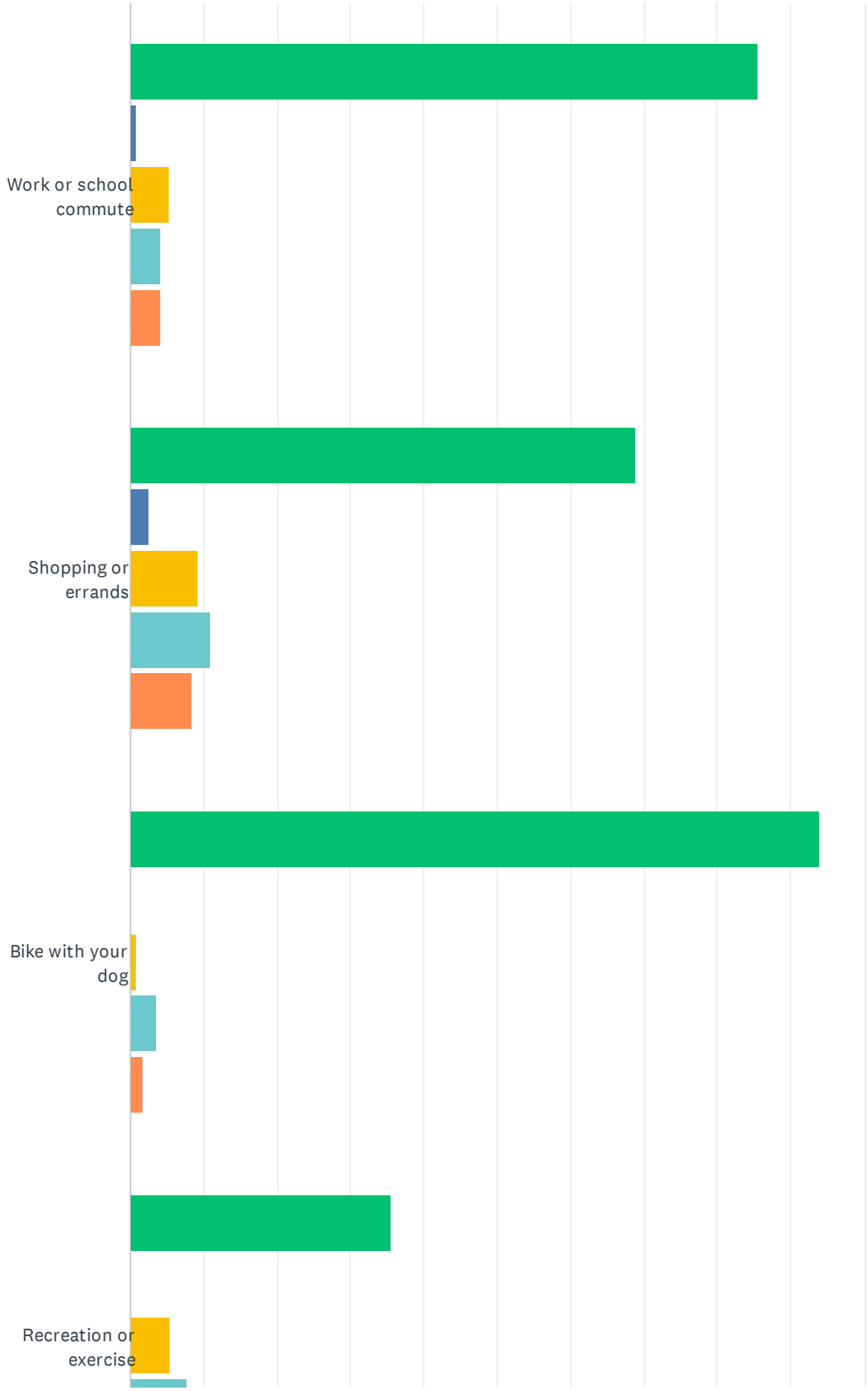
Answered: 130 Skipped: 18

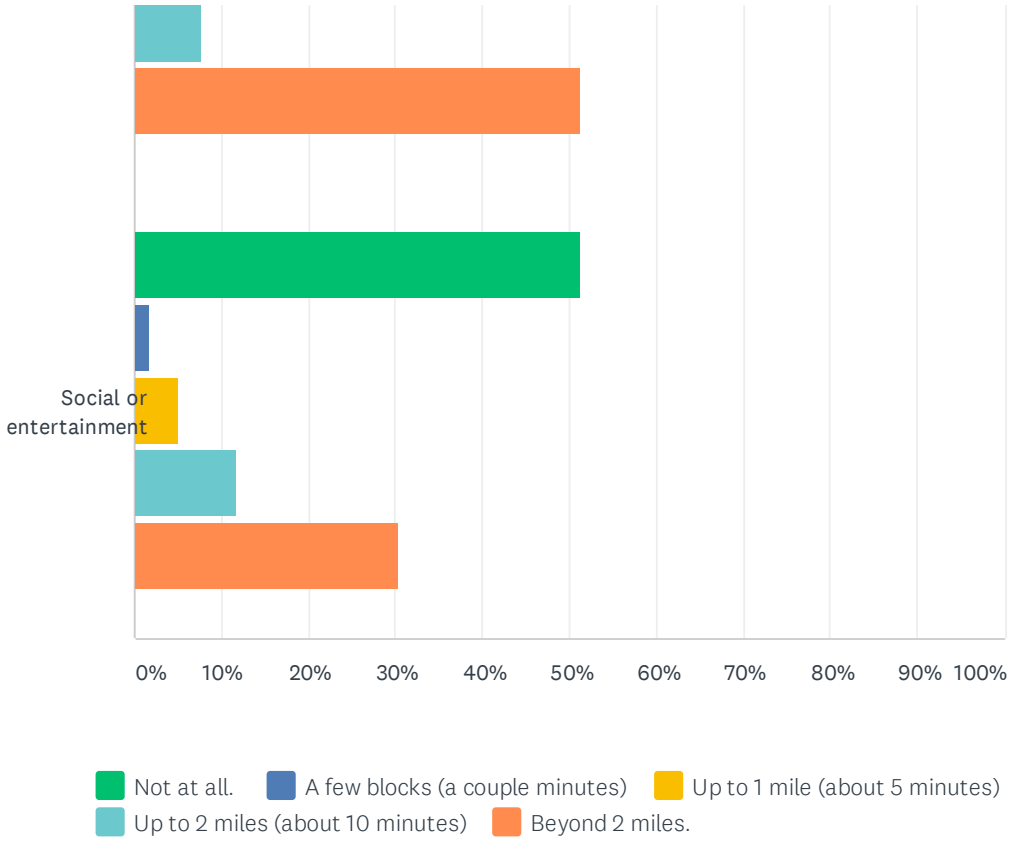


ANSWER CHOICES	RESPONSES	
Not at all. (Basically, only from my vehicle to a building and back again.)	8.46%	11
Recreational. (I primarily walk for recreation or exercise.)	49.23%	64
Casual. (I sometimes walk to the store, for fun or exercise, or to walk the dog.)	33.85%	44
All the time, Anywhere. (I walk for most trips, including to work or school, shopping, and for fun & exercise.)	8.46%	11
TOTAL		130

Q10 What distance do you bike one-way for the following trips in Tomahawk?

Answered: 130 Skipped: 18

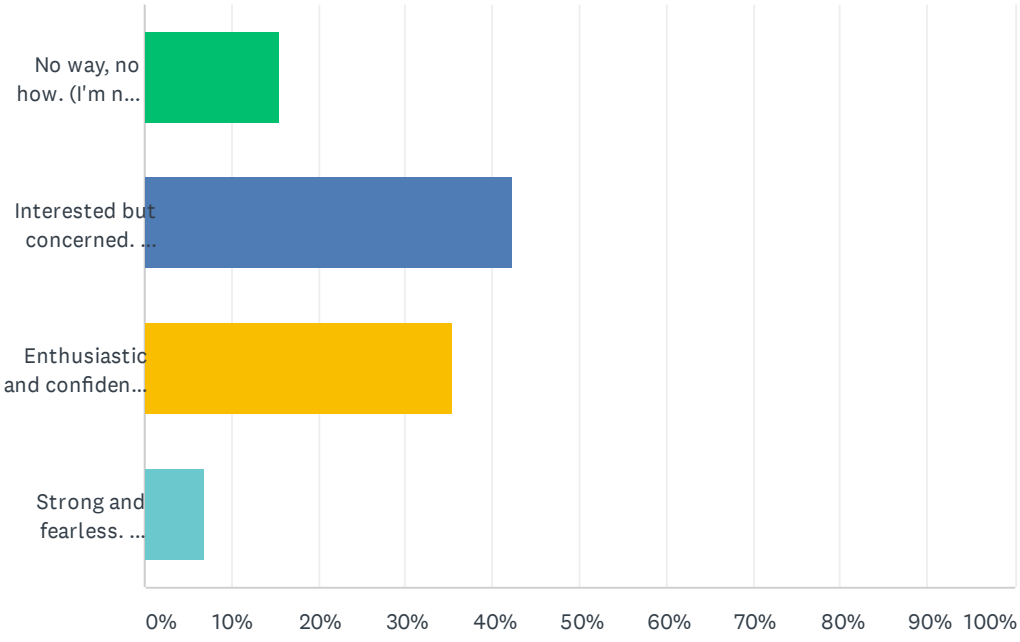




	NOT AT ALL.	A FEW BLOCKS (A COUPLE MINUTES)	UP TO 1 MILE (ABOUT 5 MINUTES)	UP TO 2 MILES (ABOUT 10 MINUTES)	BEYOND 2 MILES.	TOTAL
Work or school commute	85.47% 100	0.85% 1	5.13% 6	4.27% 5	4.27% 5	117
Shopping or errands	68.91% 82	2.52% 3	9.24% 11	10.92% 13	8.40% 10	119
Bike with your dog	93.86% 107	0.00% 0	0.88% 1	3.51% 4	1.75% 2	114
Recreation or exercise	35.66% 46	0.00% 0	5.43% 7	7.75% 10	51.16% 66	129
Social or entertainment	51.26% 61	1.68% 2	5.04% 6	11.76% 14	30.25% 36	119

Q11 What type of bicyclist are you? (Choose one.)

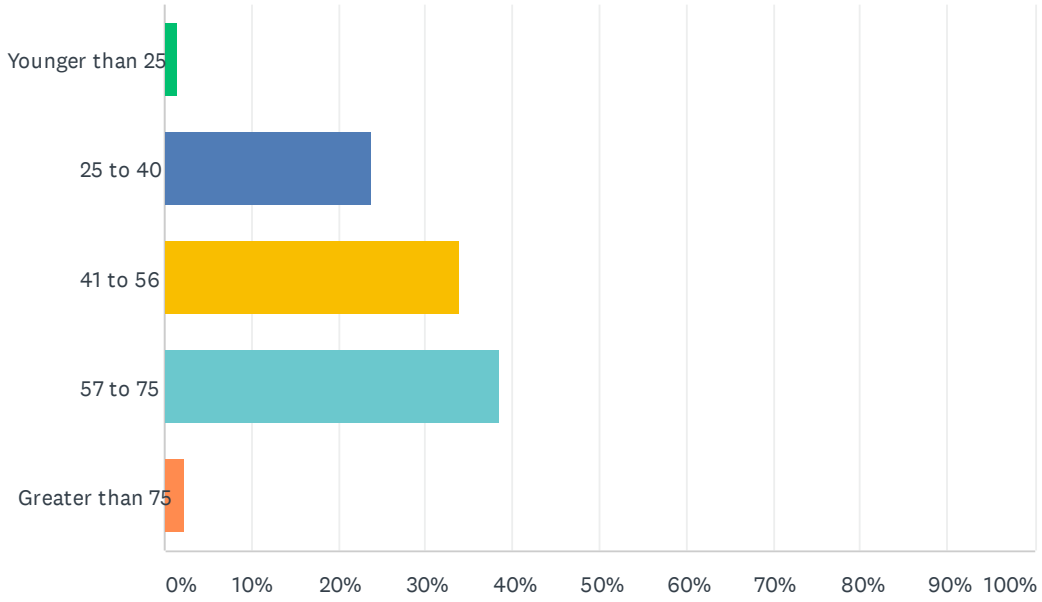
Answered: 130 Skipped: 18



ANSWER CHOICES	RESPONSES	
No way, no how. (I'm not interested in biking at all, not even for recreation.)	15.38%	20
Interested but concerned. (I like riding, but don't do it regularly. I'm generally concerned that my route is not safe to ride, so I don't ride often. I definitely do not ride when the weather is bad.)	42.31%	55
Enthusiastic and confident. (I feel comfortable sharing the road with motor vehicles, but I prefer to ride on separate facilities like bike lanes. I may or may not ride in inclement weather.)	35.38%	46
Strong and fearless. (I am confident in my abilities and will ride regardless of roadway conditions, amount of traffic, or inclement weather.)	6.92%	9
TOTAL		130

Q12 What is your age?

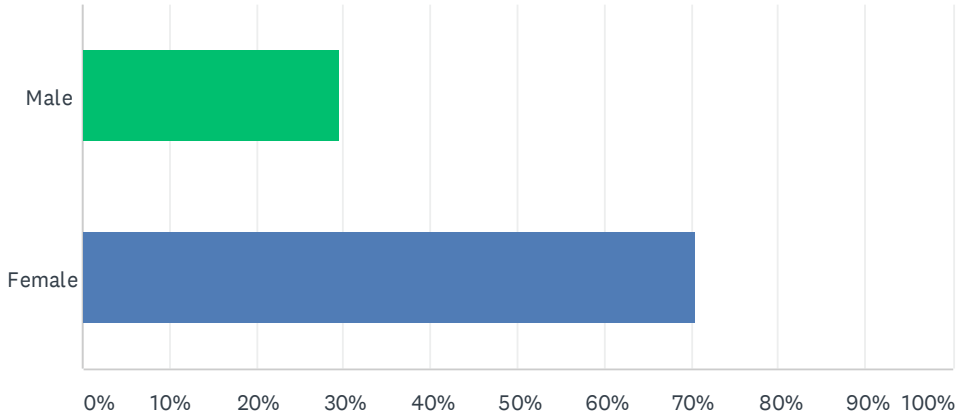
Answered: 130 Skipped: 18



ANSWER CHOICES	RESPONSES	
Younger than 25	1.54%	2
25 to 40	23.85%	31
41 to 56	33.85%	44
57 to 75	38.46%	50
Greater than 75	2.31%	3
TOTAL		130

Q13 What is your gender?

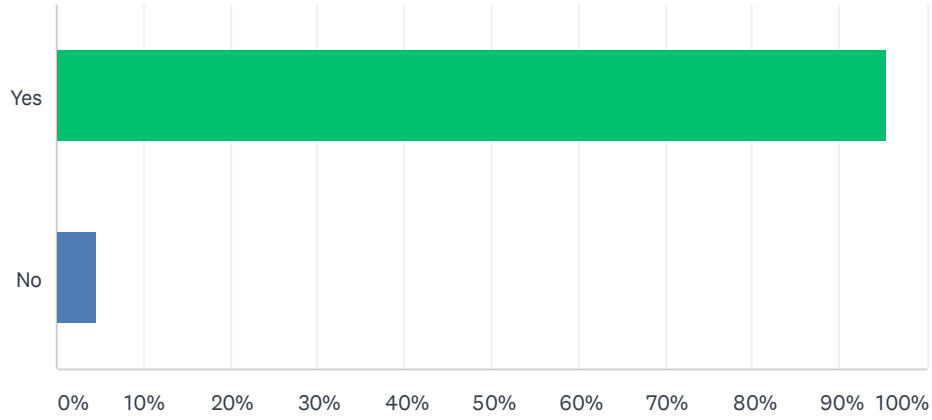
Answered: 129 Skipped: 19



ANSWER CHOICES	RESPONSES	
Male	29.46%	38
Female	70.54%	91
TOTAL		129

Q14 Do you live in or own a summer home in Tomahawk ?

Answered: 130 Skipped: 18



ANSWER CHOICES	RESPONSES	
Yes	95.38%	124
No	4.62%	6
TOTAL		130

#	IF NO, THEN PLEASE LIST YOUR HOME ZIP CODE:	DATE
	There are no responses.	

Q15 Please list the number from the map below in the zone where you live (or own a summer home):

Answered: 118 Skipped: 30

#	RESPONSES	DATE
1	5	7/26/2021 9:17 AM
2	3	7/25/2021 2:15 PM
3	1	7/25/2021 8:00 AM
4	3	7/24/2021 12:45 PM
5	1	7/24/2021 8:41 AM
6	1	7/23/2021 10:07 PM
7	3	7/23/2021 8:46 PM
8	5	7/23/2021 8:08 PM
9	5	7/23/2021 4:58 PM
10	3	7/23/2021 12:33 PM
11	1	7/22/2021 3:58 PM
12	1	7/20/2021 8:10 PM
13	2	7/17/2021 8:12 PM
14	5	7/17/2021 1:27 AM
15	5	7/16/2021 11:05 AM
16	5	7/15/2021 11:17 PM
17	5	7/15/2021 11:11 PM
18	5	7/15/2021 1:04 PM
19	3	7/15/2021 12:25 PM
20	5	7/15/2021 11:45 AM
21	5	7/15/2021 11:13 AM
22	1	7/15/2021 8:02 AM
23	5	7/15/2021 8:02 AM
24	5	7/15/2021 7:00 AM
25	5	7/15/2021 6:59 AM
26	5	7/15/2021 6:19 AM
27	1	7/15/2021 6:10 AM
28	3	7/15/2021 5:20 AM
29	5	7/15/2021 4:49 AM
30	3	7/14/2021 11:33 PM
31	2	7/14/2021 10:50 PM

32	5	7/14/2021 10:40 PM
33	5	7/14/2021 10:14 PM
34	5	7/14/2021 9:26 PM
35	5	7/14/2021 9:06 PM
36	1	7/14/2021 8:46 PM
37	5	7/14/2021 8:41 PM
38	5	7/14/2021 8:27 PM
39	5	7/14/2021 8:10 PM
40	1	7/14/2021 8:04 PM
41	1	7/14/2021 7:56 PM
42	1	7/14/2021 7:48 PM
43	1	7/14/2021 7:45 PM
44	5	7/14/2021 6:46 PM
45	3	7/14/2021 5:36 PM
46	5	7/14/2021 5:08 PM
47	5	7/14/2021 4:46 PM
48	5	7/14/2021 4:17 PM
49	3	7/14/2021 3:04 PM
50	5	7/14/2021 3:04 PM
51	5	7/14/2021 2:44 PM
52	1	7/14/2021 2:03 PM
53	5	7/14/2021 1:57 PM
54	5	7/14/2021 1:41 PM
55	5	7/14/2021 1:35 PM
56	1	7/7/2021 9:10 PM
57	3	7/4/2021 6:57 AM
58	3	7/1/2021 9:25 AM
59	3	7/1/2021 8:17 AM
60	2	7/1/2021 7:55 AM
61	3	7/1/2021 6:54 AM
62	5	6/30/2021 10:17 PM
63	5	6/30/2021 8:40 AM
64	2	6/30/2021 5:20 AM
65	5	6/28/2021 3:34 PM
66	5	6/28/2021 3:28 PM
67	5	6/28/2021 2:23 PM
68	3	6/28/2021 9:05 AM
69	5	6/27/2021 9:54 PM

70	1	6/27/2021 8:30 PM
71	3	6/26/2021 11:04 PM
72	3	6/26/2021 10:35 PM
73	1	6/26/2021 10:31 PM
74	3	6/26/2021 6:49 PM
75	3	6/26/2021 12:16 PM
76	2	6/26/2021 11:48 AM
77	5	6/26/2021 10:55 AM
78	5	6/26/2021 8:53 AM
79	3	6/26/2021 8:33 AM
80	2	6/26/2021 8:16 AM
81	5	6/26/2021 8:11 AM
82	5	6/26/2021 8:09 AM
83	1	6/26/2021 8:06 AM
84	5	6/26/2021 8:04 AM
85	5	6/26/2021 7:53 AM
86	1	6/26/2021 7:43 AM
87	4	6/26/2021 7:06 AM
88	5	6/26/2021 6:57 AM
89	3	6/26/2021 6:47 AM
90	2	6/25/2021 3:42 PM
91	3	6/25/2021 10:52 AM
92	5	6/24/2021 9:00 PM
93	5	6/24/2021 8:32 PM
94	5	6/24/2021 7:35 PM
95	2	6/24/2021 7:22 PM
96	5	6/24/2021 2:15 PM
97	3	6/24/2021 12:50 PM
98	3	6/24/2021 12:49 PM
99	5	6/24/2021 12:02 PM
100	4	6/24/2021 11:07 AM
101	5	6/24/2021 8:19 AM
102	1	6/24/2021 4:54 AM
103	2	6/23/2021 9:48 PM
104	3	6/23/2021 9:47 PM
105	5	6/23/2021 7:01 PM
106	2	6/23/2021 5:58 PM
107	5	6/23/2021 4:03 PM

108	5	6/23/2021 3:15 PM
109	4	6/23/2021 1:35 PM
110	5	6/23/2021 1:33 PM
111	4	6/23/2021 1:29 PM
112	5	6/23/2021 1:23 PM
113	1	6/23/2021 1:10 PM
114	2	6/23/2021 1:01 PM
115	1	6/23/2021 12:52 PM
116	5	6/23/2021 12:49 PM
117	1	6/23/2021 12:45 PM
118	5	6/23/2021 12:44 PM

ATTACHMENT D

Bicycle Parking Guidelines

From: Association of Pedestrian and Bicycle Professionals (APBP)
One page summary sheet.

And from City of Baltimore

Bicycle Parking Guidelines

A summary of recommendations from the Association of Pedestrian and Bicycle Professionals

Bicycle Parking Design

- Required spaces shall be at least 2 feet by 6 feet.
- An access aisle of at least 5 feet shall be provided in each facility.
- Racks shall be situated to allow a minimum of 2 feet between adjacent bike parking stalls.
- Spaces shall have a vertical clearance of at least 80 inches.

Bicycle Rack Design

Structures that require a user-supplied locking device:

- must accommodate U-shaped locking devices;
- support the bike frame at two points;
- be securely anchored to the ground or the building structure; and
- be designed and maintained to be mud and dust free.

Bicycle Rack Location

- Racks should be located in a clearly designated safe and convenient location.
- Racks should be designed and located to be harmonious with the surrounding environment.
- Racks should be at least as convenient as the majority of auto parking spaces provided.

To learn more about bicycle parking guidelines, visit the Association of Pedestrian and Bicycle Professionals at: www.apbp.org.

These bicycle racks do NOT meet the design guidelines:

Grid or Fence Style Racks

Wave or Ribbon Style Racks

These bicycle racks DO meet the design guidelines:

Inverted-U Style Racks

Angled Wave Style Racks

Freestanding Style Racks

The above images are examples only. NCWRPC does not endorse any particular bicycle rack manufacturers.

If you have questions about whether a particular bicycle parking rack you are considering using meets these requirements, please contact NCWRPC planner **Fred Heider**, AICP at **fheider@ncwrpc.org**.

PLACEMENT OF BICYCLE PARKING RACKS

RACK PLACEMENT RULES:

5' from:
Fire hydrant
Crosswalk

4' from:
Loading zone
Bus stop
Bus shelter
Bus bench

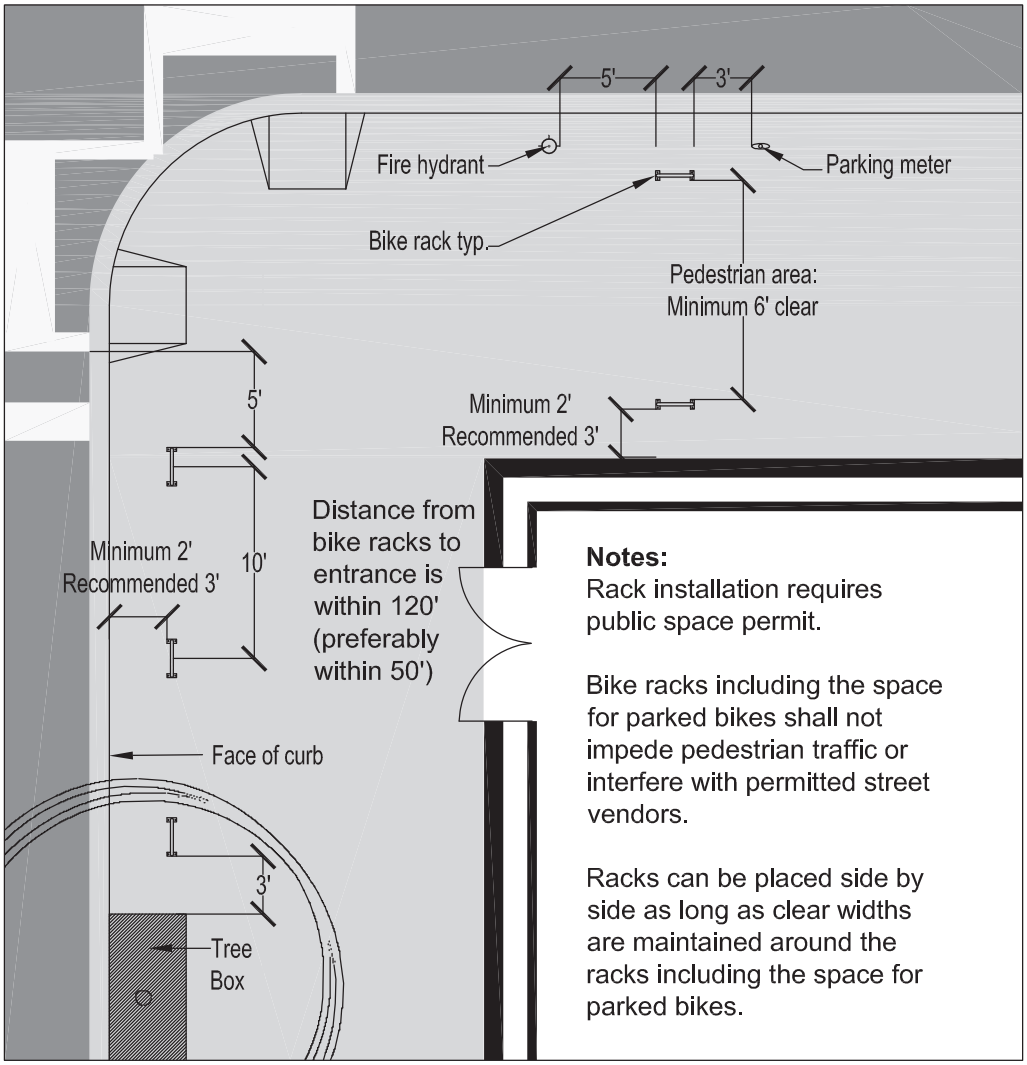
Min. 2', Rec. 3' from:
Curb

3' from:
Parking meter
Newspaper rack
US mailbox
Light pole
Sign pole
Driveway
Tree space
Trash can
Other street furniture
Other sidewalk obstructions

WALL SETBACKS

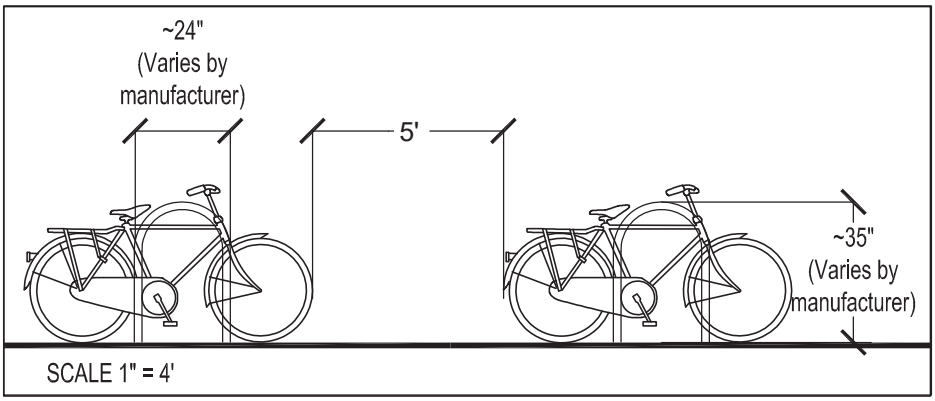
For racks set parallel to a wall:
Min. 24", Rec. 36"

For racks set perpendicular to a wall:
Min. 28", Rec. 36"

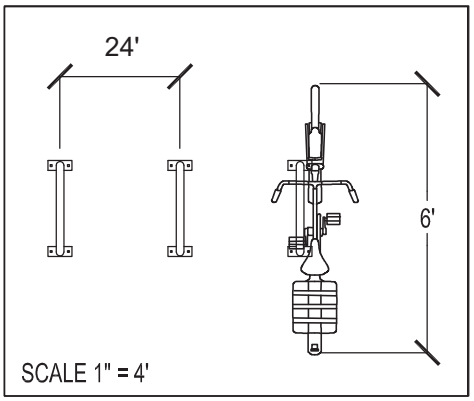


SCALE 1" = 10'

SIDE VIEW



SIDE BY SIDE RACKS:



City of Baltimore Department of Transportation Bicycle Facility Design Guide	REVISED: Aug. 2005 SCALE: AS NOTED	4

ATTACHMENT E

Washington Park – Possible Improvements

Compiled by: NCWRPC

Possible bicycle improvements at Washington Park

Figure 1 Bike Parking Layout

Airphoto source: Google

Install a bike repair station with air pump near bike parking in Washington Park.

▲ = bike repair station with air pump

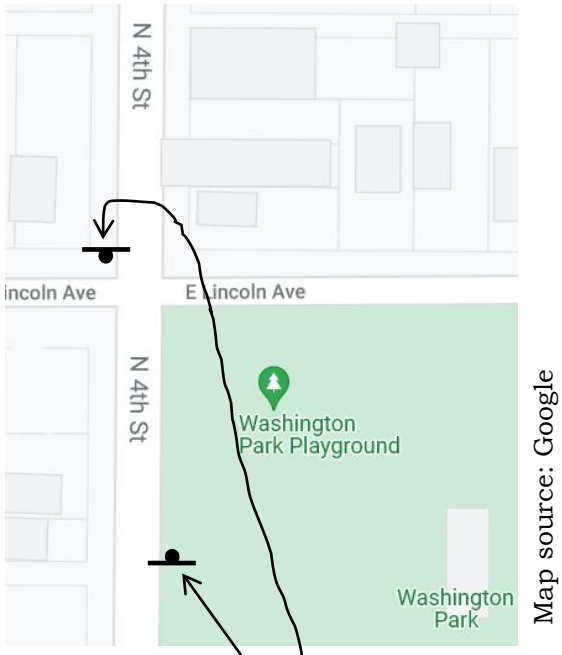
See **Figure 2** for how to advertise this repair station to bicyclists.

Initial bike racks to install, then add others as demand grows.

= bike corral rack

See **Figure 3** for parking dimensions.

Figure 2 Bike Repair Signs

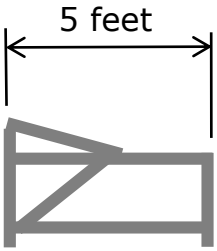


Map source: Google

Add this sign assembly to N. 4th Street to remind bicyclists that this repair station exists.

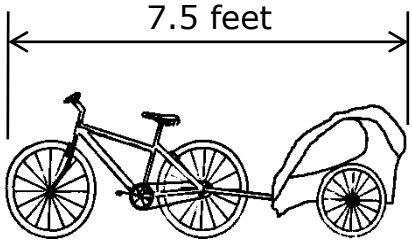
Sign source: Jami Stinson on Pinterest

Figure 3 Bike Parking Dimensions



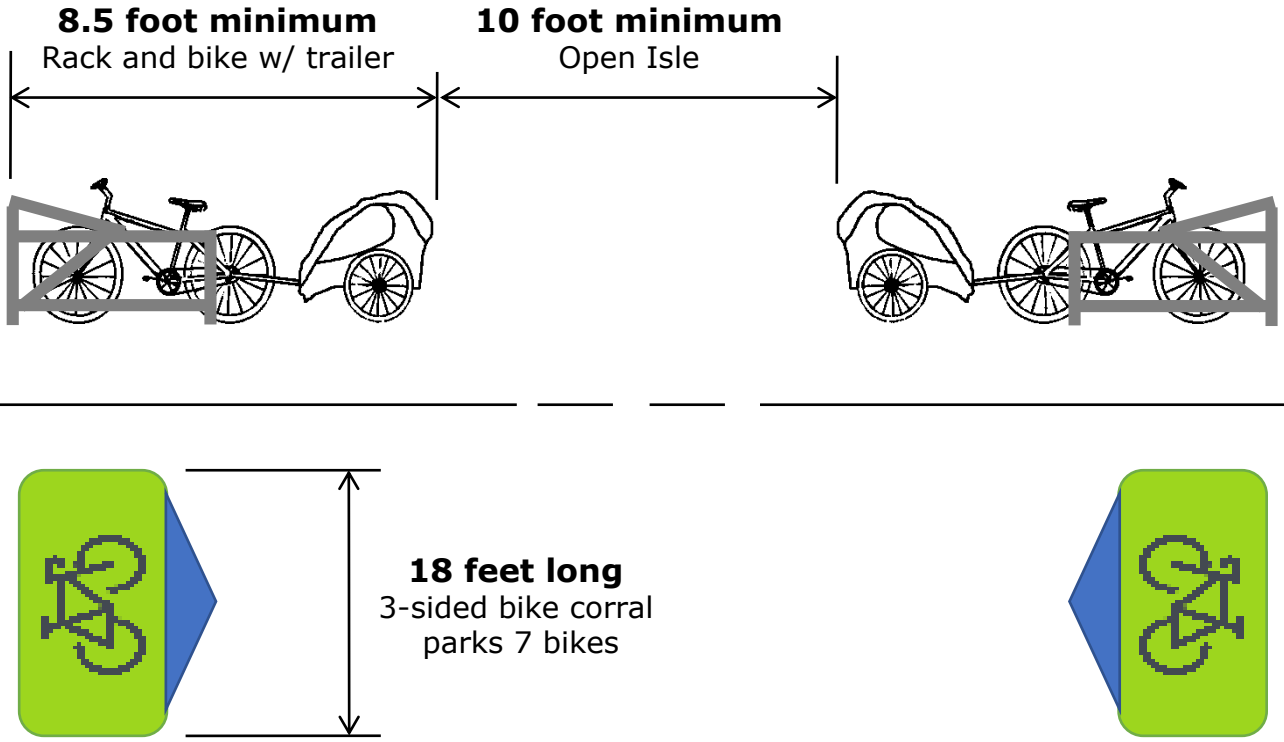
Bike corral rack
(3-sided rack that parks 7 bicycles)

Source: DERO



Bike and child trailer

Washington Park is centrally located in Tomahawk. If bike racks are installed, then bicycling parents with child trailers can be expected in addition to others who ride bikes without trailers. The bike racks and the isles must be spaced to allow all bikes to maneuver around the various bike lengths.



ATTACHMENT F

Lighting and Crosswalk Safety Countermeasures

From: Federal Highway Administration

U.S. Department of Transportation
Federal Highway Administration

OFFICE OF SAFETY

Proven Safety Countermeasures

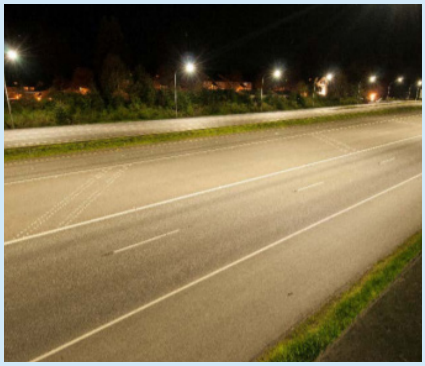
Safety Benefits:

Lighting can reduce crashes up to:

42%
for nighttime injury pedestrian crashes at intersections.[1]

33-38%
for nighttime crashes at rural and urban intersections.[1]

28%
for nighttime injury crashes on rural and urban highways.[1]



Source: WSDOT

For more information on this and other FHWA Proven Safety Countermeasures, please visit https://safety.fhwa.dot.gov/provencountermeasures/ and https://safety.fhwa.dot.gov/roadway_dept/night_visib/roadwayresources.cfm.

FHWA-SA-21-050

Lighting

The number of fatal crashes occurring in daylight is about the same as those that occur in darkness. However, the nighttime fatality rate is three times the daytime rate because only 25 percent of vehicle miles traveled (VMT) occur at night. At nighttime, vehicles traveling at higher speeds may not have the ability to stop once a hazard or change in the road ahead becomes visible by the headlights. Therefore, lighting can be applied continuously along segments and at spot locations such as intersections and pedestrian crossings in order to reduce the chances of a crash.

Adequate lighting (i.e., at or above minimum acceptable standards) is based on research recommending horizontal and vertical illuminance levels to provide safety benefits to all users of the roadway environment. Adequate lighting can also provide benefits in terms of personal security for pedestrians, wheelchair and other mobility device users, bicyclists, and transit users as they travel along and across roadways.

Applications

Roadway Segments

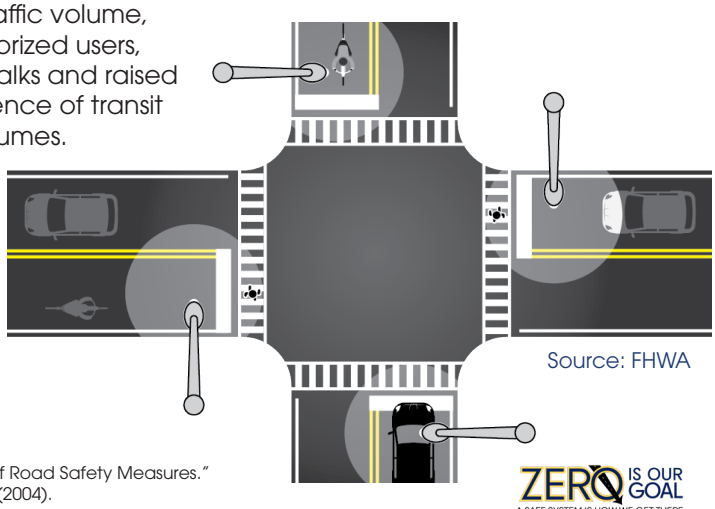
Research indicates that continuous lighting on both rural and urban highways (including freeways) has an established safety benefit for motorized vehicles.[1] Agencies can provide adequate visibility of the roadway and its users through the uniform application of lighting that provides full coverage along the roadway and the strategic placement of lighting where it is needed the most.

Intersections and Pedestrian Crossings

Increased visibility at intersections at nighttime is important since various modes of travel cross paths at these locations. Agencies should consider providing lighting to intersections based on factors such as a history of crashes at nighttime, traffic volume, the volume of non-motorized users, the presence of crosswalks and raised medians, and the presence of transit stops and boarding volumes.

Considerations

Most new lighting installations are made with breakaway features, shielded, or placed far enough from the roadway to reduce the probability and/or severity of fixed-object crashes. Modern lighting technology gives precise control with minimal excessive light affecting the nighttime sky or spilling over to adjacent properties. Agencies can equitably engage with underserved communities to determine where and how new and improved lighting can most benefit the community by considering their priorities, including eliminating crash disparities, connecting to essential neighborhood services, improving active transportation routes, and promoting personal safety.



Source: FHWA

1 Elvik, R. and Vaa, T., "Handbook of Road Safety Measures." Oxford, United Kingdom, Elsevier, (2004).

U.S. Department of Transportation
Federal Highway Administration

Crosswalk Visibility Enhancements

Poor lighting conditions, obstructions such as parked cars, and horizontal or vertical roadway curvature can reduce visibility at crosswalks, contributing to safety issues. For multilane roadway crossings where vehicle volumes are in excess of 10,000 Average Annual Daily Traffic (AADT), a marked crosswalk alone is typically not sufficient. Under such conditions, more substantial crossing improvements could prevent an increase in pedestrian crash potential.

Three main crosswalk visibility enhancements help make crosswalks and the pedestrians, bicyclists, wheelchair and other mobility device users, and transit users using them more visible to drivers. These include high-visibility crosswalks, lighting, and signing and pavement markings. These enhancements can also assist users in deciding where to cross. Agencies can implement these features as standalone or combination enhancements to indicate the preferred location for users to cross.

Safety Benefits:

High-visibility crosswalks can reduce pedestrian injury crashes up to:

40% [1]

Intersection lighting can reduce pedestrian crashes up to:

42% [2]

Advance yield or stop markings and signs can reduce pedestrian crashes up to:

25% [3]

High-visibility crosswalks

High-visibility crosswalks use patterns (i.e., bar pairs, continental, ladder) that are visible to both the driver and pedestrian from farther away compared to traditional transverse line crosswalks. They should be considered at all midblock pedestrian crossings and uncontrolled intersections. Agencies should use materials such as inlay or thermoplastic tape, instead of paint or brick, for highly reflective crosswalk markings.

Improved Lighting

The goal of crosswalk lighting should be to illuminate with positive contrast to make it easier for a driver to visually identify the pedestrian. This involves carefully placing the luminaires in forward locations to avoid a silhouette effect of the pedestrian.

Enhanced Signing and Pavement Markings

On multilane roadways, agencies can use "YIELD Here to Pedestrians" or "STOP Here for Pedestrians" signs 20 to 50 feet in advance of a marked crosswalk to indicate where a driver should stop or yield to pedestrians, depending on State law. To supplement the signing, agencies can also install a STOP or YIELD bar (commonly referred to as "shark's teeth") pavement markings.

In-street signing, such as "STOP Here for Pedestrians" or "YIELD Here to Pedestrians" may be appropriate on roads with two- or three-lane roads where speed limits are 30 miles per hour or less.

Source: FHWA

For more information on this and other FHWA Proven Safety Countermeasures, please visit https://safety.fhwa.dot.gov/provencountermeasures/ and https://safety.fhwa.dot.gov/ped_bike/step/docs/techSheet_VizEnhancemt2018.pdf.

FHWA-SA-21-049

1 Chen, L., C. Chen, and R. Ewing. The Relative Effectiveness of Pedestrian Safety Countermeasures at Urban Intersections - Lessons from a New York City Experience. (2012).
2 Elvik, R. and Vaa, T. Handbook of Road Safety Measures. Oxford, United Kingdom, Elsevier, (2004).
3 Zeeger et al. Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments, FHWA, (2017).

ATTACHMENT G

Bicycle Friendly Campground Guide

From: Adventure Cycling Association

Introduction

Campgrounds are well equipped to handle motorized visitors and RVs but may be unfamiliar with the idea of providing specific services and accommodations for people who arrive by bicycle. Adventure Cycling Association's *Guide to Bicycle Camping*[1] will help campground and park managers identify how bicycle camping can best fit with their existing services and accommodations to effectively serve cycling visitors.

Why Bicycle Camping?

Busy campgrounds are used to turning away motorized visitors who have the flexibility to drive elsewhere, but bicycle travelers don't have that luxury. After a full day of riding, they need to refuel and rest to prepare for the next day of riding, and often only need accommodations for one night.

Providing bicycle camping shows that your campground is committed to:

- **Welcoming cycling visitors** by providing amenities, policies, and services that are specific to their needs.
- **Ensuring that they won't be turned away** and left stranded after a long day of riding, even if the campground is full.
- **Providing a quality experience** for all visitors, no matter what mode they choose to travel by.

A cyclist pays $5 for an Oregon State Parks hiker/biker site.

Bicycle Camping Basics

How are cycling visitors different?

People who choose to travel by bicycle or on foot are self-powered, which makes getting to their destination part of the fun and the challenge. They are more vulnerable to unplanned factors such as weather, terrain, flat tires, illness, or injury. This can affect when and if they arrive at a campground as planned. The unpredictable nature of bike touring makes it less practical to make reservations in advance.

With no motorized support, visitors arriving by bicycle have limited alternatives if a campground is full, especially if other accommodations are more than a few miles away or there is limited daylight.

Welcoming visitors arriving by bicycle

Campgrounds can welcome bicycle travelers and avoid having to turn them away by taking two simple steps:

- **Providing bicycle campsites.** A bicycle campsite (also called hiker/biker or bike-in site) is a campsite specifically outfitted for people arriving by bicycle and, if applicable, other nonmotorized visitors like hikers and kayakers.
- **Implementing a no-turn-away policy or directive.** A no-turn-away policy or directive[2] guarantees an emergency camping space for bicycle travelers traveling solo or with a small, noncommercial group who arrive at a full campground without motorized support. A no-turn-away policy guarantees space for bike travelers only when a campground is full, and they otherwise have to occupy regular campsites, which typically aren't outfitted specifically for bicyclists.

Bicycle Campsites: A Small Footprint

"Hiker/bikers pay per person, making the site revenue on par with other sites when considered on a per-person basis, yet hiker/biker sites are often much less expensive and use far less land than other camping options."

– Oregon State Parks, 2014 Survey Report

What makes a bicycle campsite?

- **Nonreservable** — These sites should be nonreservable and set aside for bicyclists and other nonmotorized visitors only. Regular first-come, first-served campsites are not a substitute because motorized visitors have an advantage in being able to arrive early.
- **Shared site** — The space should be able to accommodate the peak number of touring cyclists typical for your area so that no cyclist would need to be turned away.
- **Minimal space and resources** — Bicyclists travel lightly and have a small footprint. Bicycle campsites don't require RV-sized parking spaces, hookups for generators, or giant tent spots, which saves on costs and reduces maintenance. A site that could fit one RV camper could fit multiple bicycle campers, particularly because bicycle campers often prefer shared sites.
- **Separate fee** – The fee charged should be a per-person fee based on the level of services provided (typically $5–10), which is usually less than other RV or tent sites.
- **Bicycle-specific amenities** – The amenities listed below require relatively small investment but improve bicycle travelers' camping experiences immensely. See page 7 for more information about these amenities.

A hiker/biker site at Oregon State Parks.

N. LEWIS, SHENANDOAH NATIONAL PARK

No-Turn-Away Policies: No Visitor Left Stranded

A no-turn-away policy typically allows for:

- **One-night accommodation for cyclists touring without motorized support**
- **Is not guaranteed for large or commercial tour groups if space is limited**
- **A fee consistent with the level of service provided**
- **At minimum a tent space and a place to park a bike**
- **Other amenities can be provided if possible**

A no-turn-away policy is recommended for all campgrounds, but is particularly necessary for campgrounds without bicycle campsites. A bicycle campsite is preferred because it is a shared site that should provide a no-turn-away function by accommodating the peak number of cycling visitors.

All no-turn-away bike camping policies are available to download at **adventurecycling.org/noturnaway**. For examples of no-turn-away policies, see page 29.

Make it official

Many park campgrounds "unofficially" don't turn away visitors arriving by bicycle, and it's common to think that a no-turn-away policy isn't necessary. However, we have heard from bicycle travelers who have been turned away from both campgrounds with policies and without them, so making an official written policy is critical to ensuring that it is followed consistently.

Why officially adopt a no-turn-away policy?

- It communicates the existence of the policy to the public as well as campground staff and hosts.
- It allows for consistent training and implementation of the policy.
- It can be referenced by bicycle travelers if it is not being implemented consistently.

Nuts and Bolts of Bicycle Camping

There are many practical and logistical considerations for implementing bicycle camping, including what kinds of amenities to provide and how to determine demand and location. These factors can vary, but this information will help you evaluate what will work best for your campground.

Amenities

Bicycle travelers are generally self-sufficient and prepared and need at minimum a place to set up their tent and park their bicycle. However, a few simple amenities can vastly improve their camping experience.

Bike Parking

Bike racks should provide two points of contact with the bike frame, not the wheel, to support the weight of a loaded bike.

Bike Repair Stations

Bike repair can include any or all of the elements shown, including the bike stand or clamp, tools, and floor pump.

Lockers

Lockers are most useful when they provide secure storage for food and valuables.

Group Picnic Area

At minimum, a covered group picnic area should be provided. If resources allow, some campgrounds provide an enclosed space with a fully equipped kitchen.

Electrical Outlets

Electrical outlets can be solar-powered and are best located either in a secure place (inside of lockers) or at another central place like the group picnic area.

Showers

Showers are always welcome at the end of a long day of cycling. They're not essential but are a popular amenity.

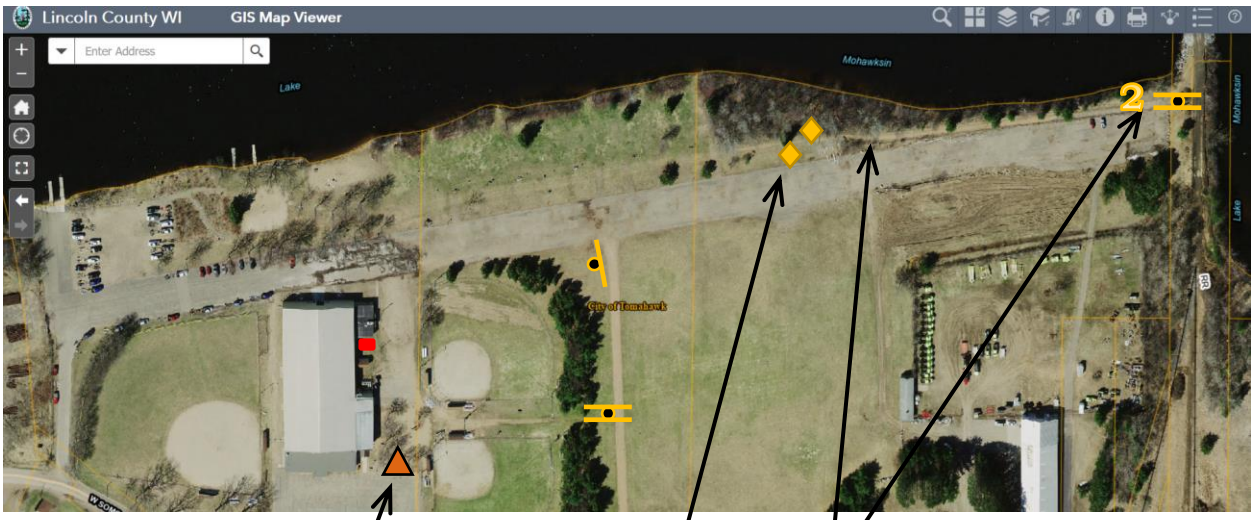
ATTACHMENT H

SARA Park – Possible Improvements

Compiled by: NCWRPC

Possible bicycling improvements at SARA Park

Figure 1 SARA Park Layout



Possible location for a bike repair station with air pump. More visitors to SARA Park's ball fields may need a minor repair than travelers, so this is a more centralized location.

▲ = (Optional) bike repair station with air pump

Direct Hiawatha Trail users to this repair station with **Figure 2** signs at these locations:

= one sided sign
= two sided sign

To provide the probably sporadic need for secure bike parking near the non-reservable bike camping, initially the City could attach custom bumper stickers to the cyclone fence's top rail facing water and runway:

May Lock Bike To Fence
City Logo

Bike racks may be needed in future.

Possible location for lockable bike lockers with in-locker electrical outlet if future demand supports having lockers.

▬ = (Optional) Consider 2 lockers initially. Also useful for campers that trailer their bikes when camping.

Possible location for non-reservable hiking/bicycling camping area sign. Choose one location.

◆ = Figure 3 sign

Figure 2A Bike Repair Sign

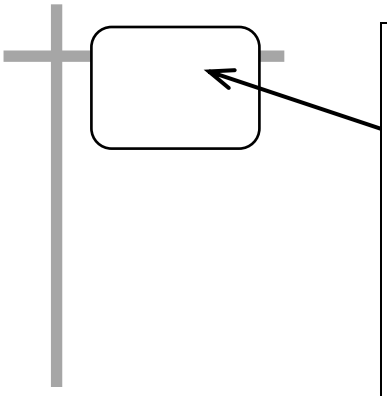
Sign source: Jami Stinson on Pinterest

Figure 2B Bike Repair Sign

At the "2" location on Figure 1, add this sign assembly.

Camping sign source: MUTCD

Figure 3 Non-Reservable Hiking/Bicycling Sign Example



Non-reservable hike-in or bicycle-in camping on surrounding grass area or in trees between this sign and waterfront.

May lock bike to cyclone fence.

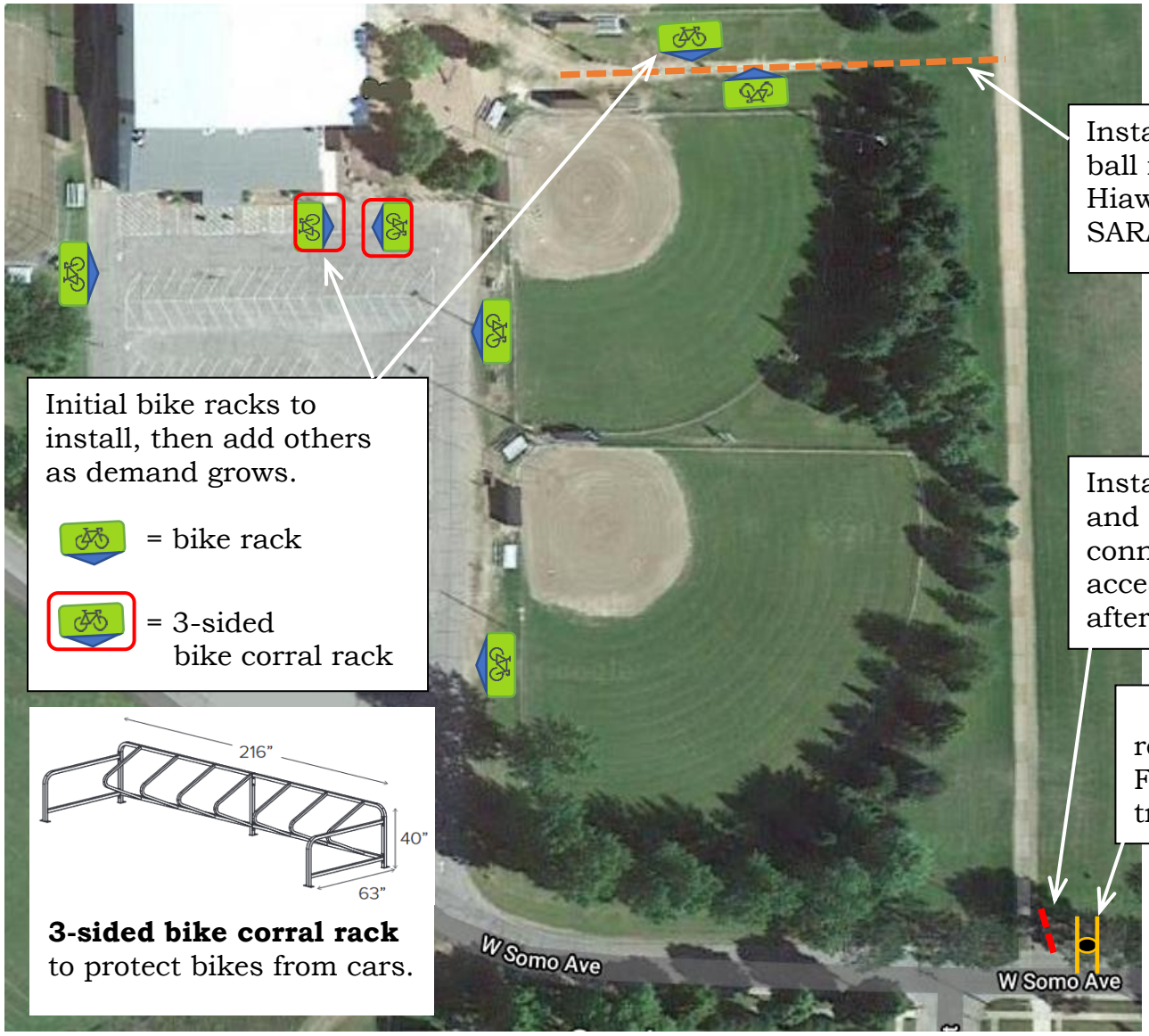
Please spend $5 per person at a local business.

One night stay only.

Contact City Hall staff for longer reservations.

All campground regulations apply.

Possible bike parking improvements at SARA Park



Install **path** between ball fields to connect Hiawatha Trail to SARA Park building.

Initial bike racks to install, then add others as demand grows.

= bike rack

= 3-sided bike corral rack

3-sided bike corral rack to protect bikes from cars.

Install **path** between gate and fence to make this connection handicapped accessible and useful after wet weather.

= Install double sided bike route sign (or Hiawatha Trail sign, Fig. 9) facing both directions of traffic on Somo Ave.

Airphoto source: Google

ATTACHMENT I

School Success Story: Omro, WI

From: East Central Wisconsin Regional Planning Commission

Success Story:
Omro Middle School's Bike to School Day… and Beyond

Safe Routes Matters: March/April 2012

Omro Middle School, in northeastern Wisconsin, has a history with Bike to School Day – it held its first Bike to School Day event in May 2010. But it didn't stop there. Program coordinator Joe Horvath supplied students with year-round bicycling activities and infrastructure to encourage students to choose an active commuting lifestyle and active hobbies.

Bike to School Day

The Omro School District held their first Bike to School Day event in May 2010, in conjunction with bicycling activities during the school day. More than 20 percent of students biked to school. A bicycle train program kicked off for the event and continued into the 2010-2011 school year.

Bike Fleet

The school developed a cycling program using a fleet of more than 35 bicycles that is available to students during physical education classes, lunch and special events and trips. The bicycle fleet is maintained by the school's "Young Mechanics," who are trained high school and middle school students working in a fully tooled bike shop. In an age when more and more U.S. cities are establishing bike sharing programs, Omro Middle School organizes and runs a bike share program itself, rather than through the support of a civic or adult organization.

Omro Middle School
Young Mechanics Program

Omro Middle School's physical education teacher has trained a crew of young bicycle mechanics. The young bicycle mechanics work out of the school's "Bicycle Shoppe." Their job is to maintain the school's bicycle fleet, which is used during physical education classes, and assist other students with bicycle maintenance issues. The young mechanics earn "bike bucks" for their work in the Bicycle Shoppe, which they can redeem for bicycle parts, tires, and sale bikes.

—Adapted from Safe Routes Matters, March/April 2012

Bicycle Education and Cyclocross

Omro Middle School has begun developing a bicycle education program and a 0.75-mile cyclocross course on the school campus, connecting the existing on-campus limestone surface trail and the school forest. The course is already used by middle school bicycle education curriculum classes, and the goal is to develop a cyclocross program in the 2011-2012 school year. Instruction in cyclocross racing has been offered the past several years during their middle school Career & Hobby Day held each May.

Annual Bicycle Field Trip

Every year, Omro's eighth graders take two weeks of the bicycle curriculum in their physical education class. Near the end of May, approximately 100 students take part in an eighth-grade bicycle field trip with 30 teacher/parent chaperones. Students are divided into teams for a day-long scavenger hunt spanning 30 miles of bicycling.

Students begin by completing a bicycle safety quiz. Then they ride to their first stop, where a law enforcement officer judges how safely they bicycled. Throughout the day, students bike 2-3 miles at a time to these stations, where adult "Station Masters" assign tasks and ask questions involving bicycle rules and safety, math, language arts, social studies, science and art. Each station also has a healthy snack and water. At the end of the day, Omro Middle School awards donated recreational door prizes at a picnic. The school always raffles off a fully equipped bike, as well as smaller prizes for every student.

These components lead to a culture committed to year-round bicycling at the school – in fact, three students biked to school every day last year, through all seasons of Wisconsin weather.

"Omro's bicycling programs have established a year-round, enthusiastic bicycling culture that helps students develop a lifelong love for and commitment to bicycling and to physical activity in general," said Lauren Marchetti, director of the National Center for Safe Routes to School. "This culture is made possible by the students and by the program administrators that support them. Joe's heart and commitment to the students typifies what a Safe Routes to School local champion is, and what he or she can accomplish."

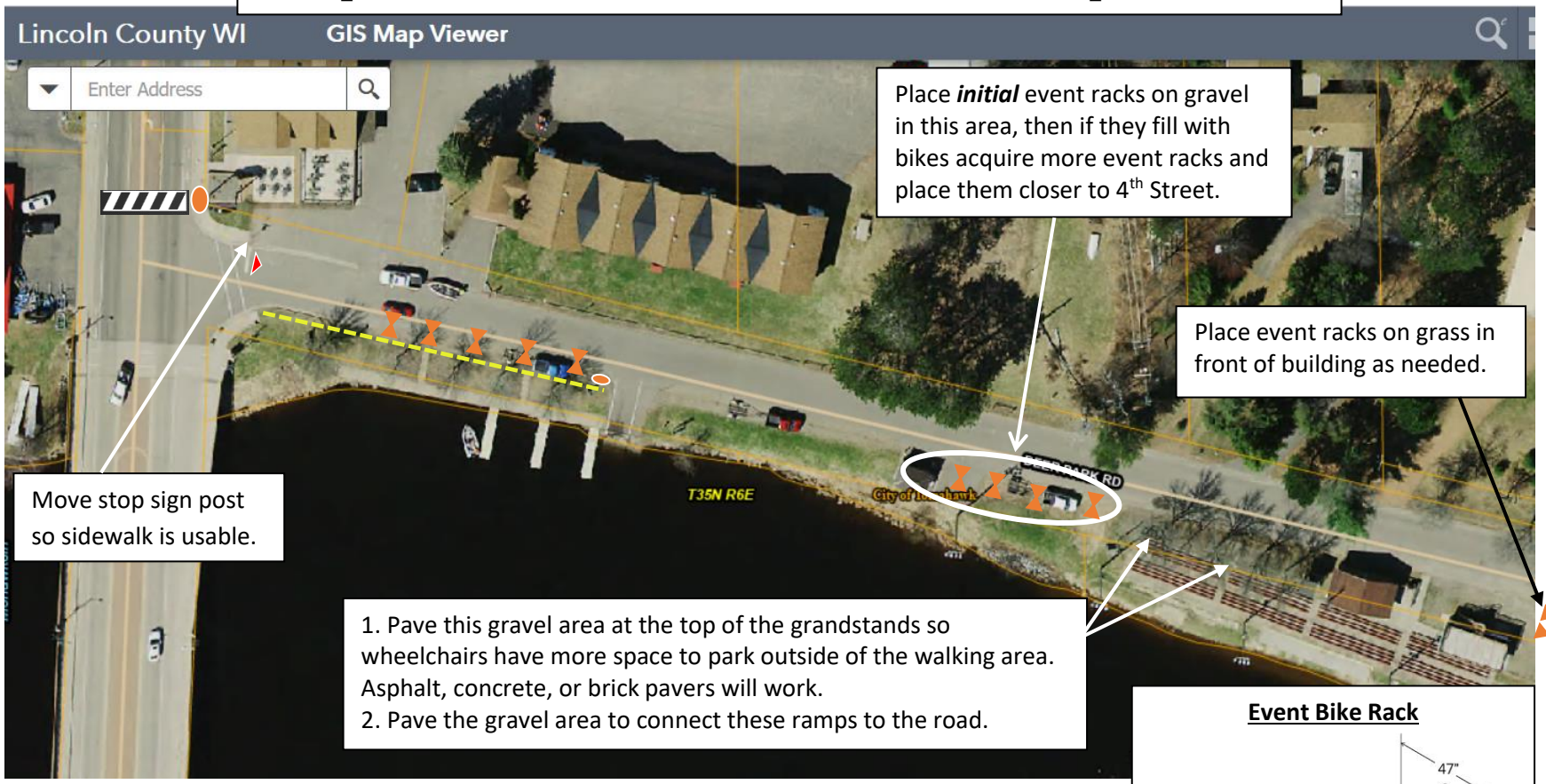
****

ATTACHMENT J

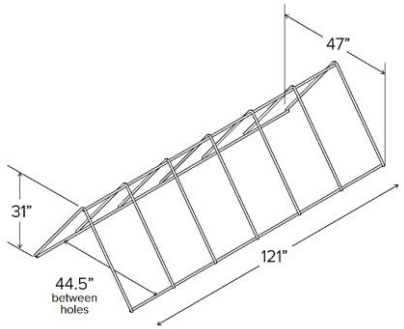
Kwahamot Water Ski Park Area
Possible Improvements

Compiled by: NCWRPC

Proposed Kwahamot Water Ski Park Area Improvements



Event Bike Rack



Source: DERO

= Paint new crosswalk (A regular 2-parallel white line crosswalk would suffice.)

= New curb ramp

= New 5-foot wide sidewalk with curb and gutter

= Paint "STOP" on road by stop bar.

= **Possible** event bike rack location (Only used during events, then stacked and moved when not in use.)

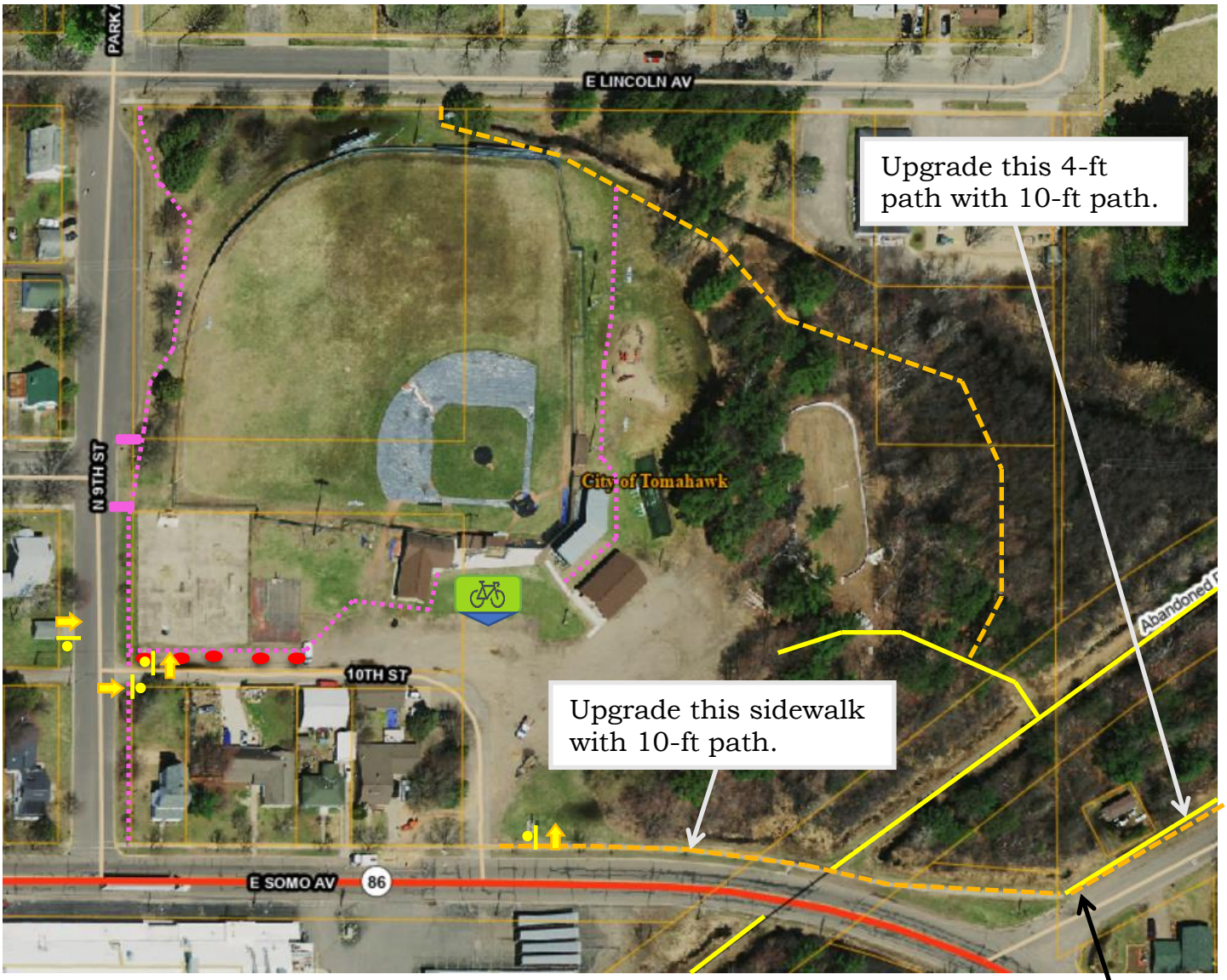
ATTACHMENT K

Pride Park – Possible Improvements

Compiled by: NCWRPC

Possible improvements at Pride Park

Airphoto source: Lincoln County's GIS Map Viewer



= Existing path

= Proposed 10-foot wide asphalt path

= Proposed 6-foot wide concrete sidewalk or asphalt path

= Connecting park sidewalk to sidewalk across the street

= Boulders to separate gravel parking from path

= Bicycle Destination sign (**Attachment N, Panel 2**).

= Bike corral rack.

ATTACHMENT L

Memorial Park & River Street – Possible Improvements

Compiled by: NCWRPC

Possible improvements to Memorial Park

Figure 1

See **Figure 2** for details.

See **Figure 3** for details.

Figure 2

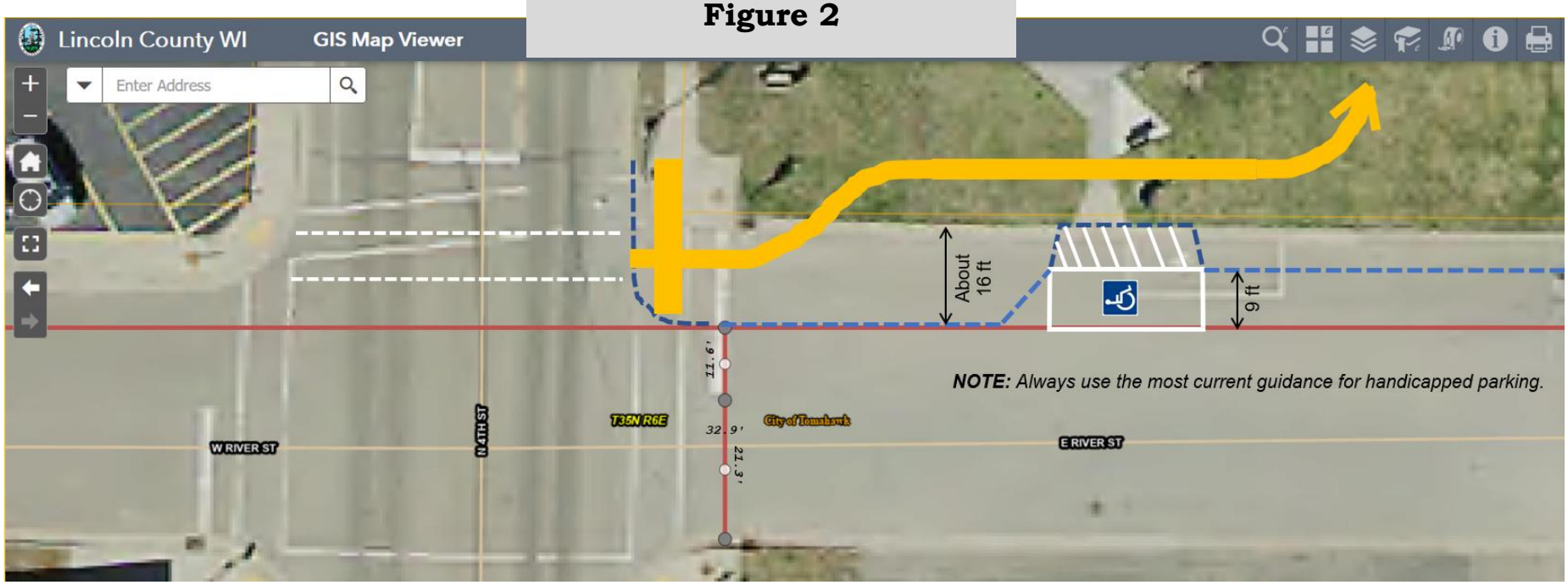
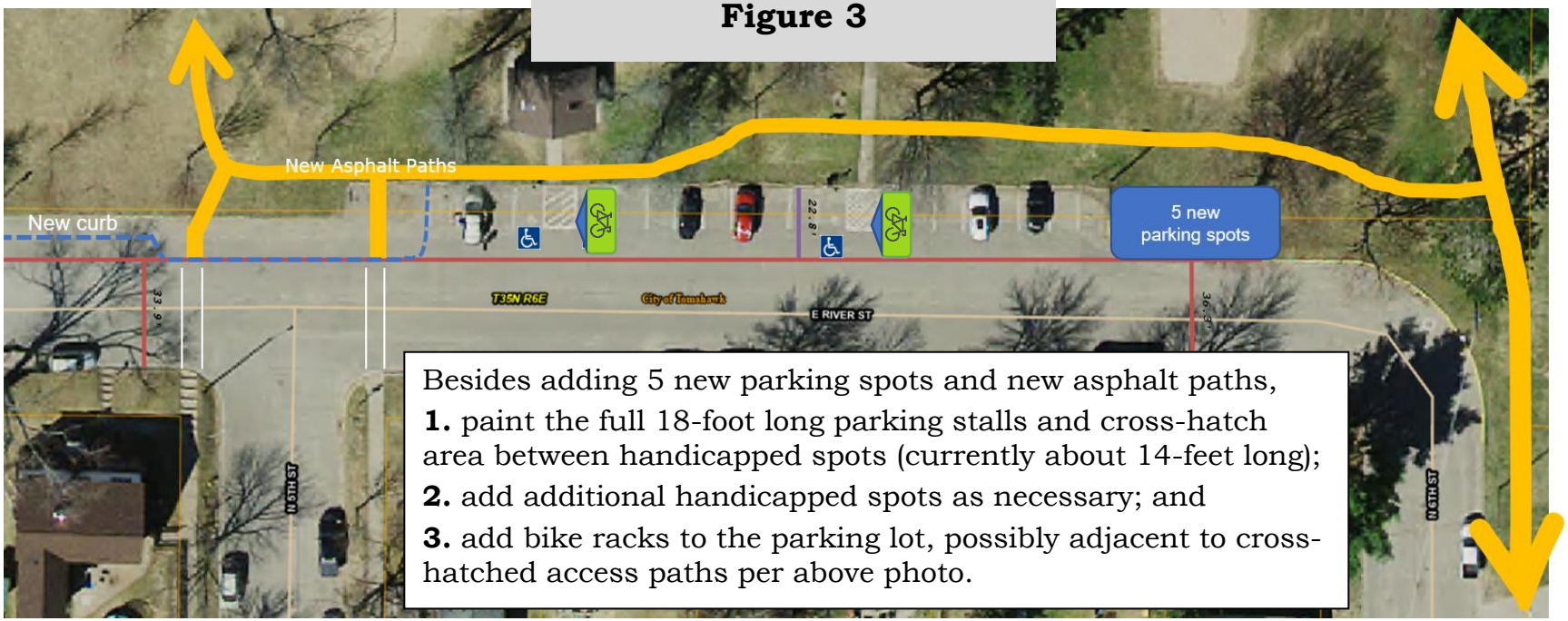


Figure 3



Besides adding 5 new parking spots and new asphalt paths,

1. paint the full 18-foot long parking stalls and cross-hatch area between handicapped spots (currently about 14-feet long);

2. add additional handicapped spots as necessary; and

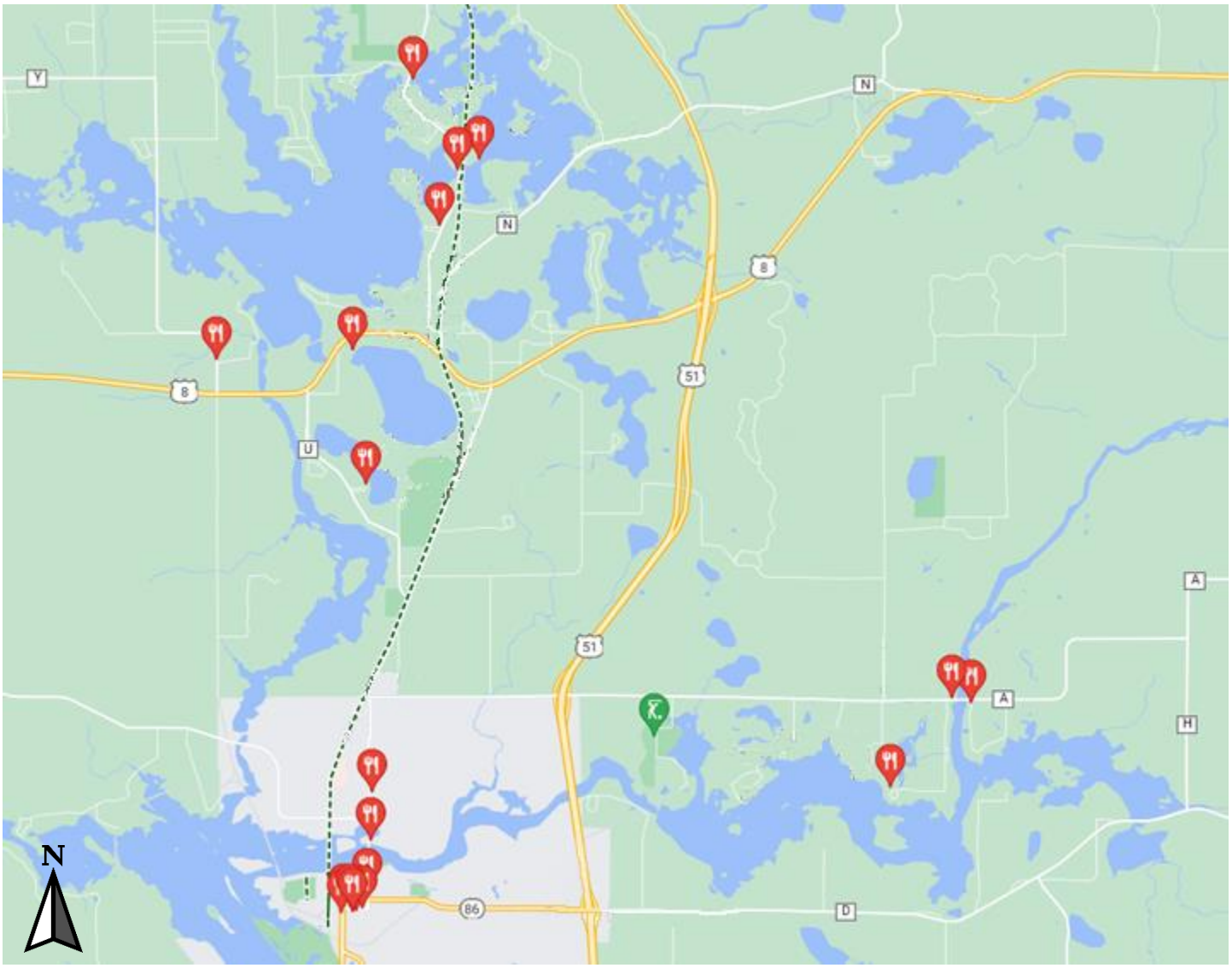
3. add bike racks to the parking lot, possibly adjacent to cross-hatched access paths per above photo.

ATTACHMENT M

Maps of Restaurants & Bars within and around Tomahawk

Compiled by: NCWRPC from Google Maps

Restaurants & Bars North of Tomahawk

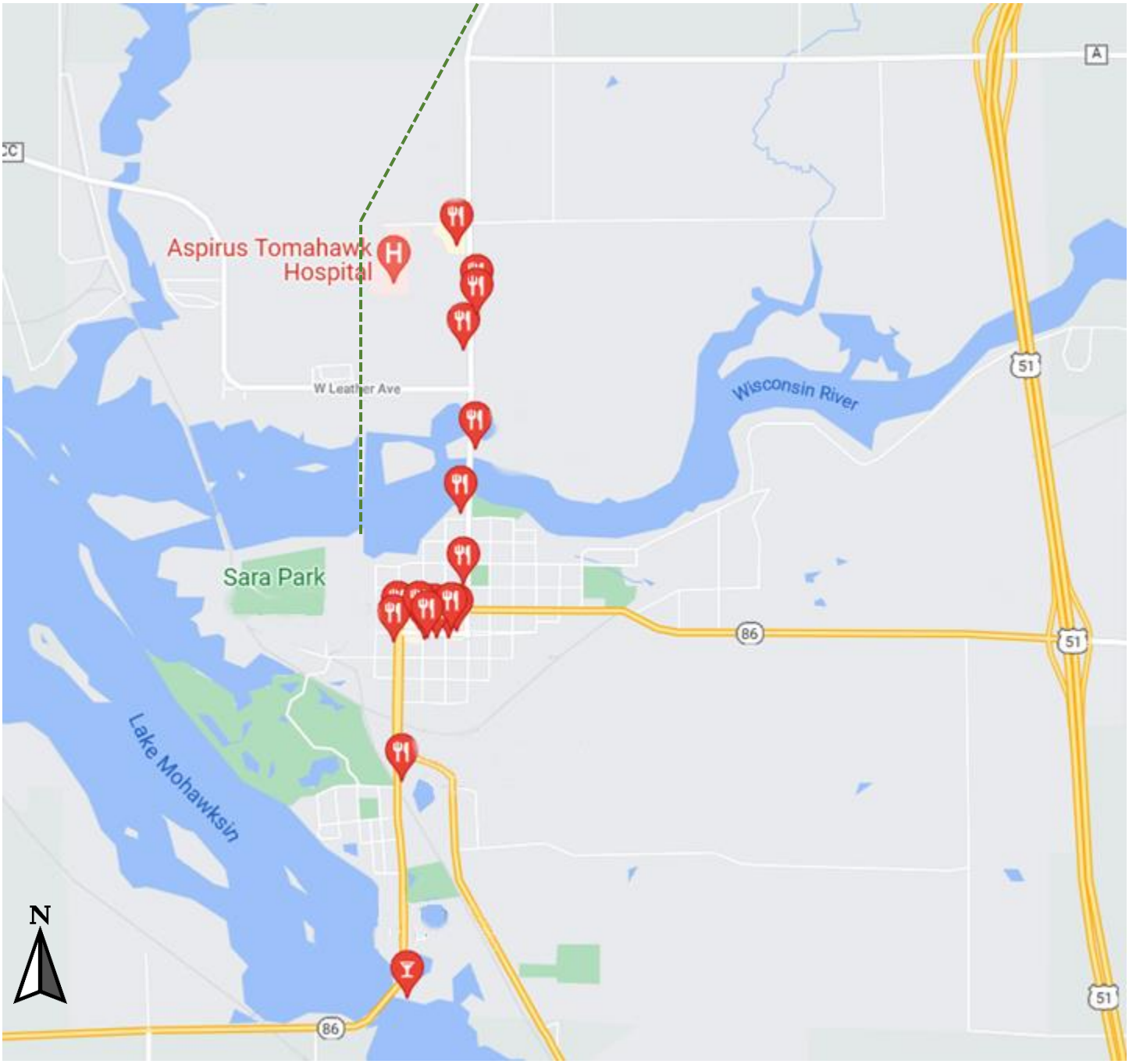


Source: Google Map data ©2022
Accessed: Winter 2021-2022

= Supper club / restaurant / bar / food establishment

= Hiawatha Trail

Restaurants within Tomahawk

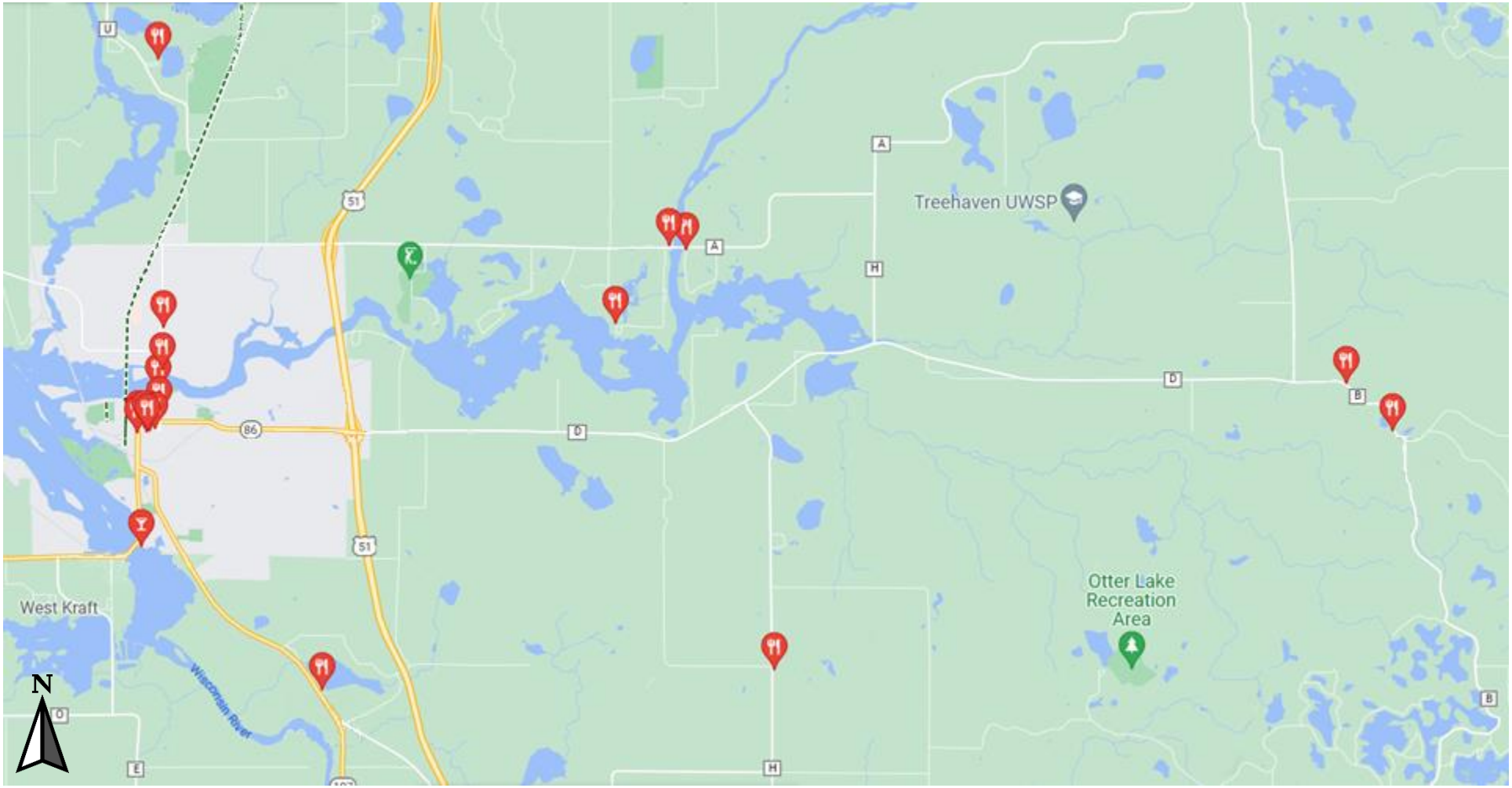


Source: Google Map data ©2022
Accessed: Winter 2021-2022

= Supper club / restaurant / bar / food establishment

= Hiawatha Trail

Restaurants & Bars East of Tomahawk



Source: Google Map data ©2022
Accessed: Winter 2021-2022

= Supper club / restaurant / bar / food establishment

= Hiawatha Trail

ATTACHMENT N

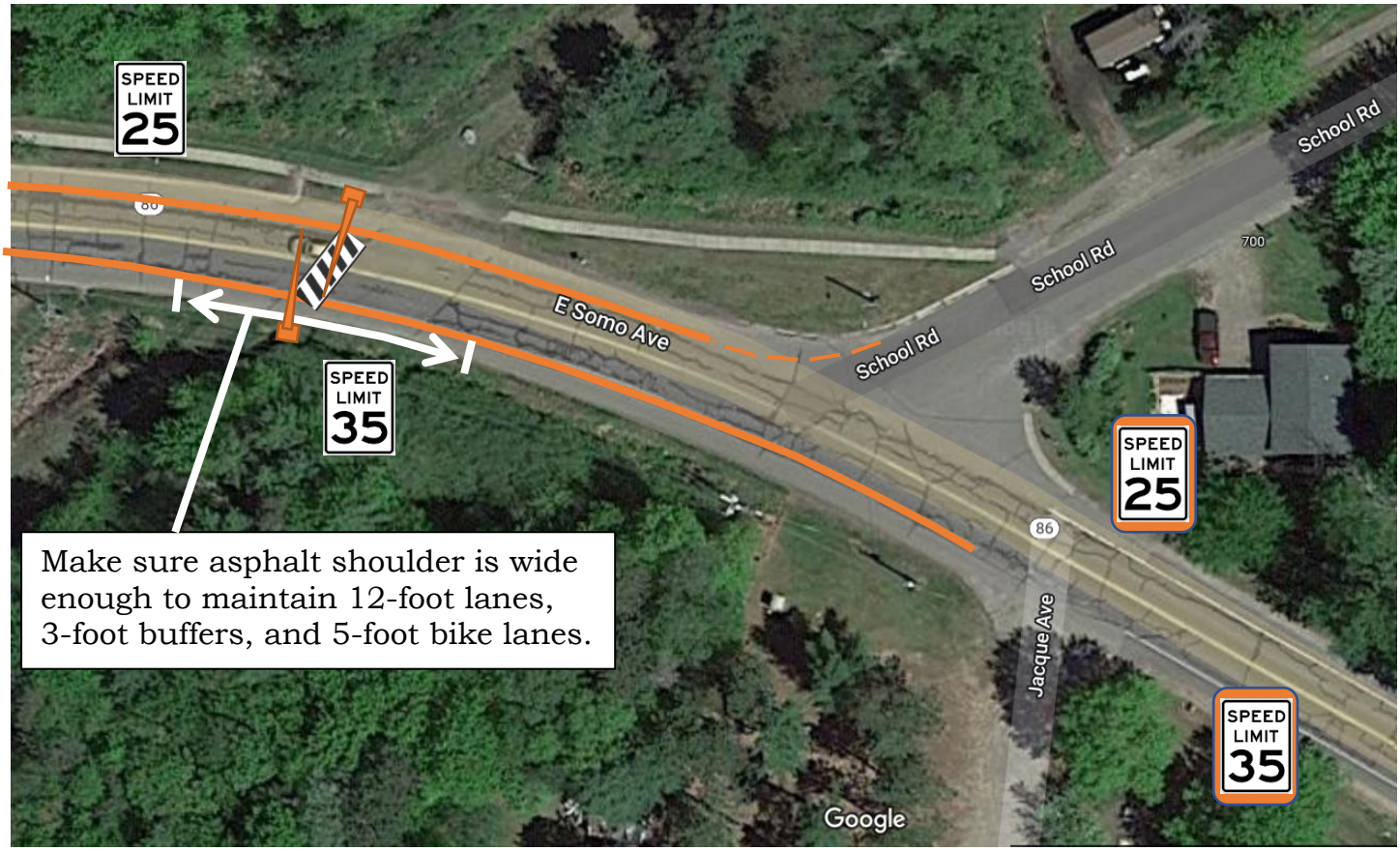
STH 86 – Possible Improvements

Compiled by: NCWRPC

Panel 1

STH 86 – Possible Improvements

All of these STH 86 Possible Improvements are based on "Strategies to Improve Pedestrian and Bicycle Safety" identified in **Attachment B**.



SPEED LIMIT 25 SPEED LIMIT 35 = Current speed limits

SPEED LIMIT 25 SPEED LIMIT 35 = Potentially move speed limit "line" to this location. Discuss with WisDOT.

= Install a buffered bike lane. See **Panel 5**.

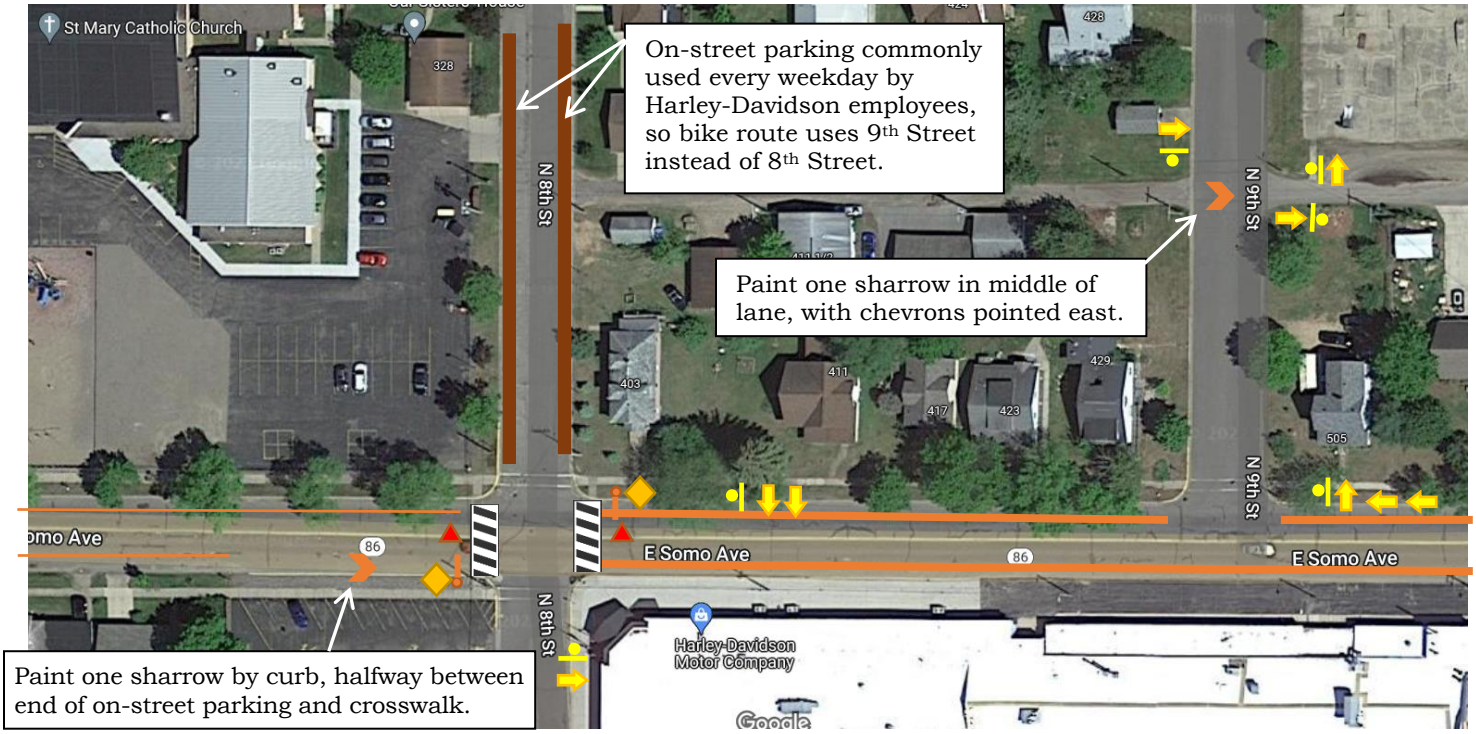
= Install dashed white line.

= Install High-intensity Activated CrosswalK (HAWK). See **Panel 7**.

= If HAWK crossing is not installed, then paint high visibility crosswalk (**Figure 13**), install Trail X-ING sign, and install Rectangular Rapid Flash Beacons (RRFBs) per WisDOT specifications.

STH 86 – Possible Improvements

Panel 2



= Install (or re-direct) street light outside of crosswalk (**Attachment F**).

= Paint a 5-foot bike lane (north side), and paint an urban shoulder 9-feet off curb face (south side) for on-street parking. Keep 12-foot travel lanes. See **Attachment P**.

= Install a buffered bike lane. See **Panel 5**.

= Paint sharrow (icon points in direction to paint chevrons).

= Bicycle Destination sign (**Figure 20**).

= Paint high visibility crosswalk (**Figure 13**).

= Continue placing <u>In-Street Pedestrian Crosswalk Sign</u> in the road during spring/summer/fall.

= Install this pedestrian sign assembly on post at crosswalk:
Note: To keep sign clutter to a minimum, don't install Ped. Crossing Ahead signs.

Figure 20

STH 86 – Possible Improvements

Panel 3

Airphoto by Google

— = Paint a 5-foot bike lane (north side),
and paint an urban shoulder 9-feet off curb face (south side) for on-street parking.
Keep 12-foot travel lanes. See **Attachment P**.

› = Paint sharrow.

= May Use Full Lane sign.
Install sign on post near sharrow.

Airphoto by Google

STH 86 – Possible Improvements

Panel 4

— = Paint a 5-foot bike lane (north side), and paint an urban shoulder 9-feet off curb face (south side) for on-street parking. Keep 12-foot travel lanes. See **Attachment P**.

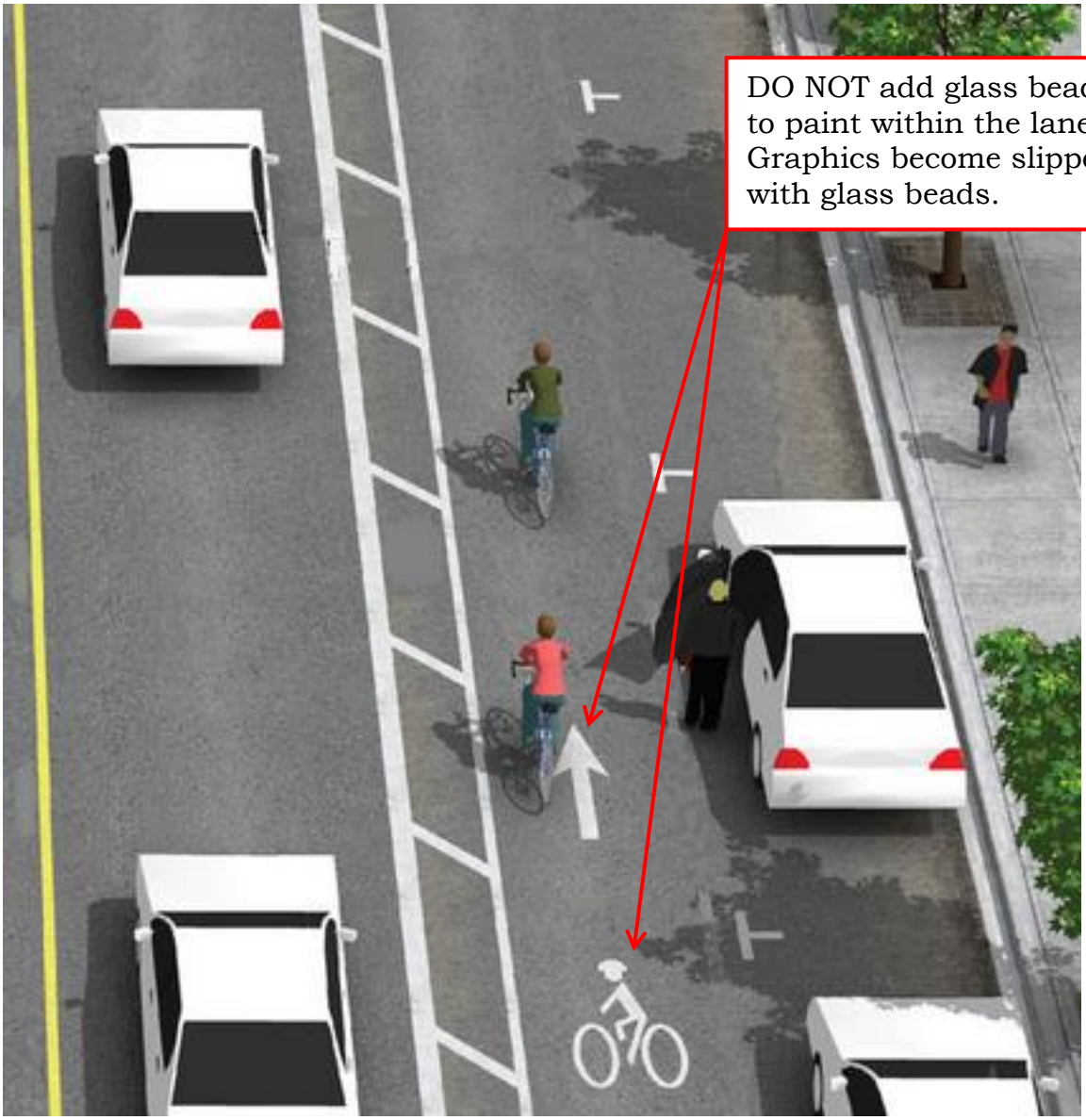
= Paint sharrow.

= Share The Road sign assembly, instead of May Use Full Lane sign, because other signs in this area already have white backgrounds.

= Add a STOP sign to make a 4-way stop intersection (and paint STOP on road behind stop line). Blind intersection.

= Bicycle Destination signs.

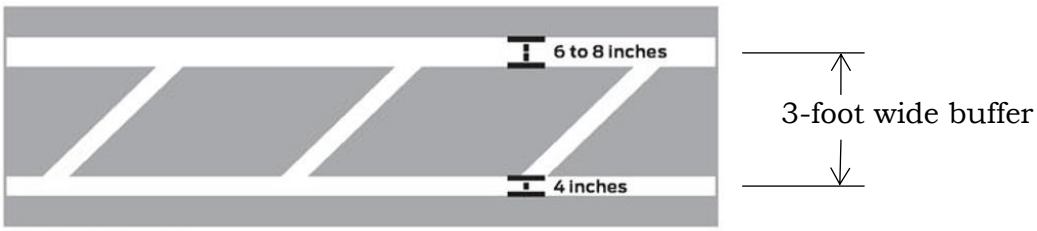
Buffered Bike Lane



Source: NACTO's Urban Bikeway Design Guide

Buffered bike lanes are conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane. A buffered bike lane is allowed as per MUTCD guidelines for buffered preferential lanes (section 3D-01).

A buffered bike lane needs a minimum of 6-feet from the parking lane.



MUTCD Figure 3B-24 Source: NACTO graphic

STH 86 – Possible Improvements

Panel 6

Tomahawk Ave Road Diet

North 4th Street's highest traffic count is 10,700 vehicles, and that road only has 2 travel lanes and middle turn lane. Tomahawk Avenue's highest traffic count is 5,600 vehicles, so 1 travel lane in each direction with existing center turn lane with median is enough for the traffic on this road too.

= Add a STOP sign to make a 4-way stop intersection. Blind intersection.

= Buffered Bike Lane (See **Panel 5**). On-street parking to remain.

= Identifies one vehicle travel lane instead of two. Don't paint arrow.

= Represents one vehicle travel lane with all turns allowed. Don't paint arrows.

= Paint sharrow.

= May Use Full Lane sign. Install sign on post near sharrow.

= Install High-intensity Activated CrosswalK (HAWK).

= Buffered Bike Lane (See **Panel 5**).

= If HAWK crossing is not installed, then paint high visibility crosswalk (**Figure 13**), install Trail X-ING sign, and install Rectangular Rapid Flash Beacons (RRFBs) per WisDOT specifications.

Figure 18 HAWK Crossing

High-intensity Activated CrosswalK (HAWK) in Minocqua

STH 86 – Possible Improvements

Panel 8

To reinforce that bicycling is only for paths and roads, not sidewalks, then these 2 signs directing bicyclists downtown should be moved to this light post. Move the “no parking” sign to another light post.

STH 86 – Possible Improvements

Panel 9

= Buffered Bike Lane (See **Panel 5**).

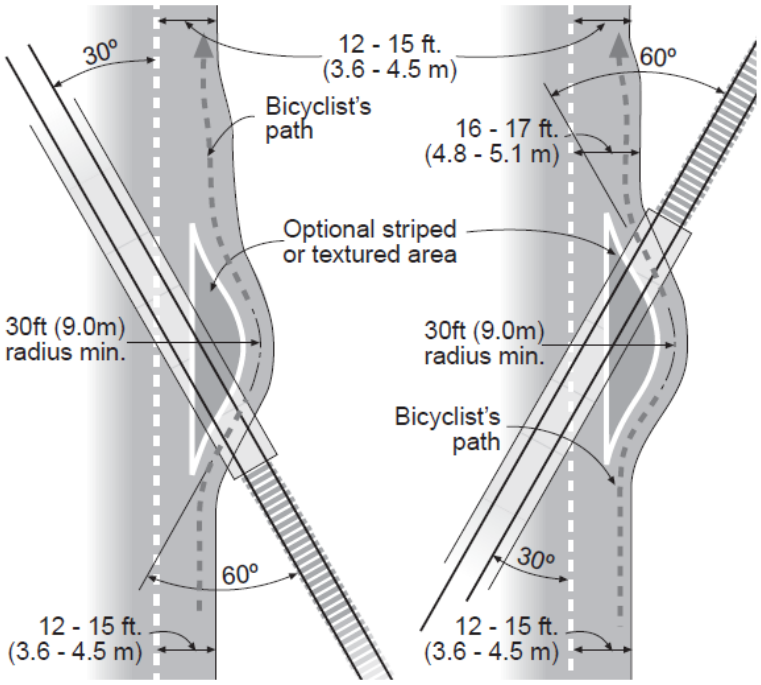
= Identifies one vehicle travel lane instead of two.

= Install a bike lane per **Attachment P**.

= Paint sharrow.

= Share The Road sign assembly.

Figure 19



Source: WisDOT, Wisconsin Bicycle Facility Design Handbook

—— = Install 5-foot wide bike lane per **Attachment P**, and narrow travel lane to 11-feet all the way south to Hickey Avenue.

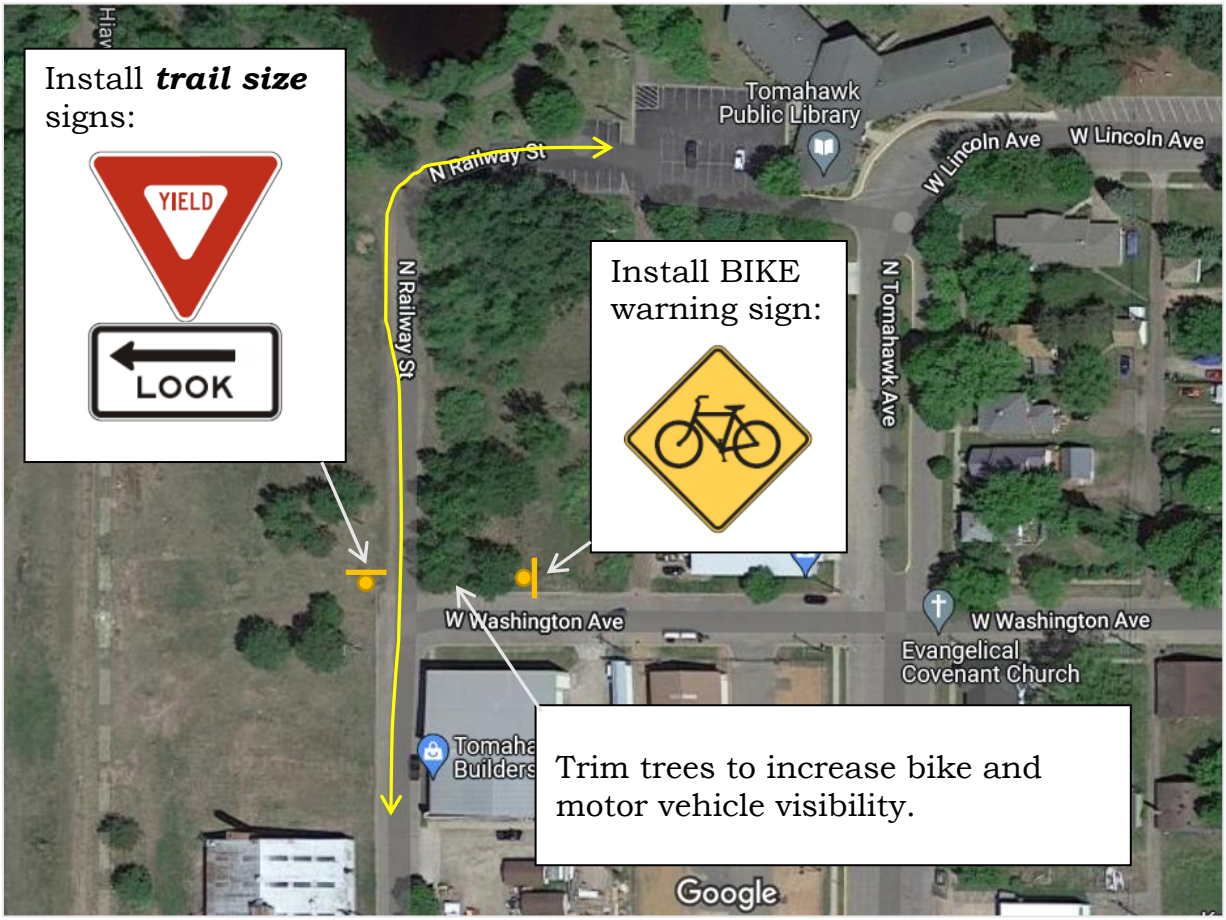
= Add the appropriate amount of paved shoulders per **Figure 19** during repaving of road.

ATTACHMENT O

Improving Kid Bike Intersections

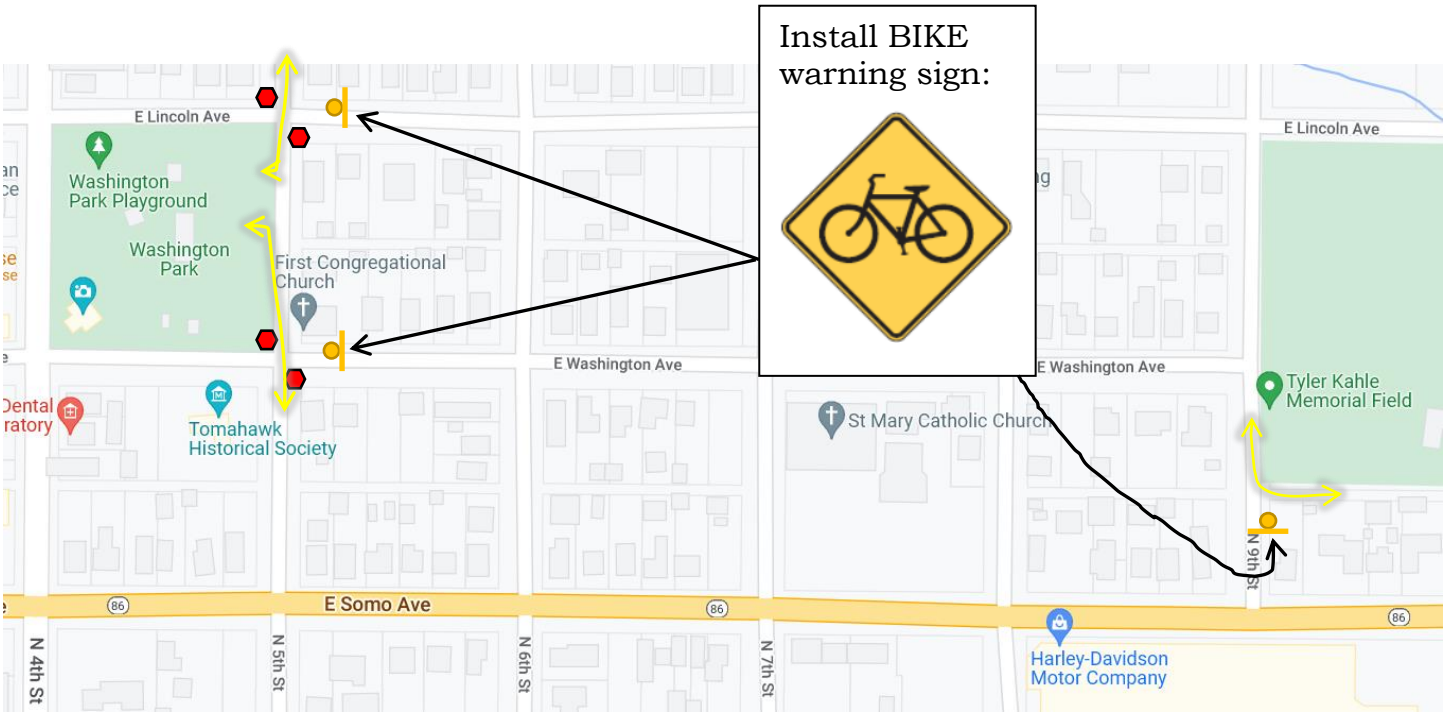
Compiled by: NCWRPC

Improving Kid Awareness at Specific Intersections



Common bike routes for kids.

Stop sign



ATTACHMENT P

Bike Route Signs & Road Markings for Tomahawk

Compiled by: NCWRPC

Bike Route Signs & Road Markings for Tomahawk

The Manual for Uniform Traffic Control Devices (MUTCD) is the required manual to use when determining what sign is needed along a road or on private property that is open to the public. Other guides also exist, some of which use the MUTCD. There is leeway built into MUTCD, because all notations in the manual are not law; *standards* are law, while *guidance* and *option* are built in flexibility. This recommendation uses that flexibility to suggest what may fit best in Tomahawk.

Section 2A.04 Excessive Use of Signs (From MUTCD 2009)

Guidance:

01 *Regulatory and warning signs should be used conservatively because these signs, if used to excess, tend to lose their effectiveness. If used, route signs and directional guide signs should be used frequently because their use promotes efficient operations by keeping road users informed of their location.*

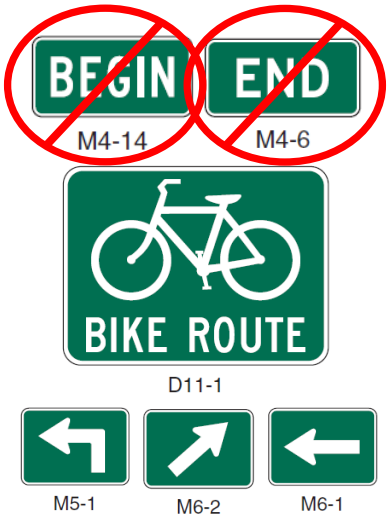
NCWRPC Note: Since the green bike route signs (D11-1, and m series) below are guide signs, then frequent use is justified per the above guidance (2A.04). Frequent use is defined below in the NACTO text.

"…every 2 to 3 blocks along bicycle facilities, unless another type of sign is used (e.g., within 150 ft of a turn or decision sign). Should be placed soon after turns to confirm destination(s). ***Pavement markings can also act as confirmation that a bicyclist is on a preferred route."***

(From NACTO Urban Bikeway Design Guide)

MUTCD Figure 9B-4. Guide Signs and Plaques for Bicycle Facilities

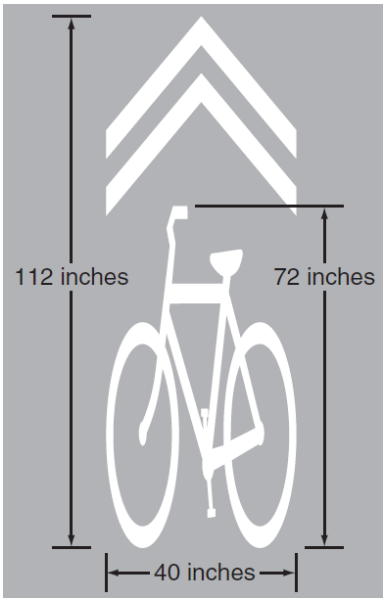
For use in Tomahawk:



See next page for more signs.

Bike Route Signs & Road Markings for Tomahawk

"Sharrow" Shared Lane Marking



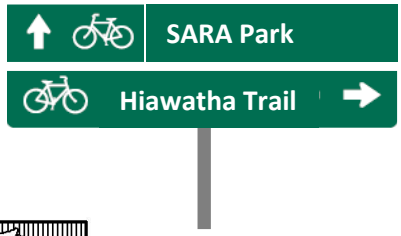
MUTCD Figure 9C-9. Shared Lane Marking

****

Guide Signs and Plaques for Bicycle Facilities (MUTCD)

Review the Manual for Uniform Traffic Control Devices (MUTCD) for specifications related to the below bicycle wayfinding signage:

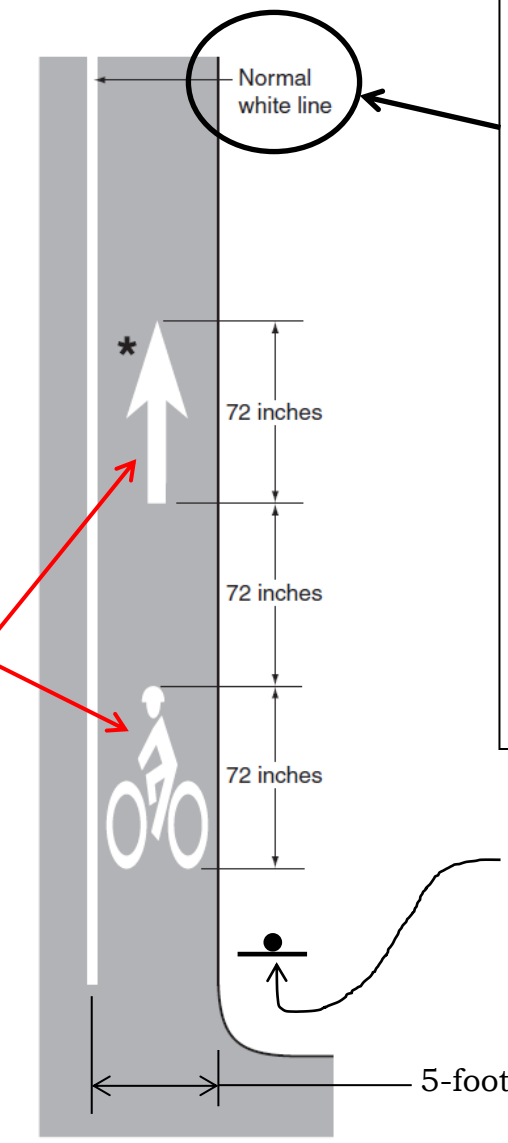
This alternative to using BIKE ROUTE sign above destination signs would be useful on residential streets where a lot of signs may be necessary or where a rider must stop. This sign assembly may be less expensive because the BIKE ROUTE sign is not needed.



A maximum of 3 destinations can be added under a BIKE ROUTE sign.

Bike Route Signs & Road Markings for Tomahawk

Bike Lane



B - Helmeted Bicyclist Symbol

MUTCD Figure 9C-3

Urban Shoulder

The ***normal white line*** of a bike lane painted in the curb lane, at least 3-feet plus 1 or 2 foot gutter area away from the curb, is considered an ***urban shoulder.***

If there are at least 4-feet available in a curb area, then an *urban shoulder* could be painted to provide a small safe space for bicyclists. The bike lane arrow and helmeted bicyclist cannot be painted in a space less than 5-feet.

Where on-street parking is necessary to keep, but where that parking may not be used consistently, an *urban shoulder* is suggested to be painted to encompass up to 7 feet (up to 9-feet from curb face) of the whole parking lane. This area may be used to park cars and ride a bike in when cars are not there.

Install BIKE LANE sign at the start of each block of a bike lane.

Bike Lane

5-foot minimum width (curb face to line)

Using this Helmeted Bicyclist Symbol when painting bike lanes reinforces that wearing a helmet when riding on the road is a good idea.

DO NOT add glass beads to paint within bike lane. Graphics become slippery with glass beads.

Newly Constructed Bicycle Facilities

Issue

When on-road bicycle facilities are newly constructed, roadway users must go through a learning period to fully understand the changes and exactly what the new bicycle signage, symbols and markings mean. During this time period, inappropriate maneuvers by drivers and bicyclists may be more frequent.

Strategies

A coordinated and timely effort to educate the public about changes to a transportation facility may shorten the public's learning period, make road users feel more comfortable with and accepting of the changes, and improve overall safety.

Strategy One – Construction Information Signs: This strategy involves placing construction information signs to inform the public that changes have occurred and explain what the new symbols, signage and markings mean. Details for these construction signs and their locations would be included in the construction staging/maintenance of traffic section of the design plans. These signs would be in place for about 30 to 60 days following the implementation of the new facility, or in place for at least a week before and after each holiday: Memorial Day, Independence Day, & Labor Day due to tourists visiting Tomahawk.

Figure 9: Example Awareness Signs
Source: TDG Image Created for Baltimore New Traffic Pattern Ahead – Virginia DOT Share the Road and Bike Lane Sign

Strategy Two – Newsletter:
A note with a diagram about the new bike facility and how to interact with it placed in a community's newsletter or utility bill is a direct way to provide residents with more information.

Strategy Three – Other Public Outreach
The public information effort can be supported through other types of outreach strategies such as using variable message signs, providing information on the City website, in tourism communications, and handouts or posters for businesses and civic organizations to post.

Note:
Temporary traffic control (TTC) devices are a found in the Chapter 6 of the MUTCD. These signs are based upon the principal of providing information to roadway users as detailed in Section 6F.55 of the MUTCD for variable message boards following the principals set forth in Chapter 6 of the MUTCD for TTC devices. It is recommended that the City follow the MUTCD experimentation process when implementing these new bicycle facility awareness signs.

Revised from: City of Baltimore, Dept. of Transportation, Bicycle Facility Design Guide. Aug. 2005.

Sharing the Road

Issue

Due to the relatively high speed differentials between bicycles and vehicular traffic, there is frequently a need to warn drivers to watch for slower forms of traffic sharing the roadway. There may also be the need to inform bicyclist of where they may be located within a shared roadway for safest operation or to simply make it clear that bicyclists are allowed to use the road

In some situations, shared roadways serve as a link in a bicycle route network where a more desirable facility can't be implemented due to some type of constraint, i.e. a few blocks that are too narrow for bike lanes on a road that otherwise has them designated at each end.

Shared roadways may also serve as a transition for bicyclists where a dedicated bicycle facility terminates onto a roadway appropriate for bicycle use.

Shared roadways may also serve as a transition for bicyclists where a dedicated bicycle facility, such as a bicycle lane, terminates onto a roadway appropriate for bicycle use. "Share the Road" signs should be used to identify these transition locations.

Figure 10: "Share the Road" Signs
Source: MUTCD, Part 9

Strategy - Share the Road signs:

"Share the Road" signs can be used to inform drivers that slower forms of traffic are using the roadway. It also warns bicyclists that they will be required to share travel lanes with motor vehicles. "Share the Road" signs can be used on roads within the bicycle route network or locations outside the network that are deemed appropriate, i.e. a road suitable for shared use that may be encountering inappropriate driver behavior. "Share the Road" signs may only be used on roads that have no dedicated space for bicyclists and they are not for use in designating signed bike routes.

Revised from: City of Baltimore, Dept. of Transportation, Bicycle Facility Design Guide. Aug. 2005.