

Chapter 5 Bicycle and Pedestrian



Chapter 5 – Bicycle and Pedestrian

The majority of bicycle and pedestrian trips in Black Hawk County are categorized as physical and leisurely activities. However, approximately 8 percent of households in Black Hawk County have no vehicles available, making bicycling and walking a vital mode of transportation for many community members.

The Importance of Bicycle and Pedestrian Infrastructure

Road construction projects in the U.S. have primarily been planned with the goal of moving automobiles and traffic through a corridor as quickly and efficiently as possible. This type of auto-centric planning typically leaves behind bicyclists and pedestrians as an afterthought, resulting in unfriendly, hazardous, and even deadly crossing points. Common issues include inefficient or aging infrastructure, a lack of ADA-compliance, and a lack of protective barriers for vulnerable road users against busy traffic and high-speed limits.



www.smartgrowthamerica.org/dangerous-by-design/

A Nationwide Shift

Transportation and urban planning in the U.S. have undergone a drastic shift towards comprehensive multimodal planning in recent years. Policy approaches and tactics such as Vision Zero and Complete Streets provide a framework that encourages safe, accessible, and convenient access to our nation's roads for all modes of transportation. This shift has also been highlighted by the 2021 Bipartisan Infrastructure Bill, which includes various funding sources dedicated to projects that implement multimodal inclusion. While Complete Streets approaches expand across the nation, it should be noted that they are not solely reserved for major cities; rather, they can be applied to any road where various types of road users commonly interact with each other.

METRO STATS

133.4

Miles of bike infrastructure

18,100

Miles walked daily by residents¹

6.8%

Of all trips are walking trips¹

9,167

Residents have bicycled in the past week on average¹

7

Non-motorized fatalities & serious injuries per year²

Sources:

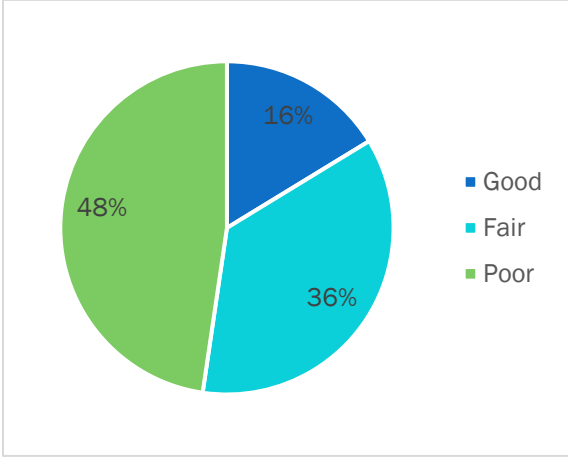
¹Estimates from 2017 NHTS Add-On

²Iowa DOT, Iowa Crash Analysis Tool, 2017-2022



The 2022 Public Input Survey asked Black Hawk County metropolitan residents to rate our streets based on the concept of Complete Streets, or how well our roads serve all road users. This includes automobile users, transit riders, bicyclists, and pedestrians alike. Most respondents rated our streets as “poor” in this regard. The bikeway network faces significant challenges due to its disconnected nature and limited on-road presence, making it challenging for cyclists to travel seamlessly and efficiently throughout the metro area. Cyclists often encounter discontinuities, where bike lanes or share lane facilities suddenly end or fail to connect to other parts of the network, forcing them to navigate through busy streets or unsafe roadways. Implementing Complete Street projects remains a substantial opportunity area for the Black Hawk County metropolitan area. Addressing these connectivity issues and investing in a cohesive and comprehensive bikeway network will not only improve safety and encourage active transportation but also enhance the overall accessibility and livability of the area. The later sections of this chapter detail the planning efforts and projects currently underway to expand the number of Complete Streets in Waterloo.

Figure 5.1: 2022 Public Input Survey, Round Two asking respondents how well our streets serve all road users, including vehicle users, transit riders, bicyclists, and pedestrians.



Overview of Bicycle and Pedestrian Facilities

To serve all road users effectively and efficiently, it is important to recognize the similarities and differences between each group and understand how they interact with the road. Both non-motorized and motorized modes of transportation share the same principles: improve safety, reduce delays, and maximize traffic flow. However, pedestrians and bicyclists have unique needs and interact with the transportation system in different ways than drivers do. Table 5.1 identifies how non-motorized users use each facility type.

Table 5.1: Bicycle and Pedestrian Facilities

Facility	Bicycles	Pedestrians	Example
Sidewalk (< 8 ft)	No	Yes	Rainbow Dr sidewalks
Paved Trail (≥ 8 ft*)	Yes	Yes	Greenhill Rd trail
Paved Shoulders	Yes	Not recommended	W 27th St shoulders
Bike lane	Yes	No	Park Ave bike lanes
Driving lane	Yes	No	Cedar Heights Dr

*The standard width for a paved trail is 10 feet

Which Facilities Work Best?

The decision of which facilities to include in a new construction or reconstruction project is determined by the respective jurisdiction. Sidewalks and paved trails accommodate pedestrian travel; while paved trails, bike lanes, paved shoulders, and driving lanes accommodate bicycle travel. However, not all facility types provide equal service for bicycles. While there are instances in which a paved trail is preferable to bike lanes, such as on roadways with high-speed limits or natural areas not situated alongside a roadway, these do not always meet a bicyclist's needs.



In more concentrated urban areas, a paved trail does not always serve as a connection point to another location, thus requiring on-road travel. Additionally, constructing a separate, paved trail into a new or existing project is costly and not a feasible alternative for every project. Since bicyclists and pedestrians are also roadway users, it is important to develop efficient connections for them just as we do for roadway users in vehicles. Furthermore, since pedestrians and bicyclists are the most vulnerable transportation group, it is crucial to plan for safety.

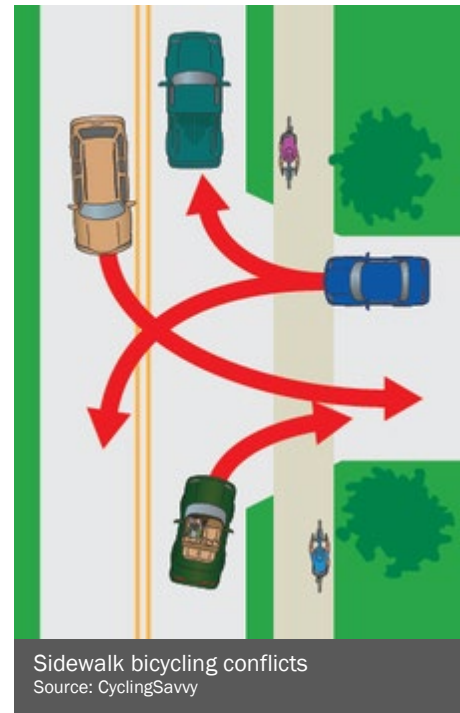
Roads with bike lanes provide the additional benefit of separating drivers and bicyclists who typically operate at different speeds. This makes bicycles feel safer and can reduce delay for drivers. Bicyclists also tend to face fewer delays on bike lanes than on paved trails, as they have priority at most intersections. The *Guide for the Development of Bicycle Facilities* by AASHTO lists fourteen conflicts associated with paved trails or “side paths,” including the following:

- Bicyclists are often not seen by motorists turning left or right.
- Motorists may block crossings at intersections and driveways.
- Stop or yield signs along trails are ineffective.
- Fixed objects can constrain the usable width of a trail.

Sidewalks should not be considered a bicycle facility. While it varies by state and local ordinance, some cities prohibit sidewalk cycling entirely or in key areas, such as in Iowa City's downtown and commercial district. In addition to the conflicts listed above, there are other disadvantages of bicycling on a sidewalk:

- Conflicts with pedestrians are more likely.
- Motorists may not expect bicyclists to appear suddenly at crossings and driveways.
- Uneven sidewalk pavement can make riding less comfortable and increase delays.

While bicycling on sidewalks is allowed in most areas in the Black Hawk County MPO, sidewalks do not efficiently fulfill the needs of bicycle transportation and should not be considered a substitute for bicycling facilities.



Bicyclists may operate on most driving lanes in the MPO area in the same manner as automobile traffic. The only places where it is illegal for bicyclists to operate on-road are on Interstate highways and highways with a posted minimum speed limit. While the law allows bicycling on most driving lanes, in practice this can often be dangerous for bicyclists and frustrating for drivers. Any time a bicyclist avoids the most direct route because of perceived danger, it should be considered a delay for the bicyclist.

On the other hand, many local roads with low traffic volumes are suitable for bicycling as-is without the need for additional bike lanes or trails. These roads may be suitable to designate as “shared lanes” which can be defined with Share the Road signage, Bikes May Use Full Lane signage, Bike Route signage, or shared lane markings (or “sharrows”). Providing signage on these roads helps bicyclists identify a safe route and helps to spread additional awareness of a bicyclist’s presence on shared roadways. Many of these roads are included in the MPO Bikeway Plan shown as Map 5.2.

For pedestrians, the development of trails and sidewalks is more straightforward. Sidewalks and trails offer equal accommodation for pedestrians, though sidewalks less than five feet wide are not suitable for pedestrians walking two abreast. Additional improvements for pedestrians involve site-specific treatments that reduce crossing distances, calm traffic, and provide a safe area to wait for traffic. Some of these treatments are included in the next section.




While much discussion about pedestrian planning relates to transportation improvements, land uses play an equal if not greater role in shaping the environment for walking. Large block sizes, setback distances, and parking lots can increase the distance pedestrians must travel and compel them to walk along informal routes. In addition, many businesses and civic buildings do not have a designated walkway to their front door, so pedestrians must walk through parking lots or grassy areas to reach their destination. For these reasons, discussions about pedestrian planning should not be limited to trails and sidewalks alone.

Site-Specific Bicycle and Pedestrian Treatments

A variety of site-specific treatments can be used in addition to each of the five facilities described prior. Currently, these treatments are employed sparingly in the MPO area, and some do not currently exist at all.

Table 5.2 describes some of the most common treatments. This is only an overview and is not intended to serve as an exhaustive list of treatments. All treatments presented on the next pages are eligible for Transportation Alternatives Program (TAP) and Surface Transportation Block Grant (STBG) funding.

Table 5.2: Site-Specific Bicycle and Pedestrian Treatments

 <p>New York City, nacto.org</p>	<p>Median refuge island Facility type: Sidewalks and Trails</p> <p>Description: A protected space in the middle of a road crossing, typically designed as part of a median, that allows pedestrians and bicyclists to cross one direction of traffic at a time</p> <p>Benefits: Reduces time spent waiting for traffic, and reduces exposure in the crosswalk</p>
 <p>Canada, Flickr user drdul</p>	<p>Curb extensions (or bulb-outs) Facility type: Sidewalks</p> <p>Description: Any lateral shift in the curb that narrows the width of the street</p> <p>Benefits: Improves visibility, reduces exposure in the crosswalk, and reduces travel speeds</p>
 <p>Waterloo, INRCOG</p>	<p>Vertical speed control Facility type: All</p> <p>Description: Raised pavement in driving lanes including speed humps, speed tables, and speed cushions</p> <p>Benefits: Reduces travel speeds</p>



Atlanta, nacto.org

Narrower driving lanes

Facility type: All

Description: Driving lanes no greater than 11 feet wide, and parking lanes no greater than nine feet wide

Benefits: Reduces travel speeds, and reduces crossing distance



Marion, INRCOG

Pedestrian alleys

Facility type: N/A

Description: An alley where vehicles are restricted, and installations are added to appeal to pedestrians

Benefits: Eliminates conflicts with vehicles



Des Moines, INRCOG

Buffers and delineators

Facility type: Bike lanes

Description: Additional separation between bike lanes and driving lanes by means of buffer markings and delineator posts

Benefits: Reduces conflicts, and improves perceived safety



St Paul, INRCOG

On-road wayfinding signs

Facility type: Bike lanes and driving lanes

Description: Signage that directs bicyclists to local destinations via bike lanes and designated bike routes

Benefits: Improves operations, reduces delay



Tampa, twitter

Bike boxes

Facility type: Bike lanes and driving lanes

Description: A designated area at signalized intersections for bicyclists to wait at the head of a traffic lane

Benefits: Improves visibility, reduces conflicts, reduces traffic delays



San Luis Obispo, nacto.org

Signal detection and actuation

Facility type: Bike lanes and driving lanes

Description: A marked location for bicycles to actuate detection at signalized intersections

Benefits: Improves traffic operations, and reduces delay



Waterloo, INRCOG

Bicycle signals

Facility type: Bike lanes

Description: A traffic control device for bicyclists to be used along with conventional signals

Benefits: Improves traffic operations, and reduces conflicts between bicyclists and other modes



Portland, nacto.org

Bike Boulevards

Facility type: Driving lanes

Description: A street with low traffic volumes designed to prioritize bicycles and restrict through movements by vehicles

Benefits: Reduces conflicts, maintains low travel speeds



Park Avenue Bike Lanes Redesign project in downtown, Waterloo. More information under the “Current and Ongoing Projects” section in this chapter.

National Guidance

U.S. Law

Planning for bicycles and pedestrians is United States law. Section 217 in Title 23 of the U.S. Code addresses bicycle transportation and pedestrian walkways. Subsection (g) relates to planning and design:

(1) In general—

Bicyclists and pedestrians **shall** be given consideration in the comprehensive transportation plans developed by each metropolitan planning organization and State in accordance with sections 134 and 135, respectively. Bicycle transportation facilities and pedestrian walkways **shall** be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use are not permitted.

(2) Safety considerations—

Transportation plans and projects **shall** provide consideration for safety and contiguous routes for bicyclists and pedestrians. Safety considerations **shall** include the installation, where appropriate, and maintenance of audible traffic signals and audible signs at street crossings.

In 2010, the United States Department of Transportation (DOT) issued a Policy Statement on bicycle and pedestrian accommodation regulations and recommendations:

“The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide — including health, safety, environmental, transportation, and quality of life — transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.”



The DOT encourages transportation agencies to adopt similar policy statements on bicycle and pedestrian accommodation and go beyond the minimum design standards and requirements to create safe, attractive, sustainable, accessible, and convenient bicycling and walking networks. Several recommended actions are included in the DOT Policy Statement:

- Considering walking and bicycling as equals with other transportation modes
- Ensuring that there are transportation choices for people of all ages and abilities, especially children
- Going beyond minimum design standards
- Integrating bicycle and pedestrian accommodation on new, rehabilitated, and limited-access bridges
- Collecting data on walking and biking trips
- Setting mode share targets for walking and bicycling and tracking them over time
- Removing snow from sidewalks and shared-use paths
- Improving non-motorized facilities during maintenance projects

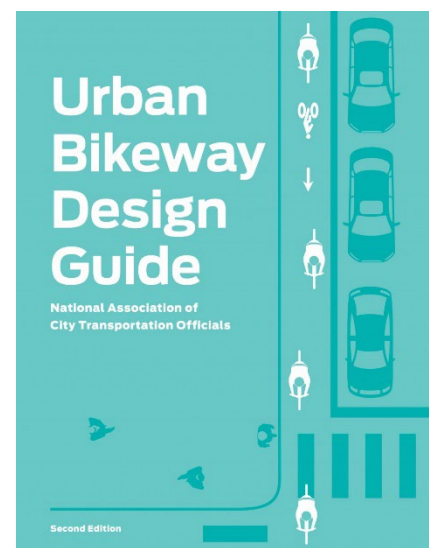
The Federal Highway Administration (FHWA) is a division of the DOT and issues the Manual on Uniform Traffic Control Devices (MUTCD), which has a significant impact on the design of bicycle facilities. The MUTCD sets the standards for traffic signage, signals, and pavement markings in the United States. The last update to the MUTCD was in 2009.

National Standards

In addition to federal policy, other organizations also influence transportation planning for bicycles and pedestrians. The American Association of State Highway and Transportation Officials (AASHTO) is the standards-setting body for the design and construction of highways and streets in the United States. AASHTO is an organization of State DOTs, not an entity of the federal government. However, the FHWA uses a formal rulemaking process to adopt AASHTO standards for application on the National Highway System.

Foremost is the AASHTO Green Book, *A Policy on Geometric Design of Highways and Streets*. The most recent edition of the Green Book, the 7th Edition, is more flexible, multimodal, and performance-based than in the past. In addition to the Green Book, AASHTO also publishes the *Guide for the Development of Bicycle Facilities* and the *Guide for the Planning, Design, and Operations of Pedestrian Facilities*.

Another notable organization is the National Association of City Transportation Officials (NACTO) which is an association of 96 major North American cities and transit agencies formed to exchange transportation ideas, insights, and practices and cooperatively approach national transportation issues. NACTO's mission is to build cities as places for people, with safe, sustainable, accessible, and equitable transportation choices that support a strong economy and vibrant quality of life. No cities in Iowa are members of NACTO. However, NACTO has been very influential in the advancement of bikeway and street design at a national level for the past several years. NACTO's *Urban Bikeway Design Guide* was released in 2011 and includes several treatments not yet adopted in the MUTCD or AASHTO manuals. In 2013, NACTO released the *Urban Street Design Guide* which focuses on the street as a whole and emphasizes pedestrian activity at intersections, sidewalks, and sitting areas, as well as traffic calming and streetscaping measures.



The League of American Bicyclists

National advances in bicycle planning have outpaced Iowa for many years. In 2011, Iowa was ranked as the 6th most bicycle friendly state according to The League of American Bicyclists. In 2017, Iowa ranked 30th. Most recently, in 2022, Iowa ranked 25th on a national basis, and 6th on a midwestern region basis. This ranking is a part of The League of American Bicyclists’ 2022 national report, *State Leadership for Safer Streets*. In it is included a state-by-state report card based on bicycle-friendliness. The report considers a variety of factors, including infrastructure, education, traffic laws and practices, policies, and planning.

Figure 5.5: The League of American Bicyclists, Bicycle Friendly State Report Card



Among positive steps forward, the Bicycle Friendly State Report Card commends the state of Iowa for adopting a Complete Streets policy and the Iowa DOT for adopting rumble strip standards. As for opportunities to explore, the report card suggests Iowa implement a “dooring” law, which prohibits motorists from opening an automobile door unless it is safe to do so. The report states Iowa is one of only eleven states that has not yet adopted a dooring law. The report also suggests the state spend more federal transportation funds on bicycling and pedestrian improvements, as the state currently spends less than two percent on such projects.

State Guidance

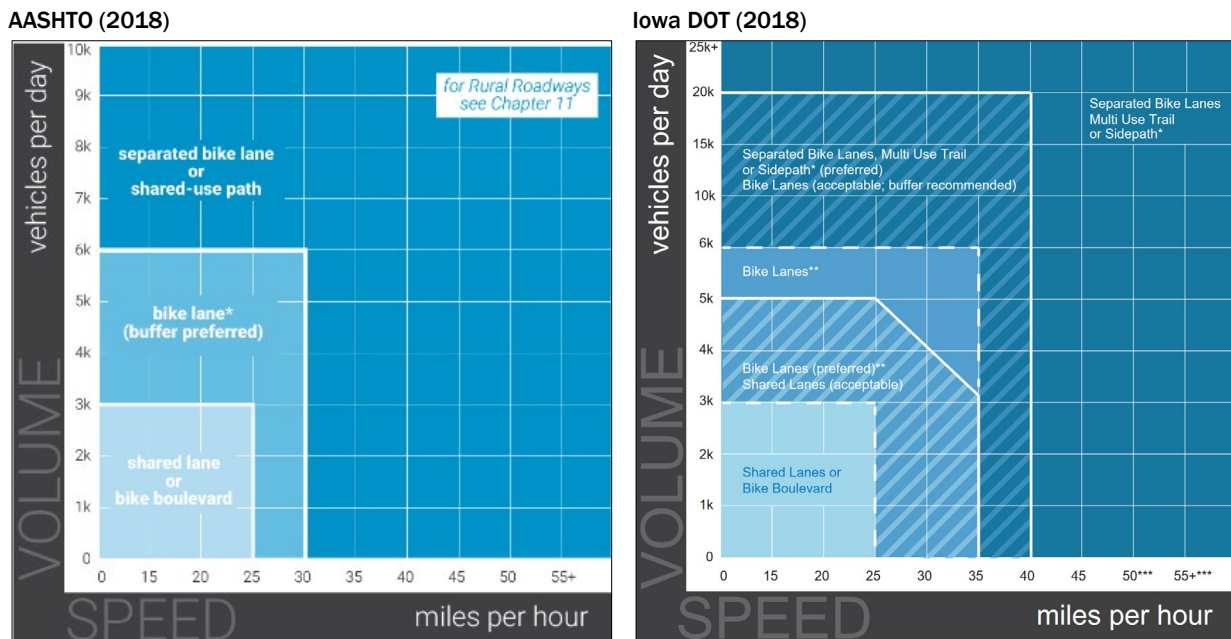
The *Iowa Bicycle and Pedestrian Long-Range Plan* was adopted by the Iowa DOT in 2018. The document includes a statewide Complete Streets policy which applies to all Iowa DOT projects. The policy outlines that bicycle and pedestrian accommodations will be considered in the design and scope for all transportation projects that involve new or improved facilities. Accommodations are to be implemented unless the additional cost would be excessively disproportionate to the need or probable use, or there is a demonstrated absence of future needs as determined by factors including current and future land use, current and projected user volumes, population density, and crash data.

The Iowa DOT also updated the state's *Design Manual* and *Bridge Design Manual* to reflect national best practices regarding bicycle and pedestrian facilities, particularly on-road facilities. These updates will be coordinated with the on-road bicycle section of the *Statewide Urban Design and Specifications (SUDAS) Manual*.

The *Iowa Bicycle and Pedestrian Long-Range Plan* includes basic design parameters for sidewalks, trails, curb ramps, crosswalks, refuge islands, and signals for pedestrians. For bicycles, the plan identifies basic design parameters for trails, paved shoulders, bike lanes, separated bike lanes, bike boulevards, shared lanes, wayfinding, and intersection treatments.

Numerous types and widths of bicycle facilities are available, and some are more appropriate than others for any given context. To help select an appropriate facility based on traffic volume and speed, the Plan includes a facility selection matrix for urban settings and another for rural settings (Figure 5.2). These matrices include preferred and acceptable values for each facility type.

Figure 5.2: Urban Bikeway Facility Selection Matrices



The second tool provided in the Plan is a table of context characteristics of common facility types, which summarizes various attributes of the primary bicycle and pedestrian facility types used in Iowa and provides additional guidance on facility selection. The table can be found on page 96 of the document.

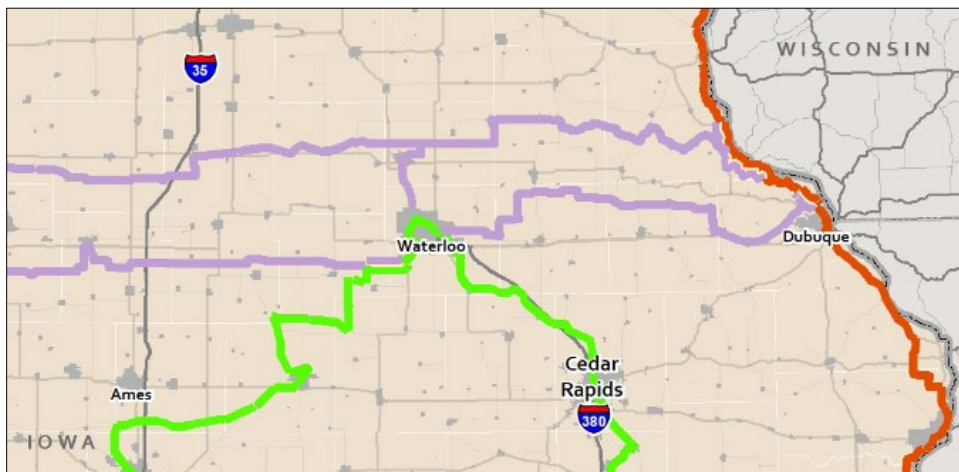
Planned statewide trails of significance to the MPO area include the Cedar Valley Nature Trail to Cedar Rapids, a trail north to Waverly, a trail east to Dubuque, and a combination of trails to the south and west toward the Des Moines metropolitan area. Figure 5.3 shows part of the Statewide Trails Vision relevant to the MPO:

Figure 5.3: Statewide Trails Vision around the MPO area



Also being planned at a statewide scale is the proposed United States Bike Routes (USBR). Of significance to the MPO area is USBR 36, a planned bike route from New York to Oregon with established segments in Pennsylvania and Indiana. Two alignments are proposed for this route. The northern route would bypass the MPO area, while the southern route would pass through the MPO area. Between the two alignments, the southern route has a greater share of on-road rural roads considered “good” for bicycling compared to the northern route (90 vs 75 percent), though the southern alignment has thirty-five more on-road miles altogether. Figure 5.4 shows the proposed routes for USBR 36 in purple, as well as the American Discovery Trail route in green.

Figure 5.4: Proposed alignments for US Bike Route 36



Iowa Law Regarding E-Bikes

Iowa enacted new law on January 1, 2022 that defines the rules around electric assist bicycles ([Motor Vehicles and Law of the Road §321.235B](#)).

Summary:

- Iowa has three classes of low-speed electric bicycles ([321.1, subsection 36A](#)):
 - Class 1: E-Bikes equipped with a pedal-assist motor which stops when the bike reaches 20 mph.
 - Class 2: E-Bikes equipped with a motor that may be used exclusively to propel the bicycle and stop when the bike reaches the speed of 20 mph.
 - Class 3: E-Bikes equipped with a motor that aids only when the rider is pedaling and stops when the rider stops pedaling or when the bicycle reaches the speed of 28 mph.
- Class 3 E-Bikes are limited to **20 MPO** on bike lanes and trails.
- Persons under the age of 16 cannot operate a Class 3 E-Bike



Read a comprehensive overview about E-Bikes, the different types, how they operate, and more at “E-Bikes in Iowa: A Guide for Electric-Assist Bicycles” by the Iowa Bicycle Coalition at <https://www.iowabicyclecoalition.org/guides/download-e-bikes-in-iowa/>.

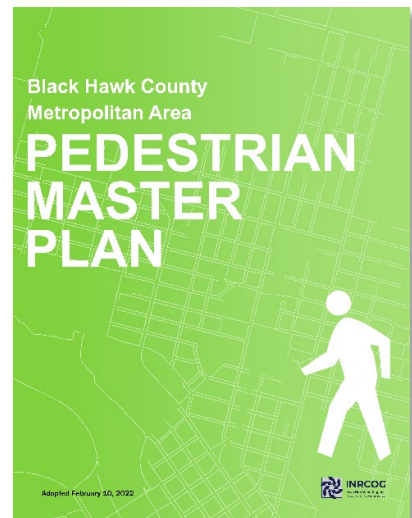
Local Guidance

Pedestrian Master Plan

The foremost planning effort related to pedestrians is the MPO Pedestrian Master Plan. Planning for the Pedestrian Master Plan began in 2014, and three public input surveys were developed specifically for the plan:

- 2015 Pedestrian Master Plan Mail-Out Survey, 344 responses
- 2015 Special Outreach Survey, 207 responses
- 2016 Public Input Meeting Survey, 92 responses

Recommendations from the Pedestrian Master Plan include various policies and procedures. Project recommendations are based in part on the results of the initial mail-out surveys. Respondents were asked to select one area they would improve for pedestrians, out of 24 areas total. The highest ranked areas were reviewed by MPO staff to determine the “focus areas” of the plan. In other words, these are the areas with the greatest demand for pedestrian improvements where new investments may have the greatest public benefit. In addition, the plan utilizes a significant amount of data from the 2017 National Household Travel Survey (NHTS) Add-on. The NHTS Add-on includes responses from 1,221 households representing 2,450 individuals in the MPO area. In addition to the survey responses, over 500 walking trips were also recorded.



Policy Recommendations in the Pedestrian Master Plan include:

1. Prioritize sidewalk construction and infill needs identified in Section 5 (of the Pedestrian Master Plan).
2. Establish an annual funding source for new sidewalk construction.
3. Establish an annual funding source for sidewalk maintenance.
4. Restructure and expand MET Transit Service.
5. Revise snow removal policies and enforcement practices.

Planning and Zoning Recommendations in the Pedestrian Master Plan include:

1. Encourage sidewalk connections in site planning for new development.
2. Update zoning and subdivision ordinances to prioritize street connectivity.
3. Encourage transit-oriented development.
4. Reduce minimum parking requirements.
5. Adopt pedestrian “through zones” on sidewalks in business districts.

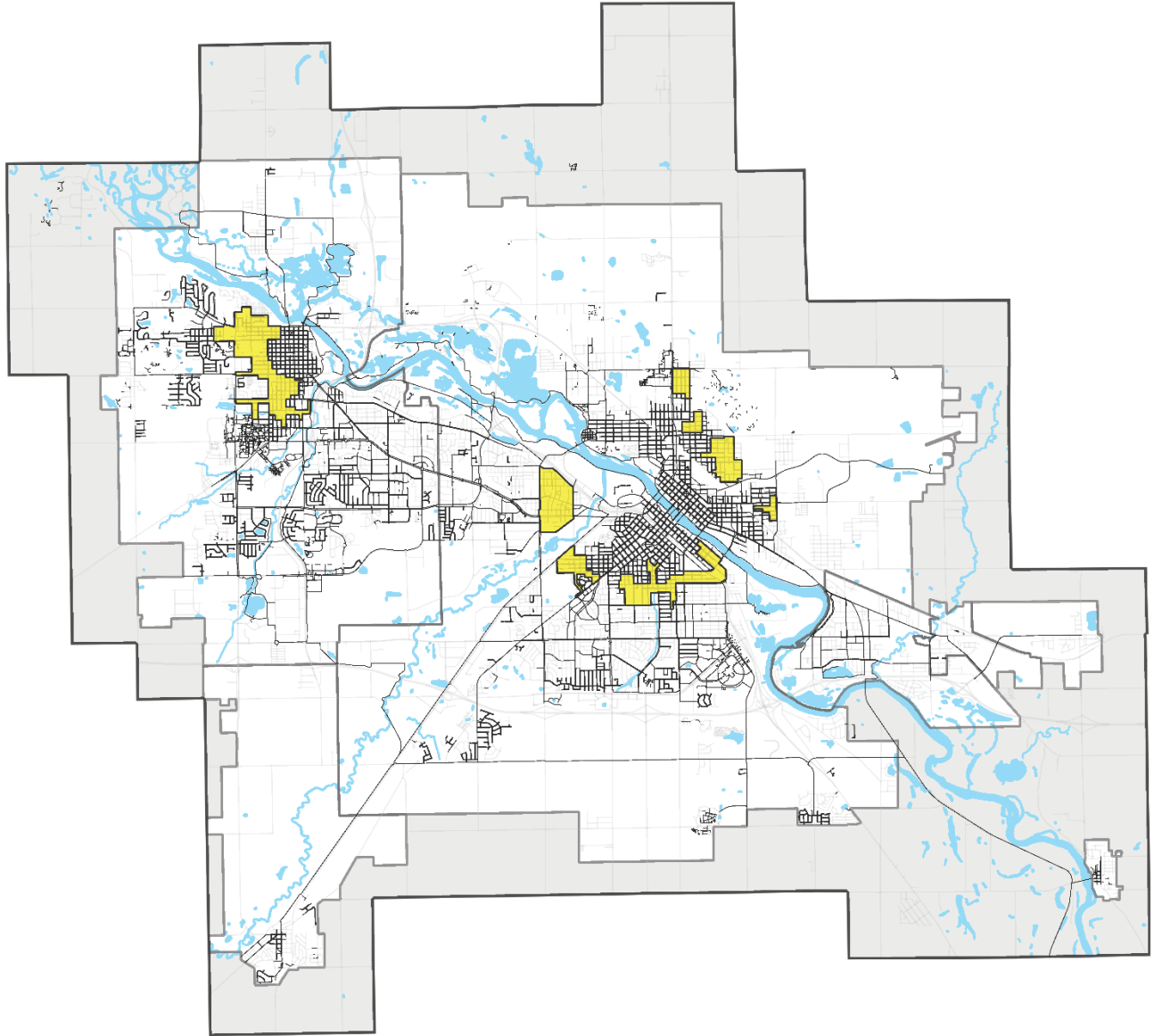
Engineering Recommendations in the Pedestrian Master Plan include:

1. Include routine inspection program.
2. Adopt street design standards to improve safety for all users.
3. Reduce design speeds along arterial and collector roads.
4. Install curb extensions along arterial and collector roads.
5. Support infrastructure for buses and bicycles.
6. Improve the design of pedestrian crossings.
7. Provide adequate pedestrian accommodation during construction.

Traffic Control Recommendations in the Pedestrian Master Plan include:

1. Adopt street design standards to improve safety for all users.
2. Phase out pedestrian actuated signals.
3. Support infrastructure for buses and bicycles.
4. Apply high visible markings (zebra, continental) at major crosswalks.

Some of these recommendations are actively being implemented or already have by the Waterloo Complete Streets Advisory Committee and Cedar Falls Bicycle and Pedestrian Commission, such as restructuring MET Transit Service and encouraging sidewalk connections for new development. Others, like encouraging transit-oriented development remain as opportunities to explore.



Priority Infill Areas in Waterloo and Cedar Falls

- Priority Area
- Sidewalk or Trail



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Local Advisory Committees

In 2013, the City of Waterloo and City of Cedar Falls both adopted Complete Streets resolutions consistent with the National Complete Streets Coalition guidance. Adopting a Complete Streets policy was a prerequisite of becoming a certified Blue Zones community, and both cities have since attained Blue Zones certification. The goal of Blue Zones is to improve the health and wellness of areas by encouraging citizens to take individual actions, and by efforts through employers, schools, restaurants, grocery stores, and city policy.

One outcome of these resolutions was the creation of an advisory committee in each city. These committees are the Waterloo Complete Streets Advisory Committee and the Cedar Falls Bicycle and Pedestrian Commission. MPO staff attend both meetings to provide input, seek input, and provide updates on related projects and initiatives. While both committees share a similar role, the makeup of their attendees is notably different. In Waterloo, the committee is chaired by a member of the community, but most attendees are affiliated with the City government. Conversely in Cedar Falls, many committee members are Cedar Falls residents, and only one or two City staff attend each meeting. Both committees address similar topics and face similar challenges.

The Waterloo Complete Streets Advisory Committee is chaired by a Waterloo resident and includes representation from a variety of City departments, community organizations, avid bicyclists, and interested individuals. City staff regularly provide updates on street reconstruction projects and commercial developments to identify opportunities for improving sidewalk connectivity. For larger projects, such as the University Avenue reconstruction project, engineering firms have attended meetings and presented project updates to allow the committee to provide input directly. The committee also had a hand in redesigning the Park Avenue bike lanes discussed later in this chapter. The committee chair provides updates to the Mayor and City Council and occasionally submits recommendations to City department heads. The committee actively works to increase representation from the broader community.

The Cedar Falls Bicycle and Pedestrian Commission is chaired by a Cedar Falls resident and includes representation from City planning, law enforcement, the school district, and several members of the community. From 2009 to 2027, Cedar Falls has been awarded the status as a Bronze Bicycle Friendly Community by the League of American Bicyclists, and the city and committee plan to actively retain its status through continued bicycle infrastructure planning. The committee occasionally makes recommendations to the City regarding specific projects and potential improvements for bicyclists. More predominantly, the committee engages in a variety of educational and community events including Bike Rodeos, Bike to School events, Pedal Fest, a Mayor's bike ride, and Bike Month activities in May. The committee also conducts outreach by submitting content to the city's quarterly newsletter, its Facebook page, and occasionally on local access television Channel 15. A small amount of funding is allotted to the committee by the City for education, and the committee can send a representative to relevant conferences including the Iowa Bicycle Summit. While this committee has significant community involvement, it currently lacks representation from City engineers and Council members.

COMPLETE STREETS WATERLOO



Existing Facilities

The MPO area has a variety of facilities for bicycles and pedestrians including over 115 miles of paved trails. However, the definition of a paved trail is inherently up to interpretation. Today's standard for new trail construction is 10 feet wide, and eight-foot-wide trails are acceptable in certain circumstances such as where low bicycle and pedestrian traffic is anticipated. Many trail segments in the MPO area were constructed before this standard was adopted and are only six to eight feet wide. Also, areas such as the University of Northern Iowa campus and Downtown Waterloo have several pedestrian facilities at least eight feet wide, though their function is not conducive for bicycle traffic. Existing trails presented in this document represent trails that are conducive for bicycle travel and are at least part of an eight to ten-foot-wide trail.

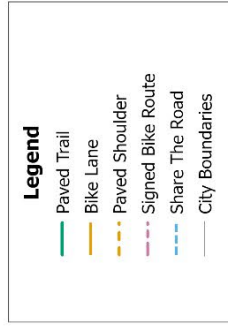
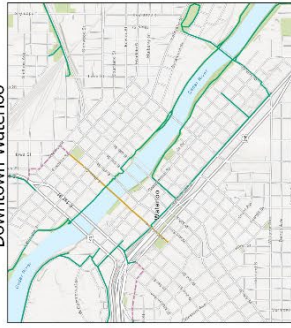
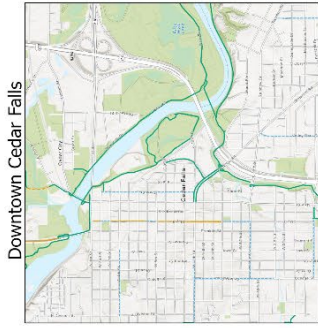
Currently, paved trails make up most separated bicycle facilities in the MPO area. The MPO area also has bike lanes, paved shoulders, shared lane markings (or “sharrows”), and signed bike routes. Table 5.3 shows the total centerline length of each facility type in the MPO area. The term buffered bike lanes refers to a bike lane with a painted buffer as described previously and may or may not include vertical infrastructure such as delineator posts. The term on-road path refers to a segment of roadway that is designated for both bicycle and pedestrian travel, usually as part of a much longer paved trail.

The development of the first protected bike lanes in the MPO area began in 2017 along Park Avenue in Waterloo. The term protected refers to any sort of vertical protection between a bike lane and driving lane, such as delineator posts, planters, or parked cars. Development of the Park Avenue bike lanes was spearheaded by MPO staff and the Waterloo Complete Streets Committee. MPO staff helped facilitate discussions between multiple City departments and elected officials, and staff also helped develop the initial planning-level design of the protected bike lane concept. Six years later, in 2023, the Park Avenue bike lane project was revisited with the goal of redesigning, enhancing, and expanding them. More information can be found under the “Current and On-Going Projects” section.

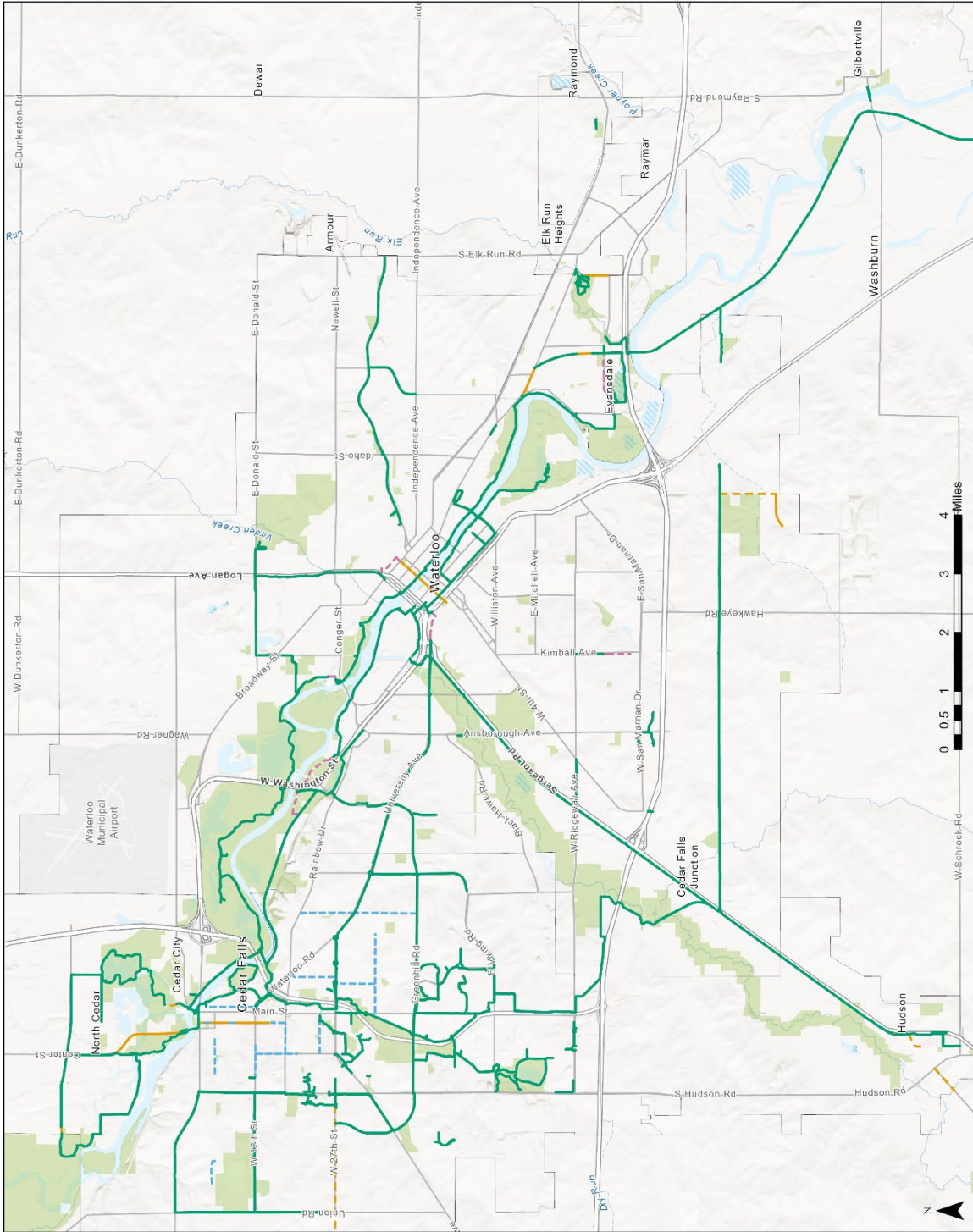


Existing Bicycle Facilities

Map 5.1



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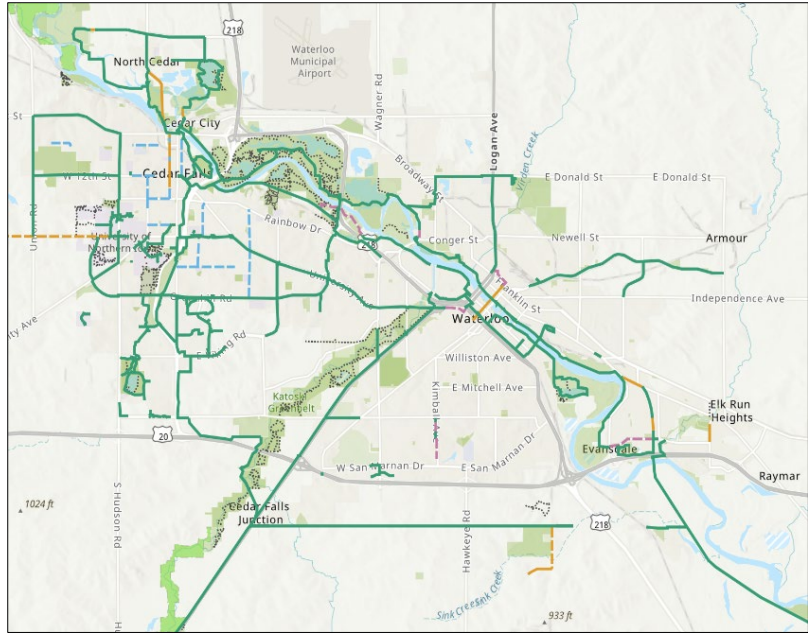


Current and Ongoing Projects

Interactive Cedar Valley Trails Map

Every couple of years, INRCOG updates the Cedar Valley Trail and Recreation paper guide which entails all the trails in the MPO region. In 2021, local nonprofit organizations asked INRCOG to create an online, interactive version of this map. The Interactive Cedar Valley Trail Map launched in May of 2022 and is frequently updated to include new features or expand upon current ones. The map currently shows over 125 miles of paved trails, as well as dirt trails, on-road bicycle infrastructure, local bike retailers, bird watching spots thanks to a collaboration with the Prairie Rapids Audubon Society, and much more.

The map utilizes a color-blind friendly color scheme and is currently being expanded to include INRCOG's six-county region. Visit the map at <https://arcg.is/vvGn>

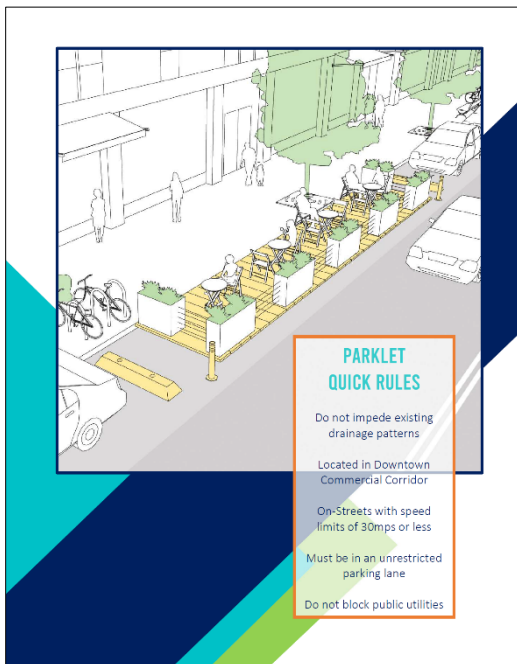


Interactive Cedar Valley Trails Map QR-Code Decals

Following the development of the interactive trail map, QR-code decals were created by MPO staff and funded by the Cedar Valley Trails Partnership. The jurisdictions of Waterloo, Cedar Falls, Evansdale, and Hudson, as well as Black Hawk County and George Wyth State Park, collaborated to install decals on over 170 Wayfinding signs throughout the MPO. The Wayfinding signage is a previous project also conducted by MPO staff. When the QR-code is scanned with a smartphone, it takes users to the interactive map to highlight the various amenities and recreational opportunities our trail system has to offer. The map also has a locator button, allowing users to locate themselves along the trail map if needed. Decals were distributed and installed in the Summer and Fall of 2023.

Park Avenue Bike Lanes Redesign

While the initial Park Avenue bike lanes in downtown Waterloo were a step in the right direction, the public had difficulty using them for several reasons. A confusing layout for both bicyclists and drivers, rough pavement conditions, an incomplete network, and a general lack of cyclist-right of way knowledge led to bike users avoiding Park Avenue entirely. In response, MPO staff developed a renewed concept design for bike lanes on Park Avenue, Commercial Street, and E 4th Street in May of 2023. Comprehensive solutions were identified through a meticulous process of researching nationwide best practices, as well as gathering valuable insights from dedicated stakeholder committees and public comments. Collaboration between MPO staff, Waterloo Complete Streets Advisory Committee, and the City of Waterloo Engineering led to a finalized design that simultaneously aligned with the Park Avenue bridge reconstruction project. This collaborative approach helped address concerns and ensured that the proposed solution would meet community needs. The improved and expanded bike lanes will provide a safer and more attractive bicycling environment, encouraging more cyclists to use them and visit Waterloo's downtown area.



Waterloo Downtown Parklets

Main Street Waterloo, Waterloo Complete Streets Advisory Committee, and MPO Staff collaborated to develop a parklet program for downtown Waterloo. Together, a manual, guidelines, and application process were developed for downtown businesses. The overall goal of the parklet program is to enhance the livability, walkability, and beautification of downtown Waterloo. By using underutilized parking spaces, this program aims to create a lively public realm for community interaction while boosting local business support. The Parklet Program was presented to Waterloo City Council in August of 2023, and the parklet application process is anticipated to begin in 2024. The parklets themselves are meant to be a temporary structure that can be assembled and placed outside during the spring, summer, and fall months, then disassembled during the winter months. The City of Waterloo will annually accept applications.

MPO Complete Streets

Enhancing the safety and mobility of our roadway users can be achieved through the adoption of Complete Streets policies. Complete Streets involves the strategic planning, design, and operation of our transportation network to accommodate all types of roadway users. MPO staff actively participate in the Waterloo Complete Streets Advisory Committee, dedicated to creating streets that provide a safe, comfortable, and convenient environment for all road users. This committee draws its principles from both the MPO Pedestrian Master Plan and the City of Waterloo's Complete Streets Policy. MPO staff also contribute to the Cedar Falls Bicycle and Pedestrian Commission, with the aim of improving the quality of life through the increased opportunity for safe walking and bicycling as viable means of transportation and physical activity. The committee is guided by the Cedar Falls Bike Network Plan, Cedar Falls' Complete Streets Policy, and the MPO Pedestrian Master Plan.

The MPO is actively collaborating with established Complete Streets initiatives to further its goals. These initiatives adopt a comprehensive approach to urban and transportation planning, emphasizing the safety, accessibility, and convenience of all road users. By aligning its efforts with these ongoing activities, the MPO is set to play a pivotal role in formulating a comprehensive MPO-wide Complete Streets Policy, slated for completion in 2024. This policy will establish formal guidelines, principles, and objectives for guiding transportation planning, and project development efforts. Its aim is to ensure that transportation projects across the region contribute to safer, more accessible, and sustainable transportation systems that benefit all MPO residents. Additionally, it will help synchronize local priorities with federal transportation objectives and requirements, promoting a more inclusive and comprehensive approach to infrastructure development.



MPO staff will additionally develop a comprehensive Complete Streets Project Prioritization Plan. This plan is a strategic document that delineates the methodology and criteria used for the prioritization and selection of transportation projects that align with the MPO Complete Streets Policy. The plan's primary objective will be to offer guidance for the decision-making process and the allocation of MPO federal funds, ensuring that transportation projects are in alignment not only with the MPO Complete Streets Policy but also with nationwide transportation goals. As part of this plan, projects that closely align with the MPO Complete Streets Policy will receive elevated priority during the project ranking and selection process.

Jurisdictional Projects

There are several ongoing bicycle and pedestrian infrastructure projects underway in the MPO area. The Park Avenue bridge reconstruction project in Waterloo will include shared use paths that connect to on-street bicycle lanes on Park Avenue. From there, the Park Avenue Bike Lane Redesign project could provide connections to Commercial Street and East 4th Street. The Main Street reconstruction project in Cedar Falls between Seerley Boulevard and 6th Street includes on-street bike lanes and sidewalks to enhance bicycle and pedestrian mobility. Other projects with bicycle/and or pedestrian facilities expected include a trail along La Porte Rd and US 218 from Shaulis Rd to W 18th St, Lafayette Rd Trail and Elk Run Creek Levee Trail in Evansdale, and Sergeant Road Trail Bridge Replacements. Furthermore, the City of Waterloo is planning to incorporate bike lanes as part of a transformative one-way to two-way conversion project for 4th 5th and 6th Streets in the downtown area. In September 2023, the City applied for Reconnecting Communities and Neighborhoods Grant funds to complete this pivotal complete street project.

Projects completed between 2019 and 2023 that incorporated a paved trail project include the following:

- Union Road Trail, Cedar Falls
- Cedar Heights Drive Trail Extension, Cedar Falls
- Lake Street Trail, Cedar Falls
- US 63 Pedestrian Underpass, Hudson
- University Avenue Trail, Waterloo
- US 63 Trail Extension, Waterloo
- Cedar Valley Lakes Trail Reconstruction and Widening, George Wyth State Park

2050 MPO Bikeway Plan

The MPO Bikeway Plan is a comprehensive and forward-thinking initiative aimed at enhancing cycling infrastructure and promoting sustainable transportation in the Black Hawk County metropolitan area. This plan outlines a network of interconnected bikeways, paths, and trails that prioritize safety, accessibility, and connectivity for cyclists. It envisions a more bike-friendly community, encouraging active transportation, reducing traffic congestion, and improving the overall quality of life for residents.

The 2050 Bikeway Plan builds off the 2045 Plan which provided detailed reviews of roadways to determine feasible facility types. Several factors were considered including right-of-way, trees, driveways, drainage areas, traffic volumes, and lane configurations. Connectivity to businesses and educational institutions was also a priority. The Plan also identifies low-volume residential streets that can be used by bicyclists without any additional treatments with the intent of connecting more separate bicycle facilities.

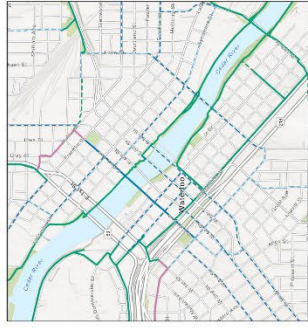
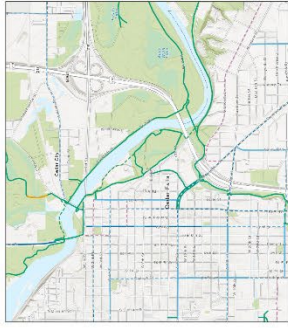
Table 5.3 shows the existing mileage of each facility type, and the existing and proposed mileage combined in the 2050 MPO Bikeway Plan. As noted above, a major emphasis of this plan is identifying low-volume roads suitable as part of a bicycle network, and the planned increase in signed on-road bike routes and shared lane markings reflects this.

Table 5.3: Existing and proposed miles of bicycle facilities

Facility Type	Existing Miles	Proposed Miles	Existing + Proposed Miles
Paved trails (including on-road paths)	115.8	36.6	152.4
Bike lanes (including buffered and one-way)	3.4	49.8	53.2
Paved shoulders	3.9	36.1	40.0
Signed on-road bike routes	3.3	22.5	25.8
Shared lane markings (i.e., sharrows)	7.0	26.6	33.6
Total	133.4	171.6	305.0

MPO Bikeway Plan

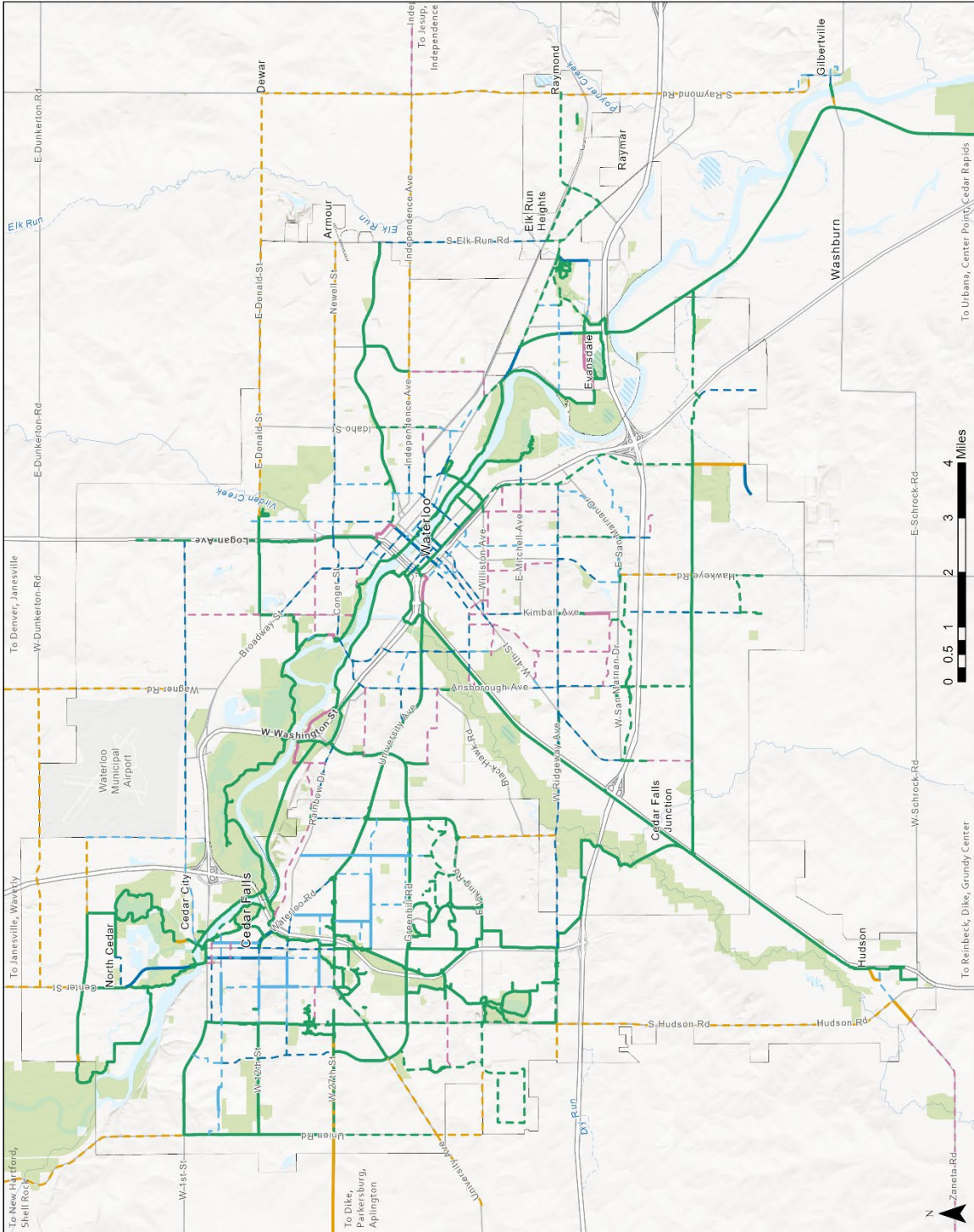
Map 5.2



Legend

- Paved Trail
- Bike Lane
- Paved Shoulder
- Signed Bike Route
- Share The Road
- - - Proposed Paved Trail
- - - Proposed Bike Lane
- - - Proposed Paved Shoulder
- - - Proposed Signed Bike Route
- - - Proposed Share the Road
- City Boundaries

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Notable Past Projects

Trail Wayfinding Signage

In 2016, the Cedar Valley Trails Partnership secured a grant from Principal Financial for wayfinding signs on the paved trails in the metropolitan area. The Partnership reached out to MPO staff for guidance, and the MPO agreed to plan the implementation of the new signs. These signs would be implemented in several jurisdictions and would effectively replace smaller wooden signs scattered along the trails. Meetings were held with representatives from the Partnership, each City, and George Wyth State Park.

MPO staff determined the location of each sign, the destinations displayed on each customized sign, and the optimal routes to each destination. The sign layout and design were developed as a committee, using graphic elements from the Cedar Valley Trails Partnership logo and Prairie Pathways interpretive panels.



Each sign also shows the distance to each destination, as well as the estimated time it would take by bicycle based on an average speed of 10 miles-per-hour. Each customized sign displays the closest destination first, followed by any other destination in the same direction, and then the next closest destination in a different direction.

Altogether, more than 170 customized wayfinding signs were installed throughout the MPO area, in addition to dozens of standard bike route sign assemblies. There was a total of three phases for the project to utilize all remaining grant funds. All signs have since been installed.

Bicycle Ordinance Updates

In 2018, the City of Hudson was the first city in Iowa to adopt an updated bicycle ordinance based on the Iowa Bicycle Coalition's model ordinance. The model ordinance is a template that includes seventeen sections addressing a variety of topics including rules for lamps and reflectors, obedience to signals, and passing a bicyclist. In the MPO area, the last known updates to any city's ordinances related to bicycling were in the 1970s.

Waterloo and Cedar Falls have held discussions among staff to update their own ordinances. In Waterloo, the ordinance update is led by the city's Traffic Operations department. In Cedar Falls, discussions are led by the Bicycle and Pedestrian Commission with participation from the city's Planning and Police departments.

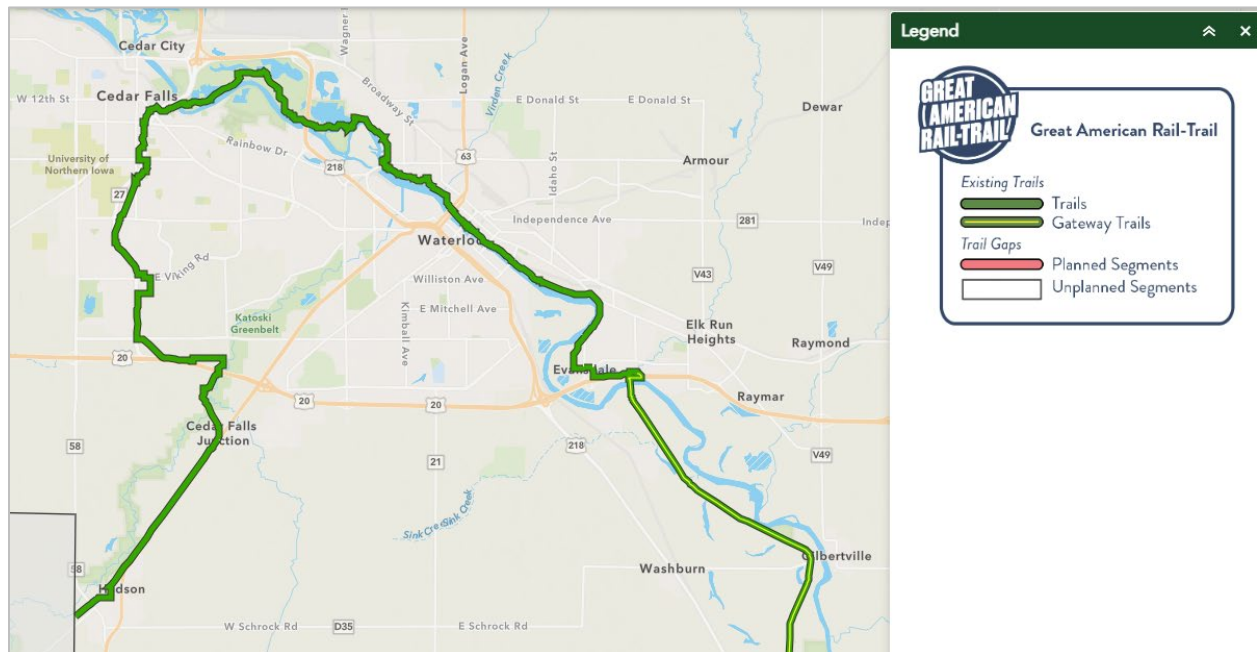
American Discovery Trail

The American Discovery Trail (ADT) is a designated east-west bicycle route extending from the East Coast to California. The ADT uses some paved trails, though it is designated along roadways. The official ADT route splits into a Northern Route and Southern Route between Ohio and Colorado, and the MPO area is situated along the northern route. In fact, the trail through George Wyth State Park is the northernmost point along the entire trail nationwide.

The ADT includes the Cedar Valley Nature Trail, the Evansdale Nature Trail, portions of the Cedar Valley Lakes Trail and South Riverside Trails, and the Cedar Prairie Trail. Locally, the route has been considered to include the entirety of the two riverfront trails between Pfeiffer Park in Cedar Falls and Downtown Waterloo. However, the official route as of 2016 is a single linear route, and it does not exclusively follow the existing riverfront trails. A sizable portion of the official route follows Commercial Street in Waterloo, even though there are now paved trails on both sides of the river parallel to the official route. It is a goal of the MPO to coordinate with the ADT Board to realign the official route through the MPO area to make optimal use of the existing paved trail network. Map 5.3 shows the official ADT route, other routes identified as part of the ADT in the past, and areas of the trail where a realignment will be possible or necessary.

Great American Rail-Trail

The vision of the Great American Rail-Trail, a project of the Trails-to-Trails Conservancy, is to be the first trail that will be entirely bikeable across the country and, when completed, separated from vehicle traffic. This trail would stretch more than 3,700 miles between Washington, D.C., and Washington State, connecting more than 125 existing rail-trails, greenways, and other multiuse paths. The designated path travels through Evansdale, Waterloo, Cedar Falls, Hudson, and George Wyth State Park.



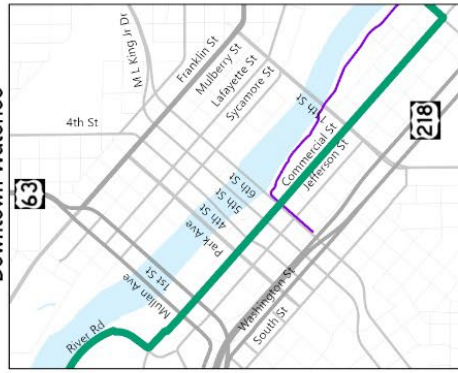
www.railstotrails.org/greatamericanrailtrail/

American Discovery Trail Map 5.3




Downtown Cedar Falls



Downtown Waterloo

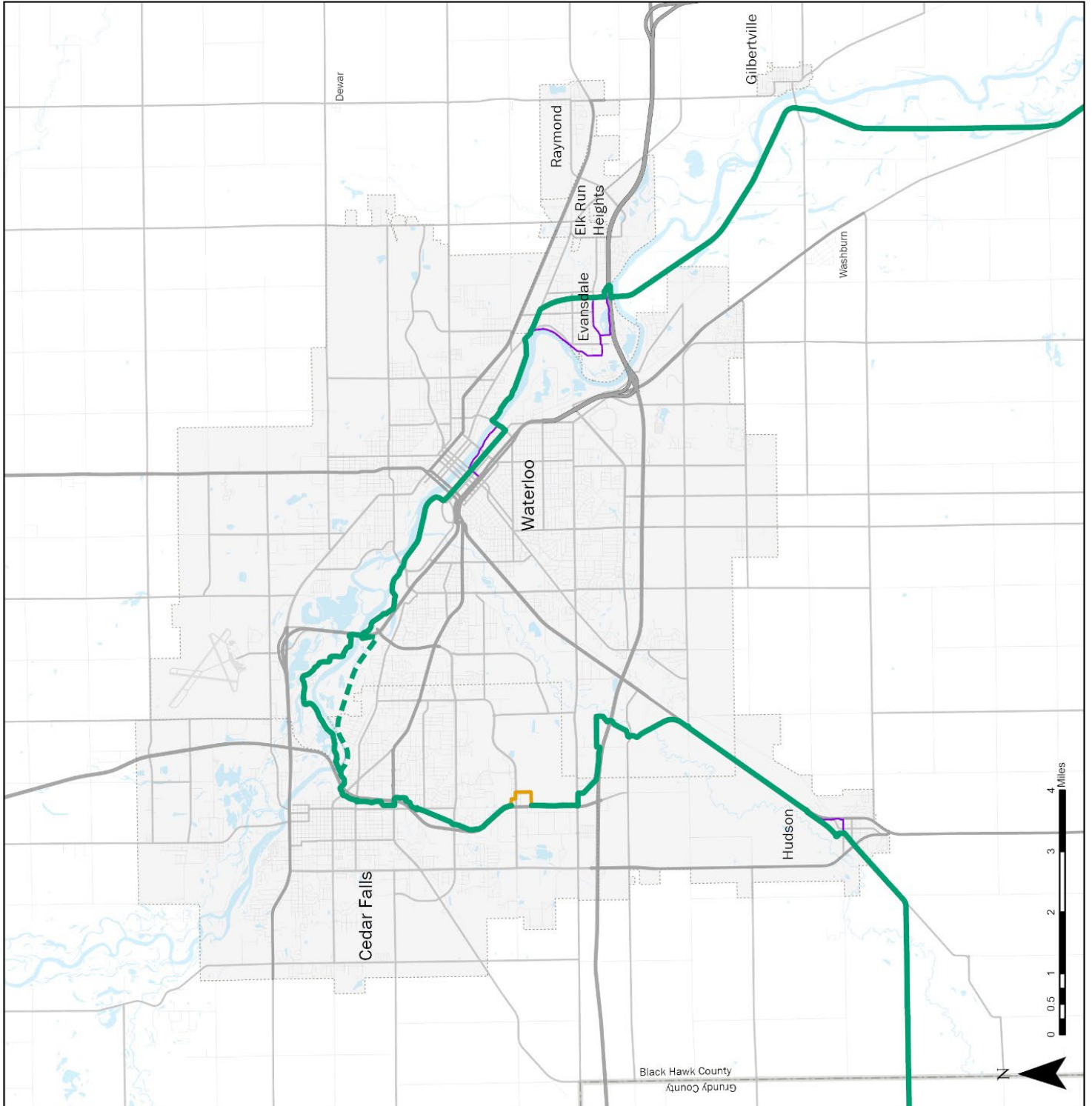


Legend

-  Official Route
-  Official Alt. Route for High Water
-  Required Route Realignment
-  Potential Route Realignment



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Iowa Data Bike

In fall of 2022, MPO staff borrowed the Iowa Data Bike from the Des Moines Area MPO. The Iowa Data Bike is an electric assist bicycle that contains various equipment, including a 360-degree camera that uploads imagery to Google Street View, a smartphone that runs the “rRuf” app which measures roughness of trails, and a GoPro camera that takes photos of trail conditions. MPO staff borrowed the data bike for approximately one month and rode 97 of 128 miles of trails in the Cedar Valley. Regional and state significant trails were prioritized. Over 3,000 360-degree images were taken, and over 44,000 pavement photos were taken. The 360-degree images can be found on Google Street View on trails within the Black Hawk County MPO boundary. The data will help inform a long-term maintenance strategy for each jurisdiction’s trail network.

Iowa Data Bike

The Data Bike is a proof-of-concept initiative by the Des Moines Area Metropolitan Planning Organization in partnership with Iowa Department of Public Health and Iowa Natural Heritage Foundation. Using an app that senses the roughness of pavement, the Data Bike will generate data scoring the condition of trails. The Data Bike will also collect 360-degree imagery along trails for Google Street View.



Other Non-Motorized Projects

Water Trails Master Plan

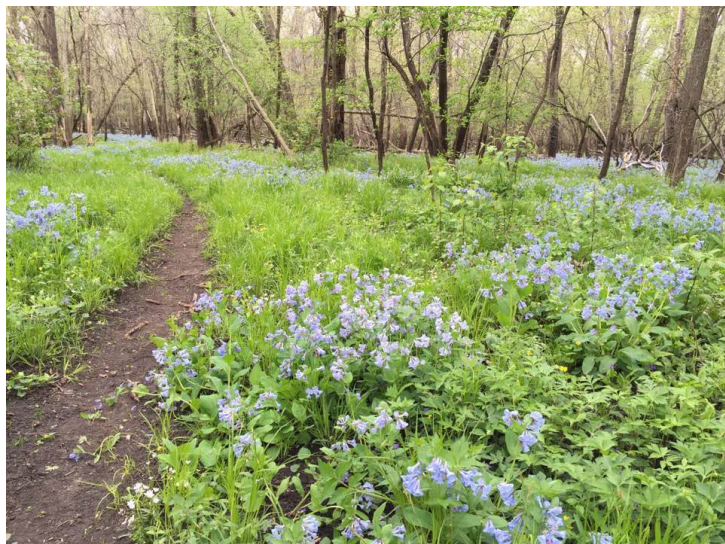
The Black Hawk County Water Trails were officially designated by the State of Iowa in September 2022. INRCOG worked to develop the Water Trails Master Plan for over seven years. This project was funded through the Iowa Department of Natural Resources (DNR) and identifies site-specific improvements to river access throughout the County, including about twenty sites in the MPO area. Many of these river accesses are situated near or along paved trails, creating multiple opportunities for “pedal paddle” trips. These are trips where a paddler drops off their bike at their take-out location, drives to the put-in location, paddles downstream, locks up their canoe or kayak, bicycles back to their vehicle, and returns with the vehicle to pick up their canoe or kayak.

Two public input meetings were held for the development of the Water Trails Master Plan. One was held in July, and another was held in August of 2018. 92 individuals completed surveys to help guide development of the water trails. The plan is available at the INRCOG office and at <https://cedarvalleywatertrails.wordpress.com/>.



Soft Trails

The MPO features a network of soft trails that provide hiking, bicycling, running, and skiing opportunities. There are over 40 miles of soft trails through the metropolitan area with the heaviest concentrations in George Wyth Memorial State Park and Hartman Reserve. The Cedar Valley Association for Soft Trails (CVAST) is a local group dedicated to promoting, maintaining, and building sustainable soft trails in the area. A variety of events are held throughout the year to encourage people to explore and enjoy the soft trails in the metro area. CVAST provides an online interactive map to identify tracks and the locations of parking, water, and restrooms. Visit their website at www.cvast.org.



Water Trails in Black Hawk County

Map 5.4

Downtown Cedar Falls



Downtown Waterloo

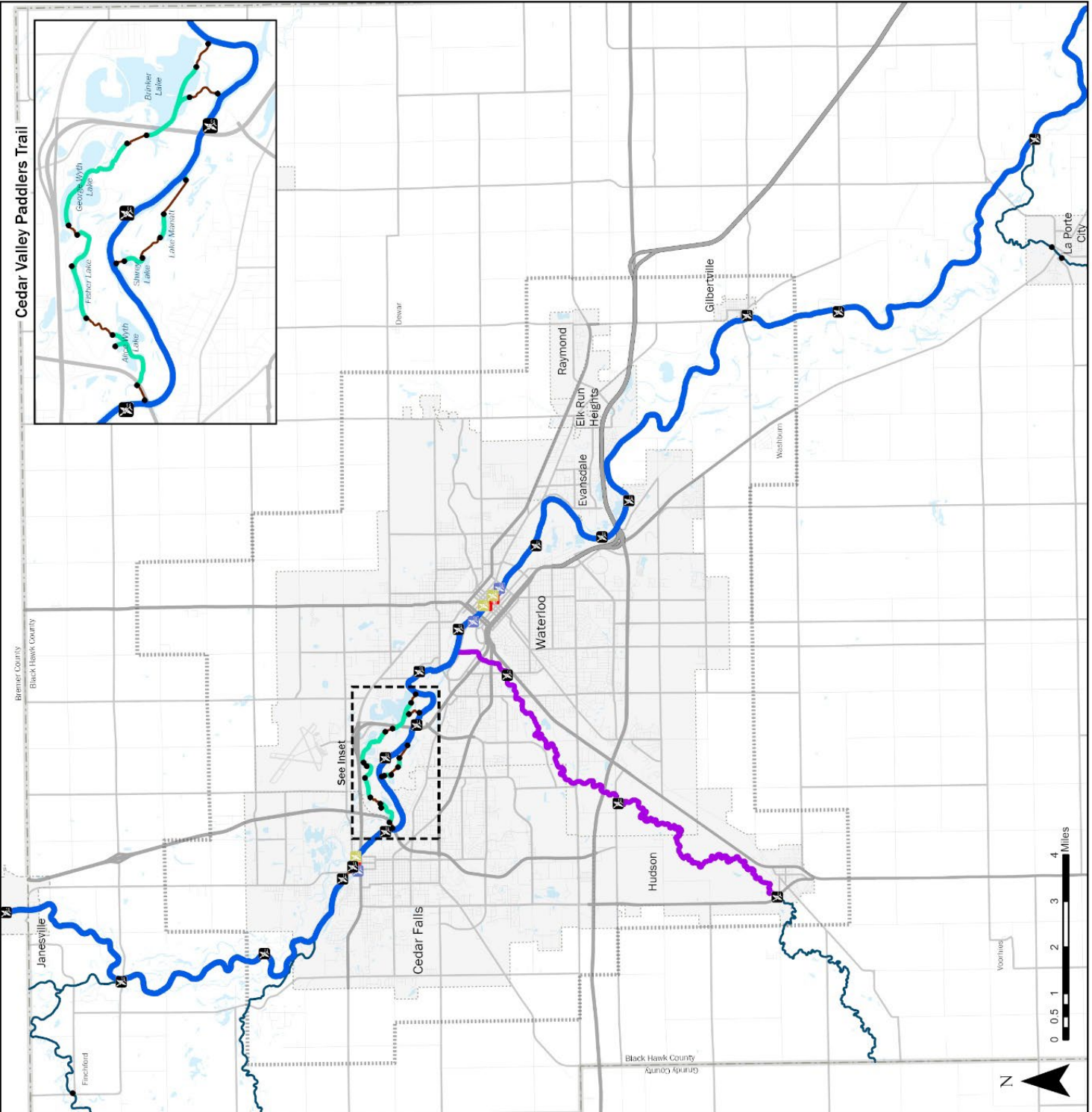


Legend

- MPO Boundary
- Cedar River Water Trail
- Black Hawk Creek Water Trail
- Cedar Valley Paddlers Trail
- Other Stream
- Portage
- River Access, Existing
- River Access, Potential
- River Access, Changes Planned Locally
- Other Access
- Dam



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Safe Routes to School

Safe Routes to School (SRTS) is a nationwide effort to promote children safely walking and bicycling to school through engineering, education, enforcement, encouragement, and evaluation (5-E's). SRTS projects are eligible under the Transportation Alternatives Program (TAP). INRCOG has been awarded Statewide TAP funding in multiple years to fund a staff person to coordinate a regional Safe Routes to School initiative in partnership with the Iowa Bicycle Coalition and Upper Explorerland Regional Planning Commission in Decorah. The goal of the program is to increase the number of students walking and bicycling to school with the goal of improving the overall health and well-being of the region's youth. To date, INRCOG has done the following:



Clarksville Library summer bike safety clinic, 2022

- Supported Safe Routes related education and encouragement programs at 38 elementary and middle schools for 22 districts in INRCOG's six-county area.
- Supported 28 community organizations and 8 daycares in hosting their own bike rodeos and safety events.
- Received grants from several area community foundations to distribute over 1,800 new bike helmets to those in need.
- Collaborated with schools and caregivers to start Walking School Bus programs encouraging physical activity and safety for over 75 students and continues to advocate to form new groups.
- Worked with four schools to host Walk, Bike and Roll to School Day events, encouraging all students to rethink their daily commute options.
- Overall outreach to 11,320 youth and 1,682 adult "roll" models in INRCOG's six-county area.
- Continuously attend area community wellness coalitions that emphasis on increasing physical activity, bike skills, and traffic safety awareness.
- Provide input for the development of statewide resources, curriculum, and guides.

Though there is no dedicated Safe Routes to School funding for infrastructure projects anymore, the MPO is committed to maintaining the Safe Routes to School Coordinator position to continue and grow these activities.



Grund Center Middle School -Bike Skills Rodeo, 2022

2022 Public Input Survey

In September 2022, MPO staff conducted a pair of internet-based surveys. These surveys were aimed at collecting feedback from residents within the jurisdictions of the MPO. The subsequent details provided here highlight survey responses that hold significance within the context of this chapter.

Figure 5.7: 2022 Public Input Survey, Round Two results of where respondents are walking to:

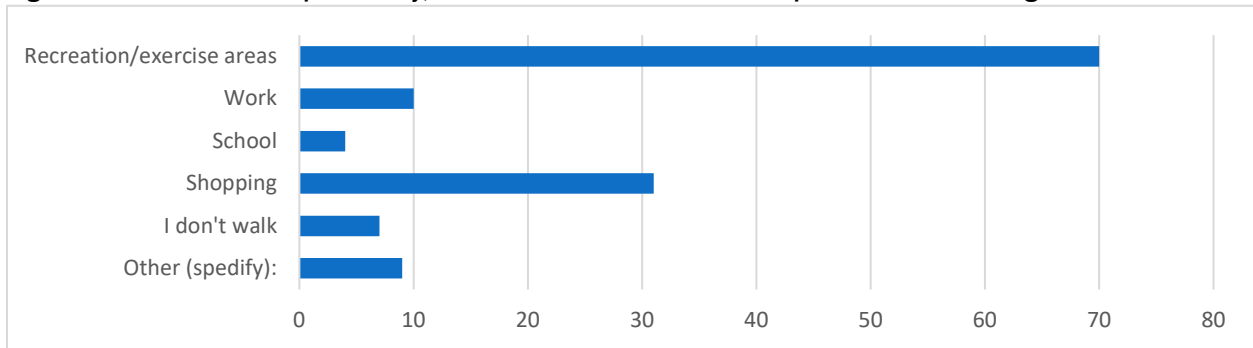
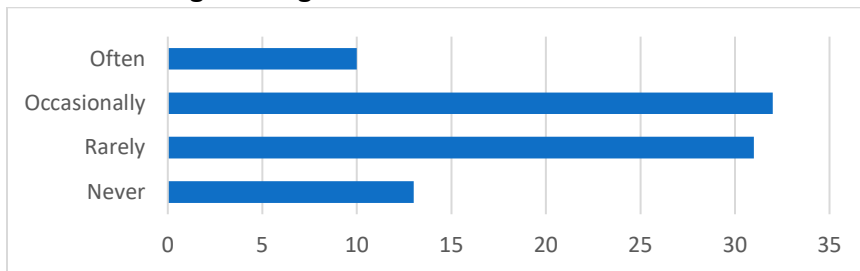
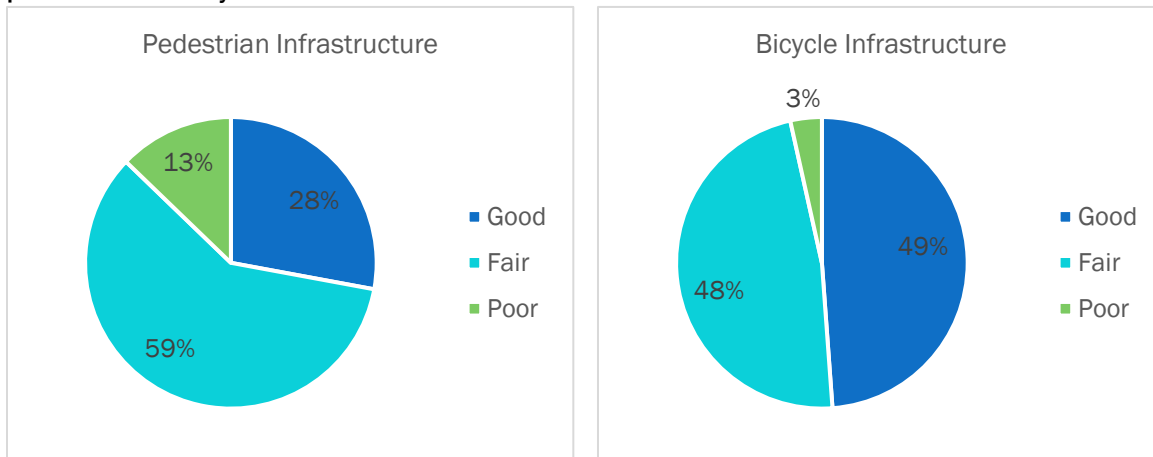


Figure 5.8: 2022 Public Input Survey, Round Two results of how often respondents walk to a destination instead of driving or taking a bus:



Figures 5.9 and 5.10: 2022 Public Input Survey, Round Two asking respondents how they rate MPO pedestrian and bicycle infrastructure:



In the second round of surveys, participants were asked about the road they would prioritize to improve pedestrian infrastructure. The most frequently mentioned roads for improvement include West 4th Street, San Marnan Drive, Kimball Avenue, Ridgeway Avenue, and Lafayette Road.