

LET'S GET  
**ROLLING** >>  
IOWA CITY BICYCLE MASTER PLAN



BICYCLE MASTER PLAN  
IOWA CITY, IOWA  
SUMMER 2017







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## SECTION 1 Executive Summary





## Executive Summary

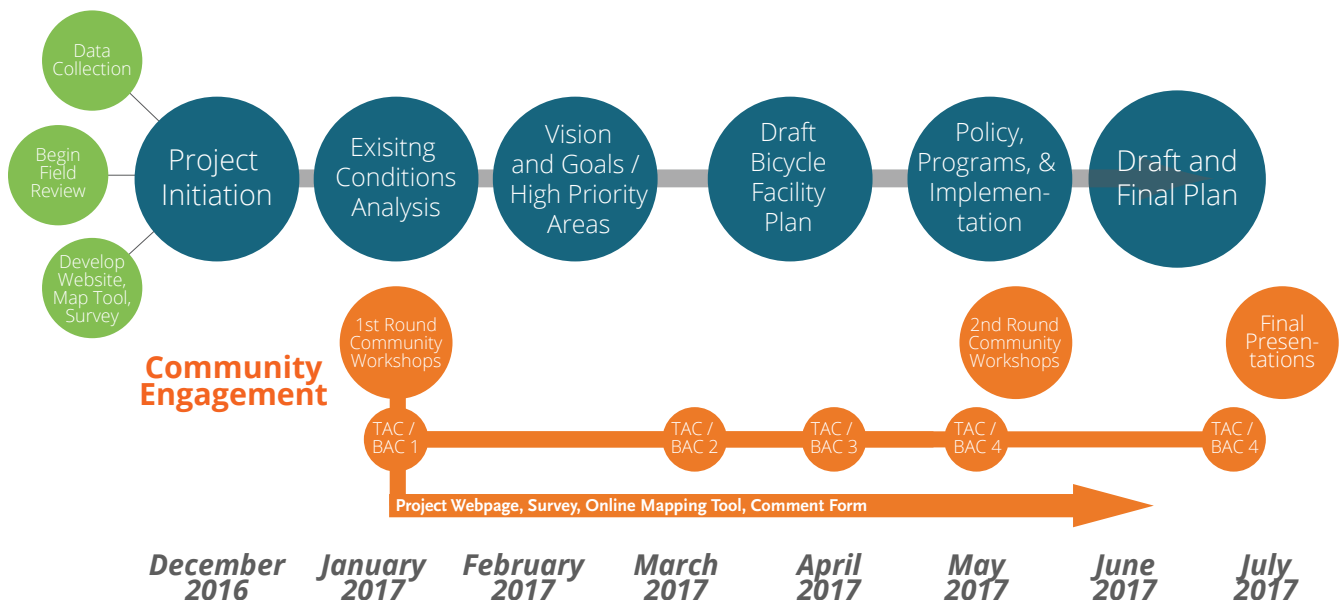
Bicycling is an integral part of the character and identity of Iowa City. From families traveling on the city's scenic greenways and trails, to children and young adults bicycling to school, to adults traveling to work and running errands, people of all ages and backgrounds are traveling throughout the city by bike. In recent years, Iowa City has demonstrated its commitment to making bicycling a safer, easier, and more convenient form of transportation and has earned the League of American Bicyclists' (LAB) Silver Bicycle-Friendly Community (BFC) designation. This Bicycle Master Plan provides the framework and recommendations for the city to become a Gold-Level BFC.

The plan is divided into five chapters. The first chapter outlines the plan and states the vision, goals, and objectives to guide the planning process and subsequent implementation. The second chapter describes the current bicycling environment, characteristics of the transportation system, programs and activities to encourage bicycling and raise awareness for all road users, and plans and

policies that impact bicycle transportation. The third chapter focuses on bicycling needs and includes an examination of demand for bicycling facilities and a summary of the public engagement activities and community input that shaped the plan recommendations. The fourth chapter outlines the physical and programmatic recommendations to achieve the vision of a more bikeable community. The fifth and final chapter provides a framework for implementing the plan and includes early implementation actions, cost estimates for bicycle facilities, funding sources, a project phasing strategy, and maintenance considerations.

## Process

The planning process, which took place over the course of eight months from December 2016 to July 2017, is grounded in objective analysis and best practices in bicycle network and facility design, and driven by the vision and ideas of the many community residents and stakeholders who participated in the process. Key engagement events, including technical advisory committee (TAC) meetings,



bicycle advisory committee (BAC) meetings, and public open houses, were scheduled to share information and garner feedback at critical stages during the eight-month planning period.

## Vision and Goals

The plan's vision reflects Iowa City's needs, values, and aspirations for bicycling by depicting the community's desired future for bicycling. Supporting goals and objectives provide clear paths to achieve this vision.

### The Vision

**Iowa City is a bicycle-friendly community in which bicycling is a safe, comfortable, convenient, and preferred mode of travel and recreation for people of all ages and abilities. Iowa City residents and leaders value bicycling as a means to support a strong and diverse economy, foster healthy and active lifestyles, promote transportation equity, advance environmental sustainability, and enhance quality of life.**

### The Goals

Six goals provide general themes that mirror the LAB's Building Blocks of a BFC. Together, these six goals provide a comprehensive approach to creating social and physical environments that welcome and support bicycling by people of all ages and abilities.

### Existing Conditions

Iowa City's existing bikeway system consists of more than 85 miles of off-street trails and sidepaths and on-street bike lanes, marked and signed routes, and wide shoulders. The city's linear trails and greenways provide excellent recreational opportunities for people of all ages and abilities, but the

on-street network, which lacks in both connectivity and coverage, does not support bicycling activity to a similar degree. While many local roads throughout Iowa City offer quiet, comfortable corridors for bicycling, major barriers like difficult intersections, major highways, and the Iowa River limit people's ability to travel by bicycle to everyday destinations like parks, schools, places of employment, shopping, and entertainment. Iowa City is aware of these challenges to bicycling and has been actively addressing them through continued bikeway development and through planning and policy tools to direct municipal resources and support bicycle-friendly private and public development.

### Needs Assessment

An assessment and understanding of community needs for bicycle transportation and recreation is necessary to effectively direct local resources and investments, Iowa City and its community partners. Through an objective analysis of trip origins and destinations and a broad range of feedback generating through various public engagement activities and tools, a clearer picture of bicycle-related needs began to emerge. While the trip origin and destination analysis painted a general picture of high concentrations of land uses that are generating bicycle trips, the public input provided more specific detail about desired routes, barriers to bicycling, corridors in need of improvement, popular destinations in need of bicycle parking, and other valuable information to guide the plan recommendations.

### Recommendations

Plan recommendations focus on both building the physical bike network and creating an underlying support system through strategic programs and policies. There are over 100 miles of recommended bikeways in the plan, including 72 miles of on-street facilities—like bike lanes, buffered bike lanes, bicycle boulevards—and 28 miles of off-street facilities, such as trails and sidepaths. When complete, the full bike network will offer residents and visitors opportunities to travel by bicycle and access everyday



destinations safely and comfortably, regardless of age or ability. Recommended programs and policies help to build a culture of bicycling by engaging residents through fun and exciting bicycling events, providing education opportunities for both youth and adults, and creating systems to measure and monitor bicycling activity, safety, and other key variables.

## Implementation

Implementing the plan recommendations begins even before the plan is complete. Seven immediate actions provide the foundation for long-term commitment to the plan and set the stage for progressive network growth.

### Immediate Action Steps

- **Adopt the plan**
- **Establish standing Bicycle Advisory Committee**
- **Create a bicycle coordinator position**
- **Complete immediate-term bikeway projects**
- **Apply for BFC designation**
- **Collect baseline on-street bicycle counts**
- **Establish baseline measurements and set target benchmarks**

Project prioritization assigns value to project recommendations based on key metrics established with guidance from advisory committees and public feedback. Prioritization results in turn effect the project phasing schedule, which groups the recommended bikeways into four phasing groups: immediate term (2017-2018), near term (2019-2022), long term (2023-2027), and unscheduled. Cost estimates and potential funding sources support capital improvement planning, project financing, and project development. General maintenance considerations reinforce the commitment required to effectively maintain the bikeway network as a valuable asset to Iowa City and its residents.

As the plan is implemented, it will be critical to monitor the progress of Iowa City and its community partners and periodically reevaluate the community needs and update this plan document. The plan concludes with monitoring and evaluation metrics to guide the city towards its goal of becoming a Gold-Level BFC.



## SECTION 2

# Vision, Goals, and Objectives





## Vision and Goals

Bicycling is an integral part of the character and identity of Iowa City. From families traveling on the city's scenic greenways and trails, to children and young adults bicycling to school, to adults traveling to work and running errands, people of all ages and backgrounds are traveling throughout the city by bike. In recent years, Iowa City has demonstrated its commitment to making bicycling a safer, easier, and more convenient form of transportation through the development of trails, bike lanes, designated bicycle routes, bicycle-supportive policy changes, and programs in partnership with local advocacy organizations and community groups. In its 2016-2017 Strategic Plan, the City Council stated its intent to raise Iowa City's BFC status from Silver to Gold by 2017, and to aspire toward Platinum status in the future. This Bicycle Master Plan provides the framework and recommendations for the city to become a Gold-Level BFC.

The Iowa City Bicycle Master Plan establishes a strategy to support bicycling as a viable, inclusive mode of transportation. Over the course of the planning process, community residents, businesses,

institutions, and other stakeholders have shared their hopes and ideas for bicycling in Iowa City, and these hopes and ideas are encapsulated in the plan vision, goals, and objectives that will guide the city's actions for bicycling for years to come. The plan vision is aspirational and ambitious, representing the desired future for bicycling. The plan goals are broad, value-based expressions of the community's desires that can guide decision-making and bring the plan vision to life. Goals give direction to the plan as a whole and are concerned with the long-term. As a core foundation of the plan, the LAB's Building Blocks of a BFC organizes the goals into a clear and comprehensive "Six Es" framework based on proven elements of great bike plans. Multiple objectives have been identified to add measurable actions to each goal. The plan vision, goals, and objectives are firmly rooted in input from community members, guidance from the bicycle advisory committee and technical advisory committee, and detailed analysis of existing conditions.



## The Vision

**Iowa City is a bicycle-friendly community in which bicycling is a safe, comfortable, convenient, and preferred mode of travel and recreation for people of all ages and abilities. Iowa City residents and leaders value bicycling as a means to support a strong and diverse economy, foster healthy and active lifestyles, promote transportation equity, advance environmental sustainability, and enhance quality of life.**

## Goals and Objectives

**Goal 1: Engineering. Implement safe, comfortable, and convenient travel for people of all ages and abilities through an interconnected network of low-stress bicycling facilities.**

- Objective 1.1: Increase total bicycle network miles.
- Objective 1.2: Increase network connectivity by reducing gaps between existing facilities.
- Objective 1.3: Increase network connectivity by expanding facilities into underserved areas.
- Objective 1.4: Increase bicycling safety through improvements to existing bicycle facilities and network expansion.
- Objective 1.5: Meet or exceed minimum design standards and incorporate best practices in facility design, utilizing national resources including the latest editions of the American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*, the National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide*, and the Federal Highway Administration (FHWA) *Small Town and Rural Multimodal Networks Guide*.

- Objective 1.6: Preserve the safety and quality of existing and newly installed bikeways through ongoing facility evaluation and maintenance.
- Objective 1.7: Coordinate with adjacent municipalities and other local and state agencies to increase regional connectivity, particularly for projects that extend to the city limits or connect with bicycle facilities outside the city's jurisdiction.
- Objective 1.8: Balance bicycle mobility needs with pedestrian, motorist, and transit needs through implementation of the city's Complete Streets policy.
- Objective 1.9: Maximize bicycle amenities at transit stops and centers to support multimodal transportation.
- Objective 1.10: Utilize the zoning ordinance, subdivision regulations, and other policy tools to create a bicycle-supportive built environment.
- Objective 1.11: Provide support facilities to enhance the bicycle network in the form of short- and long-term bicycle parking, bicycle repair stations, bike share stations, and wayfinding signage.

**Goal 2: Education. Provide educational opportunities that teach roadway safety for all roadway users in Iowa City, including practical skills for bicycling, awareness of bicycle facilities and how to use them, and the rules of the road for people driving and bicycling.**

- Objective 2.1: Increase opportunities for adults, college students, teens, and youth to learn basic bicycle skills and traffic safety through regularly offered courses and training.
- Objective 2.2: Work with private and public schools to increase bicycle skills and traffic instruction as a part of school curricula.

- Objective 2.3: Support community partners' bicycle-related education initiatives to reach targeted populations and the broader community.
- Objective 2.4: Incorporate multi-pronged outreach efforts into bicycle project development to increase understanding of new bicycle facilities and raise awareness for the diversity of road users in Iowa City.

**Goal 3: Encouragement. Offer diverse and inclusive programs, events, and activities that encourage all Iowa City residents and visitors to enjoy bicycling.**

- Objective 3.1: Support community partners' bicycle-related encouragement initiatives to reach targeted populations and the broader community.
- Objective 3.2: Use the City's various social media platforms to promote bicycling.
- Objective 3.3: Work with local businesses and the chamber of commerce to create incentive programs for bicycling to work, to shop, and to community events.
- Objective 3.4: Work with the university and local schools to create incentive programs for students and employees to bicycle to and from school.

**Goal 4: Enforcement. Establish a shared understanding of and respect for bicycling among all road users through enforcement activities that promote responsible travel behavior and help educate the entire community on roadway safety.**

- Objective 4.1: Support law enforcement with training opportunities to address the needs of bicyclists and other road users.
- Objective 4.2: Develop law enforcement programs and activities to promote safe and responsible travel behavior.

**Goal 5: Evaluation. Define measurable mobility targets and provide routine evaluation of the state of bicycling in Iowa City to monitor plan implementation progress, identify opportunities for improvement, and address bicycling-related needs and issues as they arise.**

- Objective 5.1: Create an annual implementation agenda to guide bicycle project and program development and delivery within budgetary constraints established in the Capital Improvement Plan.
- Objective 5.2: Establish a bicycle or active transportation advisory committee to support evaluation, data collection, and implementation tracking efforts.
- Objective 5.3: Use evaluation and implementation tracking measures to highlight plan-related accomplishments and communicate the importance of bicycling to the community.
- Objective 5.4: Encourage community participation and feedback through ongoing engagement activities and open communication channels.
- Objective 5.5: Achieve Gold-Level BFC status.

**Goal 6: Equity. Contribute to a more equitable, affordable, and accessible transportation system in Iowa City by ensuring bicycling is a viable choice for all people throughout the entire city, with special focus on underserved populations, including youth, the elderly, people with disabilities, racial and ethnic minorities, immigrants, and low-income households.**

- Objective 6.1: Increase bicycle network coverage to underserved populations.
- Objective 6.2: Develop programs and materials that increase access to bicycling and bicycle-related information for underserved populations.





## SECTION 3 Existing System





## Existing System

Take a ride through Iowa City on any given day, and it quickly becomes clear: Iowa City is a bicycling city. From the scenic trail system to the busy streets and paths in and around Downtown and the University of Iowa, people of all ages and backgrounds are using the bicycle for transportation and recreation. The culture of bicycling in Iowa City is the result of concerted efforts by city and state governments, local bike shops, citizen advocacy groups, bike clubs, schools, and individual residents—all committed to supporting bicycling as a means of connecting to people and places in Iowa City. This chapter examines the current state of bicycling in Iowa City, with a focus on existing bicycle facilities and network characteristics, relevant plans and policies, and supporting programs and initiatives offered by Iowa City and its many community partners. These are features that have helped Iowa City earn Silver-Level BFC (BFC) designation as defined by the LAB.

## The Six Es Framework

Building a culture of bicycling that will take Iowa City to the next level takes more than bike lanes and trails. It will require the addition of low-stress bike-ways that support bicycling by people of all ages and abilities; programs, training, and organized rides to give people the skills and confidence to travel by bike; enforcement programs and laws that create an environment of mutual respect among all road users; and guidelines and policies to guide city staff and elected officials to enable smart, responsible choices. It takes a comprehensive approach, and, above all, it takes ambition, will, and perseverance.

Iowa City has many of these assets and characteristics already. In recognition of the city's efforts, the LAB designated Iowa City a Silver-Level BFC in 2013, improving on the bronze-level designation awarded in 2009. The LAB's Bicycle Friendly America program acknowledges the efforts of communities,

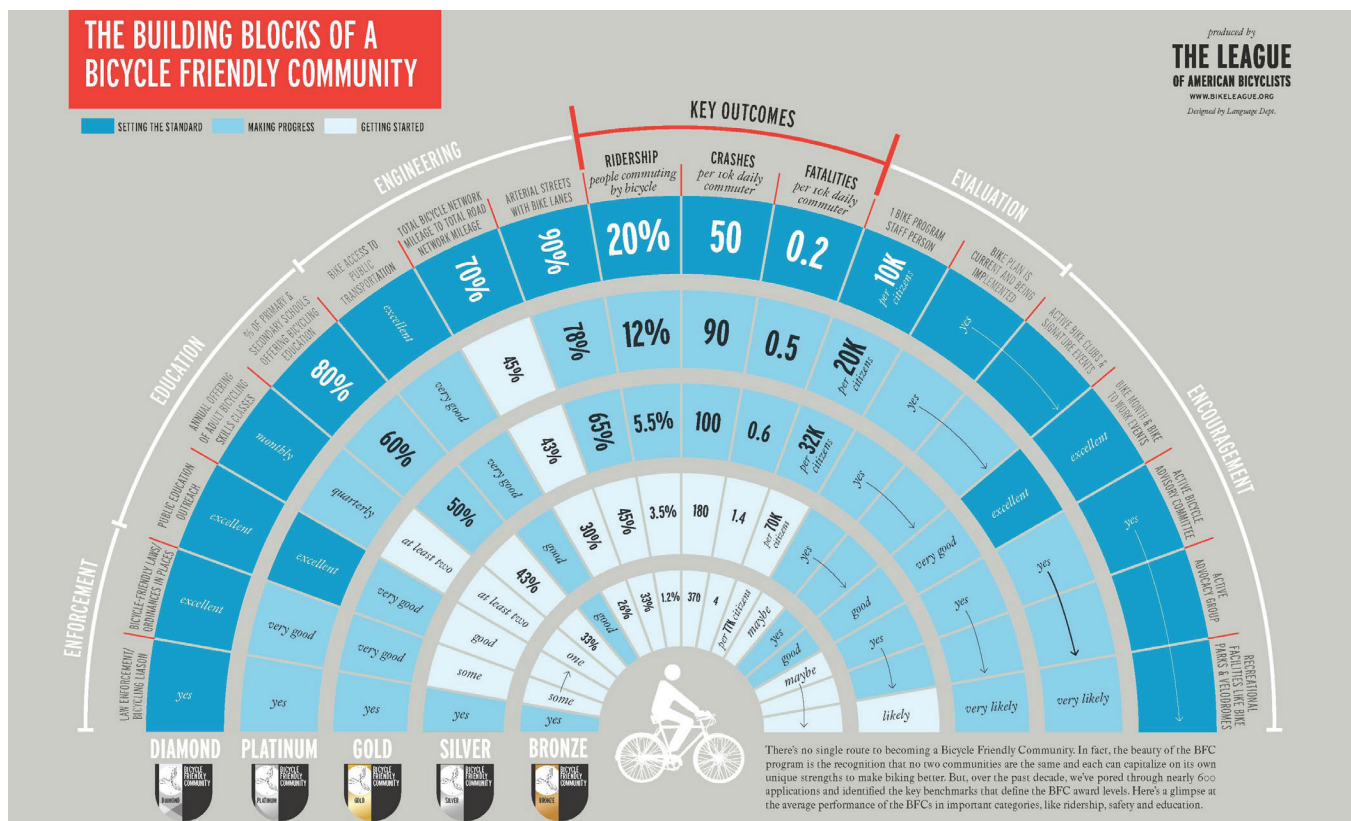


Figure 1. The building blocks of a BFC



universities, and businesses to institutionalize bicycling as a viable form of transportation. The program measures success using five key indicators, often referred to as the “Five Es” or the building blocks of a BFC: education, encouragement, engineering, enforcement, and evaluation. LAB is currently working to incorporate equity as a sixth key indicator, thereby creating the “Six Es” that were used for this planning process. These six indicators are used throughout this plan as a framework for evaluating the current state of bicycling and developing recommendations that can help Iowa City reach its goal of becoming a Gold-Level BFC.

### BFC Feedback

When awarding a BFC designation, the LAB provides applicants with detailed feedback about strengths, weaknesses, and opportunities for improvement. Much of Iowa City’s success in achieving Silver-Level BFC was due to the large network of shared-use paths and the thriving bike culture strengthened by community partners like the University of Iowa and Think Bicycles Coalition, and through annual events like Bike to Work Week. One of the major weaknesses was the lack of dedicated on-street bicycle facilities, particularly on arterial and collector roadways. The LAB provided the following recommendations in its feedback report to enhance the bicycling environment:

- **Engineering:** Provide bicycle facilities on arterial and collector roads to help bicyclists of all skill levels reach their destinations quickly and safely. Consider protected infrastructure like cycle tracks and buffered bike lanes on roads with posted speed limits over 35 miles per hour.
- **Education:** Develop public education campaigns to encourage respectful and responsible travel behavior among all road and trail users.
- **Enforcement:** Use targeted information and enforcement to encourage all road users to safely and respectfully share the road and provide information about road users’ rights and responsibilities. Make information available in both English and Spanish.

- **Encouragement:** Continue to coordinate with the University of Iowa to promote cycling in and around the campus and educate students on safe cycling practices.
- **Evaluation & Planning:** Have the BAC meet monthly to support plan implementation and build broad public support for bicycle improvements. Encourage law enforcement to participate on the BAC.

Additional recommendations were divided into the Five Es categories and subdivided into “low-hanging fruit” (short-term actions) and long-term goals. Early action recommendations ranged from offering more training opportunities for engineering and planning staff on accommodating bicyclists, to hosting a “Summer Streets” or “Sunday Parkway” event in which a major corridor is closed to auto traffic and programmed for bicycling, walking, group exercises, and other outdoor fun and games. The full feedback report is included in the appendix of this plan.

### Area Bicycle Friendly Designations

Other municipalities, institutions, and businesses in Iowa City and the surrounding region have also received recognition for their efforts to support bicycling. These community partners are listed in the table below.

**Table 1. Bicycle Friendly Designations**

Name	Designation	Year
<b>Bicycle Friendly Communities</b>		
City of Coralville	Bronze BFC	2016
City of University Heights	Bronze BFC	2016
City of Iowa City	Silver BFC	2013
<b>Bicycle Friendly Universities</b>		
University of Iowa	Silver BFU	2014
<b>Bicycle Friendly Businesses</b>		
World of Bikes	Gold BFB	2010
ACT, Inc.	Bronze BFB	2014
Neumann Monson Architects	Bronze BFB	2013
The Broken Spoke	Bronze BFB	2009

## The Bike Network

While people in Iowa City are legally permitted to bicycle on all public roadways except interstate highways, most people bicycling prefer to travel on the trails, designated on-street bikeways, and low-speed local streets. This national preference for separated facilities and calm local streets was echoed by Iowa City residents during the initial open house for the planning process. Together, these trails and on-street bikeways comprise the bike network, which is shown in Map 1 on the following page. To better understand how the existing bike network functions in Iowa City, it is important to understand the different types of bicycle facilities.

### Facility Types

For the purposes of establishing the existing network in Iowa City, bicycle facilities are broken into two categories: off-street trails and paths, and on-street bikeways. Off-street trails and paths are generally located along natural features like rivers and streams or along other transportation infrastructure like arterial roads and railroad corridors. On-street bikeways are located on the roadway pavement itself, often in the form of bike lanes, marked shared lanes (also called sharrows), or simply identified as signed bike routes. The following bicycle facility types are present in and around Iowa City.

### Shared-Use Paths (Trails)

A shared-use path, also called a multi-use trail, allows for two-way, off-street bicycle use and may be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users. These facilities are frequently found in parks, along rivers, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles, except at roadway crossings. Because of their separation from motor vehicle traffic, shared-use paths appeal to the widest variety of user types, from families with children to adult recreational riders to everyday commuters. When these linear shared-use paths lead to popular destinations or connect to the on-street bikeway network, their utility expands greatly, offering a

comfortable, low-stress bicycling environment for people to use for everyday trips.

Currently, there are over 37 miles of shared-use paths in Iowa City and over 35 more throughout Johnson County. The signature Iowa River Trail is the backbone of the Iowa City bike network and draws hundreds of recreational riders and bike commuters every day. Other popular shared-use paths include the Clear Creek Trail, the Willow Creek Trail, the Sycamore Greenway Trail, and the Court Hill Trail. While most of these trails are designed to current standards, there are some sections of the trail system that are sub-standard, mostly due to narrow widths in constrained environments. A prime example of this is along Iowa River Trail between Riverside Drive and the Iowa River from Iowa Avenue south to Burlington Street, where widths as narrow as 6 feet and the presence of utilities in the sidewalk create potential obstacles for trail users.



*Figure 2. Shared-use paths offer people of all ages and abilities a comfortable bicycling experience.*



# Existing Bicycle Facilities

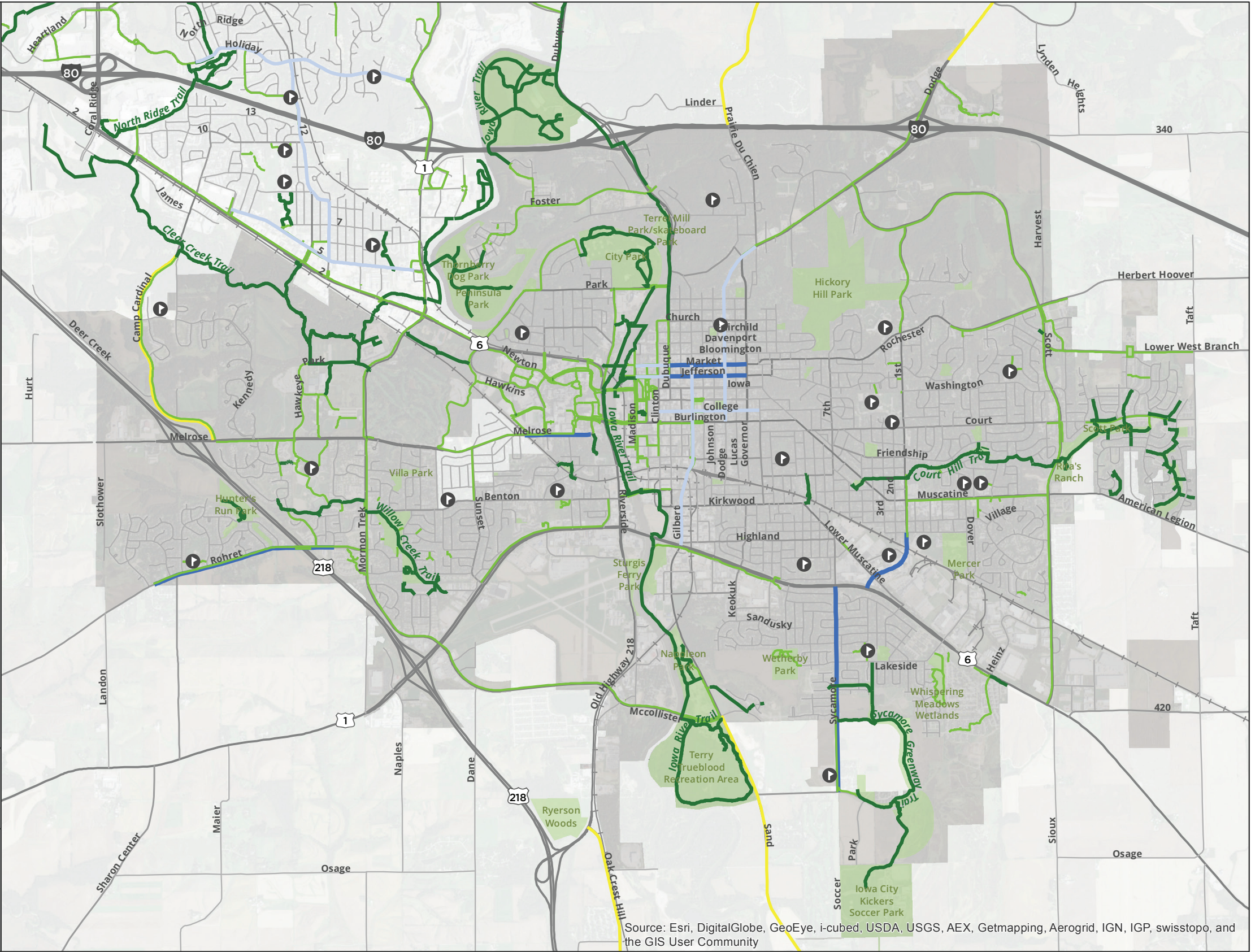
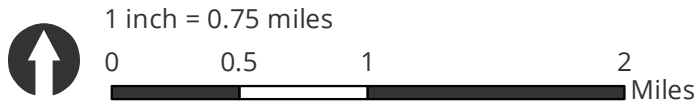
## Legend

### Existing Bicycle Facilities

- Shared-Use Path (Trail)
- Sidepath (Wide Sidewalk)
- Bike Lane
- Paved Shoulder / Shoulder Bikeway
- Marked Shared Lane
- Mountain Bike Trail

### Other Map Elements

- Interstate
- Principal Arterial
- Minor Arterial
- Collector
- Local Road
- Railroad
- K-12 School
- Park
- Iowa City Boundary



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 1. Existing Bike Facilities



## Wide Sidewalks/Sidepaths

Wide sidewalks along arterial and collector roadways in Iowa City combine the design characteristics of a shared-use path with the directness and convenience of the roadway system. Also referred to as sidepaths, these wide sidewalks are separated from the road by a curb and a planting strip, providing at least a minimum separation from adjacent motor vehicles.

Wide sidewalks (sidepaths) are an integral component of the bike network in Iowa City. Nearly 52 miles of sidepaths provide a comfortable, low-stress bicycling environment for people of all ages and abilities, and expand the off-street trail system into neighborhoods, schools, and other community destinations. Examples of wide sidewalks that support bicycle activity can be found on Mormon Trek Boulevard, McCollister Boulevard, Scott



*Figure 3. Sidepaths like the one shown here on Highway 1 function like an extension of the trail system, providing low-stress, all-ages connections to important community destinations.*

Boulevard, Lower West Branch Road, North Dodge Street, North 1st Avenue, Camp Cardinal Boulevard, and Highway 1 and Highway 6 in south Iowa City.

Sidepath widths in Iowa City vary from 6 to 10 feet. Current design guidelines in the Iowa Department of Transportation's Statewide Urban Design and Specifications Manual (SUDAS) manual recommend a minimum width of 10 feet. Greater widths should be considered where large volumes of trail users and/or larger maintenance vehicles are anticipated. Consistent with the American Association of State Highway Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, 4th Ed., the SUDAS manual does state that path width can be reduced to 8 feet but only where specific conditions prevail, such as minimal expected bicycle traffic, minimal pedestrian use, or the presence of physical constraints for short distances. Paths with widths below 8 feet should be identified and examined for their potential to be widened to minimum standards or greater if they are to remain a part of the bikeway network.

## Bike Lanes

Bicycle lanes designate an exclusive space for bicyclists with pavement markings and signage. The bicycle lane is located adjacent to motor vehicle travel lanes, and bicyclists ride in the same direction as motor vehicle traffic. Bicycle lanes are typically on the right side of the street (on a two-way street) between the adjacent travel lane and curb, road edge, or parking lane. Standard bicycle lanes can be found on Sycamore Street south of Highway 6, Rohrer Road from Mormon Trek Boulevard to the western city limits, and on Melrose Avenue from the University of Iowa Campus westward into University Heights. On one-way streets, bicycle lanes may be located on either the right or left side of the street. Left-side bicycle lanes are present on both Market and Jefferson Streets. In total, there are approximately 6 miles of bicycle lanes in Iowa City. Bike lanes can also include travel-way or parking-side buffers to add a level of comfort for people bicycling. There are no buffered bike lanes in Iowa City.





*Figure 4. The left side bike lanes on Market and Jefferson Streets provide a convenient connection between Central and East Iowa City.*

## Signed Routes

Shared streets in Iowa City are where bicyclists and motor vehicles use the same roadway space. Most signed shared roadways use warning signs to provide to alert people driving motor vehicles to be aware and respectful of other road users. Signed routes can also include wayfinding signage to guide bicyclists to important community destinations. Typical wayfinding signage in Iowa City includes route destinations, as well as distances and travel times. Signed shared roadways are often installed on streets that have constraints prohibiting a more separated bikeway type, but are essential for addressing a gap in the bikeway network or serving as the final leg of a bicycle route on a low-volume, low-speed roadway. In Iowa City, signed routes comprise a significant portion of the on-street bike network. While many of these signed routes are located on low-speed, low-volume local roadways, they would benefit from additional traffic calming and diversion measures to increase bicycle comfort and prioritize bicycle traffic.



*Figure 5. Warning signage on Prairie du Chien Road raise the street's visibility as a popular bicycling corridor.*

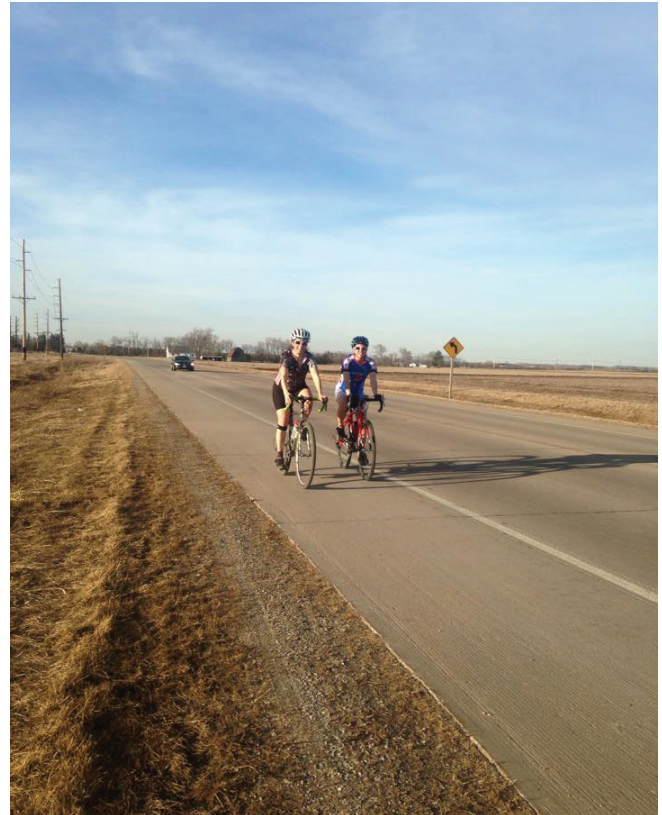




*Figure 6. College Street combines shared lane markings and warning signage to alert motorists and reinforce the street's designation as a cycling route.*

### **Marked and Signed Routes**

A marked and signed shared roadway builds on the basic signed shared roadway described above by incorporating shared lane markings (sharrows). Sharrows are road markings used to indicate a shared lane environment for bicycles and automobiles. Sharrows remind drivers of bicycle traffic on the street and recommend proper bicyclist positioning within the travel lane. Shared lane markings are often accompanied by wayfinding signage to direct people bicycling to both local and cross-town destinations. In Iowa City, shared lane markings are located on a number of streets, mostly in and around the Central District. Key streets with shared lane markings include Gilbert Street, Dodge Street, College Street, Market Street, and Jefferson Street (west of Dubuque Street). While shared lane markings provide a degree of awareness to motor vehicle



*Figure 7. Cyclists riding on one of many paved shoulders in the region (Source: Iowa City Womens Cycling Club)*

drivers and other road users, they do not offer an added degree of safety or separation and therefore are limited in their impact on bicycle networks beyond assisting in wayfinding.

### **Paved Shoulders**

Paved shoulders on rural roadways can accommodate bicycle travel. Paved shoulders are generally used by commuter and long-distance recreational riders, rather than families with children or less experienced riders. Paved shoulders can incorporate bicycle lane markings and signage to increase visibility and support safe and responsible roadway use by people on bicycles and people driving motor vehicles. In Iowa City, paved shoulders on Prairie Du Chien Road, Highway 1, Sand Road, and Oak Crest Hill Road increase access to numerous regional rural cycling routes that are well used by recreational riders and area cycling clubs.



## Network Characteristics

Together, the trails, wide sidewalks, and on-street bicycle facilities described above make up the Iowa City bike network. To better understand how the network currently functions, the plan examines the key network characteristics of quality, connectivity, comfort, safety, wayfinding, and support facilities.

### Quality

The quality of roadway and trail surfaces, pavement markings, wayfinding signage, and bicycle parking facilities is critical to the safety of people bicycling and the functionality of the bicycle transportation system. Network quality varies throughout Iowa City. Shared-use path and wide sidewalk surfaces are in generally good condition and offer smooth, accessible surfaces for bicycling, walking, skateboarding, inline skating, and other trail activity.

Pavement quality on the road network and associated on-street bikeways is more variable. Road surfaces in poor condition can deter bicycle activity and create safety hazards. Notable wear on existing shared lane markings and bike lane striping points to the importance of durable marking and striping products and the need for routine scheduled maintenance to extend the life cycle for on-street bikeways.

### Connectivity

Strong network connectivity is critical to the success of any bike network. Intersecting trails and low-stress bikeways can extend the distance that people feel comfortable bicycling and can better help people reach nearby destinations. While still growing, the Iowa City bike network has notable linear and area gaps that limit opportunities for bicycling. For



Figure 8. Cracks, debris and potholes like the one seen here on College Street represent significant hazards to bicyclists.

example, there are bike lanes present on seven different streets in Iowa City, yet none of these bike lanes intersect. In addition, major barriers like the Iowa River, Highway 6, and the Iowa Interstate Railroad create challenges to bicycle mobility. Major gaps and barriers are described below.

## Network Gaps

Bikeway gaps exist in various forms, ranging from short “missing links” on a specific street or path corridor, to larger geographic areas with few or no facilities at all. Gaps are organized based on length and other characteristics and may be classified into five main categories:

- **Spot gaps:** Spot gaps refer to point-specific locations lacking dedicated facilities or other treatments to accommodate safe and comfortable bicycle travel. Spot gaps primarily include intersections and other areas with potential conflicts with motor vehicles. Examples include bicycle lanes on a major street “dropping” to make way for right turn lanes at an intersection without guidance for the bicyclists on how to travel through the intersection.
- **Connection gaps:** Connection gaps are missing segments (1/4 mile or less) on a clearly defined and otherwise well-connected bikeway. Major barriers standing between destinations and clearly defined routes also represent connection gaps. Examples include bicycle lanes on a major street “dropping” for several blocks to make way for on-street parking, or a freeway standing between a major bicycle route and a school.
- **Linear gaps:** Similar to connection gaps, linear gaps are 1/4 to 1/2 mile long missing link segments on a clearly defined and otherwise well-connected bikeway.
- **Corridor gaps:** On clearly defined and otherwise well-connected bikeways, corridor gaps are missing links longer than 1/2 mile. These gaps will sometimes encompass an entire street corridor

where bicycle facilities are desired but do not currently exist.

- **System gaps:** Larger geographic areas (e.g., a neighborhood or business district) where few or no bikeways exist are identified as system gaps. System gaps exist in areas where a minimum of two intersecting bikeways would be required to achieve the target network density.

Gaps typically exist where physical or other constraints impede bikeway network development. Example constraints may include bike lanes “dropping” at an intersection to provide space for vehicle turn lanes, narrow bridges on existing roadways, severe cross-slopes, or limitations of pavement width due to environmental impacts associated with the roadway. Traffic mobility standards and other policy decisions may also lead to gaps in a network. For instance, a community’s strong desire for on-street parking or increased vehicle capacity may hinder efforts to install continuous bicycle lanes along a major street. Map 2 highlights gaps in the Iowa City bike network.

In some cases, a formalized bikeway itself may represent a gap despite its status as part of a designated network. This condition typically occurs when a corridor (often a major street) lacks the type of bicycle facilities to comfortably accommodate a broader usage by a range of bicyclist skill levels, including infrequent or less confident cyclists. Some signed routes that lack dedicated bicycle facilities represent gaps in the bike network, especially for less experienced riders. Other examples include roadway corridors lacking formalized facilities (e.g., bike lanes) where conditions such as higher vehicle speeds and volumes would otherwise justify greater separation between motorists and cyclists.

A network in early stages of development is likely to have more system and linear gaps, indicative of a lack of bikeways. Gaps in a more mature bike network are likely to be spot and linear in nature, a reflection of a more complete network with short



segment gaps, difficult intersections along existing bikeways, and difficult transitions between facility types. Most identified gaps in the Iowa City bike network are linear in nature—segment, linear, and corridor—reflecting the current state of network growth and development. Many segment and linear gaps represent missing links in the trail and wide sidewalk/sidepath system. Addressing these gaps can increase connectivity for less skilled and less confident system users. Many system gaps that cover larger areas are in well-established neighborhoods and industrial developments. In the absence of additional right-of-way for sidepaths or off-street trails, on-street bikeways like dedicated bike lanes, separated bike lanes, and bike boulevards can serve most bicyclist types.



*Figure 9. Despite the presence of shared lane markings, many people in Iowa City find Gilbert to be a barrier to bicycling and choose to alternative, lower-stress routes.*

## Barriers

Natural barriers, major land uses, and even transportation corridors like interstates and railroads present challenges to bicycling activity in Iowa City. Through input provided at the first open house and online via the online mapping tool, community members shared their concerns about specific barriers they face while bicycling in and around Iowa City. Barriers identified through the online mapping tool are presented in Map 3. Many of these barriers are located close to the center of the city and along major highways, and point to the challenges to

cross-city bicycling.

Spot barriers are location-specific impediments that deter bicycling activity or create additional hardships for people who bicycle. The following examples of spot barriers were identified by community members through the online mapping tool:

- Difficult to traverse intersections, including:
  - Benton Street at Riverside Drive
  - Grand Avenue and Burlington Street at Riverside Drive
  - Newton Road and Iowa Avenue at Riverside Drive
  - Gilbert Street and Benton Street
  - Burlington Street and Muscatine Avenue
- Pinch points and narrow facilities like the Burlington Street Bridge
- Wide sidewalks that terminate abruptly

Linear barriers like the Iowa River and Highway 6 divide the community and isolate residents from even the closest destinations by increasing real and perceived distance. These barriers can also present safety challenges by funneling bicycle travel onto higher-stress roadways like major collector and arterial roads in order to cross from one side to the other. In most cases, these intersecting roads lack dedicated bicycle facilities that support a wide range of bicycling skill and confidence levels. The Iowa Interstate Railroad functions in much the same way as the major highways, bisecting the street grid as it travels east to west through the heart of the city. Most local roads do not cross the railroad, and, as a result, all traffic—including motor vehicles, bicycles, and pedestrians—are funneled onto larger and busier roads in order to cross.

Bicycle Network Gaps

Legend

Bike Network Gaps

- Spot Gap
- Segment, Linear & Corridor Gap
- Area Gap

Existing Bicycle Facilities

- Shared-Use Path (Trail)
- Sidewalk (Wide Sidewalk)
- Bike Lane
- Paved Shoulder / Shoulder Bikeway
- Marked Shared Lane
- Mountain Bike Trail

Other Map Elements

- Interstate
- Principal Arterial
- Minor Arterial
- Collector
- Local Road
- Railroad
- K-12 School
- Park
- Iowa City Boundary



1 inch = 0.75 miles

0 0.5 1 2 Miles



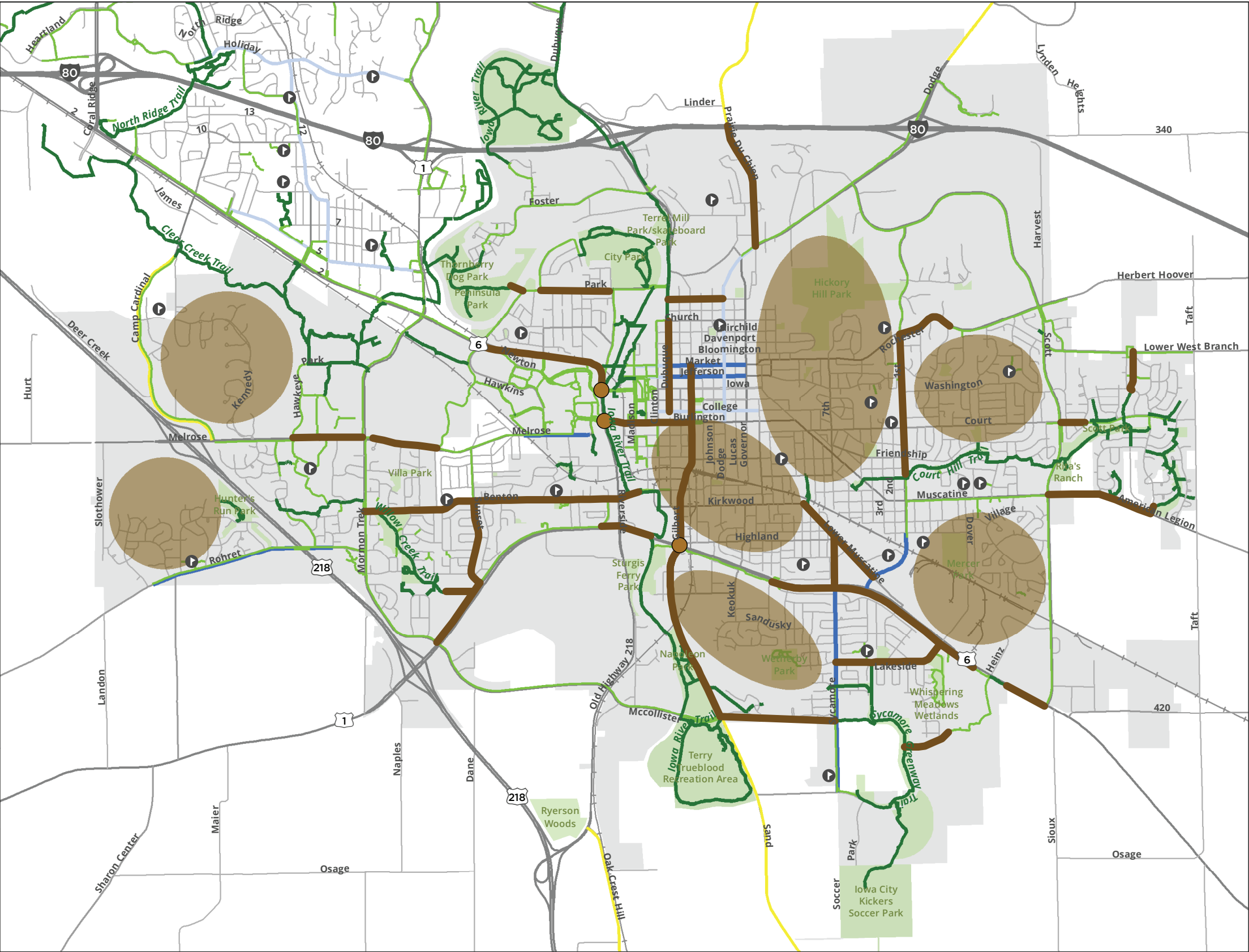
CITY OF IOWA CITY



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Map 2. Bike Network Gaps



# Barriers to Bicycling

## Legend

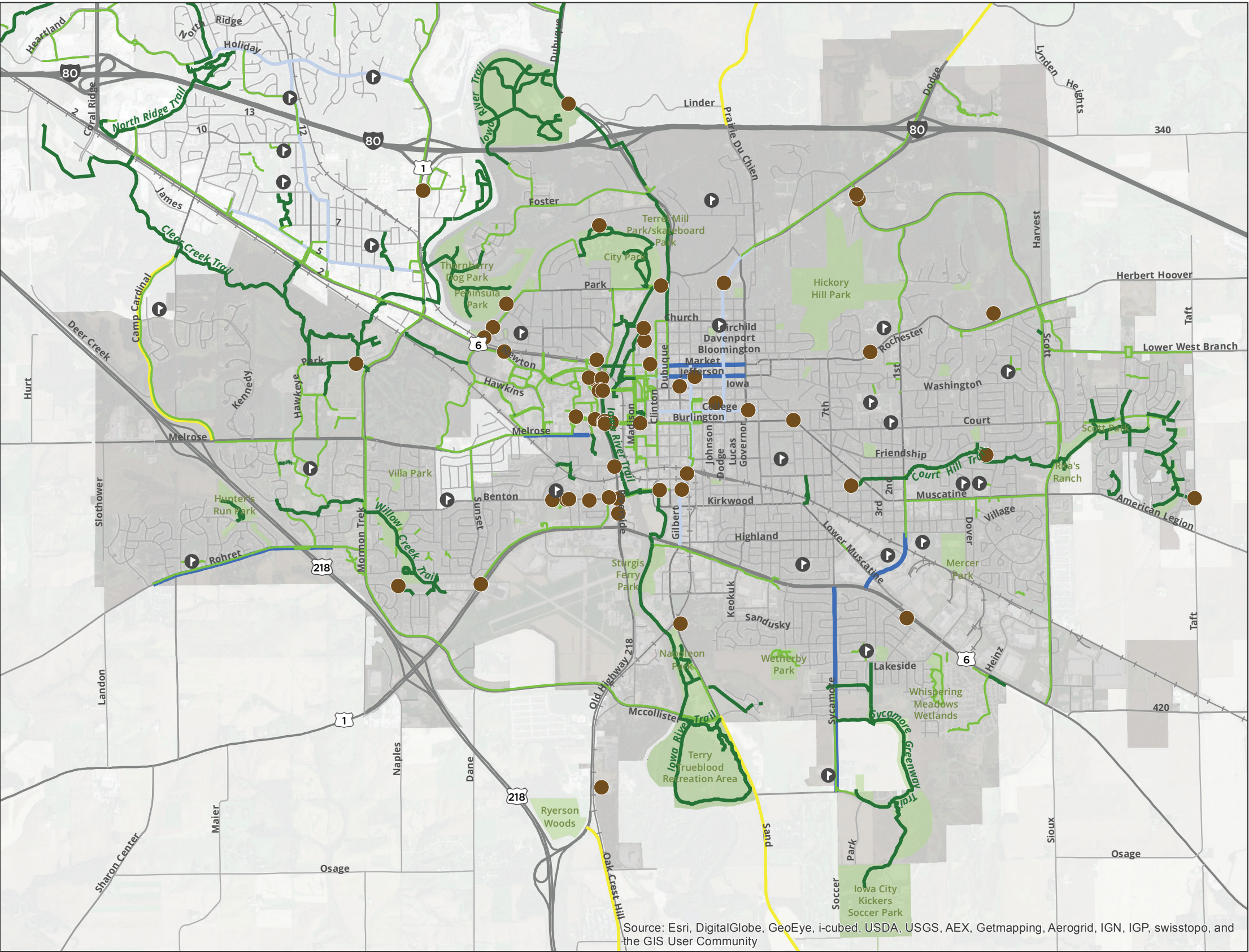
Community-Identified Barriers to Bicycling

## Existing Bicycle Facilities

- Shared-Use Path (Trail)
- Sidepath (Wide Sidewalk)
- Bike Lane
- Paved Shoulder / Shoulder Bikeway
- Marked Shared
- Mountain Bike Trail

## Other Map Elements

- Interstate
- Principal Arterial
- Minor Arterial
- Collector
- Local Road
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Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 3. Barriers to Bicycling



While the linear barriers mentioned above create crossing difficulties for people bicycling, other linear barriers present challenges for those bicycling along the barrier itself. These linear barriers are primarily busy roadways that lack dedicated bicycle facilities to support safe and comfortable travel. Specific corridors identified by community residents include 2nd Avenue from Coralville to the Iowa River Trail, Gilbert Street from downtown south to Highway 6, Benton Street west of Riverside Drive, and Burlington Street, which has been noted as one of the most direct east-west routes, yet one of the most difficult and uncomfortable to ride.

Major land uses like the Iowa City Municipal Airport can create long, circuitous routes for bicyclists, which are unavoidable. The University of Iowa, on the other hand, has multiple routes by which riders can travel through campus, yet the lack knowledge of these routes or wayfinding signs to guide people across campus limit east-west bicycle traffic.

## Comfort

An analysis of Bicycle Level of Traffic Stress (BLTS) on arterial and collector roadways in the study area reveals the extent to which the current bike network is limited in its accessibility for a wide variety of bicyclist types. Using the BLTS methodology established by the Mineta Transportation Institute's (MTI) Report 11-19: Low-Stress Bicycling and Network

Connectivity published in 2012, the plan analyzes levels of bicycle traffic stress on arterial and collector roads in Iowa City. While many routes on the existing bike network are located on local roadways, sidepaths, and off-street trails, most people bicycling in Iowa City must travel on or across these major roadways to reach their destinations. The analysis combines individual roadway characteristics, like the presence of dedicated bicycle facilities, number of travel lanes, presence of parking, and posted speed limit, to assign a level of traffic stress to the roadway. Definitions for each of the four levels of traffic stress, as defined in the MTI Report 11-19, are as follows:

- **BLTS 1:** Presenting little traffic stress and demanding little attention from cyclists, and attractive enough for a relaxing bike ride. Suitable for almost all cyclists, including children trained to safely cross intersections. On links, cyclists are either physically separated from traffic, or are in an exclusive bicycling zone next to a slow traffic stream with no more than one lane per direction, or are on a shared road where they interact with only occasional motor vehicles (as opposed to a stream of traffic) with a low speed differential. Where cyclists ride alongside a parking lane, they have ample operating space outside the zone into which car doors are opened. Intersections are easy to approach and cross.

**Table 2. Segment Scoring Matrix for Bicycle Level of Traffic Stress**

Number of Lanes	Traffic Volume	Mixed Traffic		Street with Bike Lane		
		<= 30 mph	>= 35 mph	<= 30 mph	35 mph	>= 40 mph
2-3 lanes	<=3k	1.5	2.5	1	2	2.5
	3k - 10k	2	3	1.5	2.5	3
	10k - 20k	3	3.5	2	3	3.5
	>20k	3.5	4	2.5	3.5	4
4 lanes	<=3k	2.5	3.5	1.5	2.5	3
	3k - 10k	3	4	2	3	3.5
	10k - 20k	3.5	4	2.5	3.5	4
	>20k	4	4	3	4	4
6+ lanes	All volumes	4				

- **BLTS 2:** Presenting little traffic stress and therefore suitable to most adult cyclists but demanding more attention than might be expected from children. On links, cyclists are either physically separated from traffic, or are in an exclusive bicycling zone next to a well-confined traffic stream with adequate clearance from a parking lane, or are on a shared roadway where they interact with only occasional motor vehicles (as opposed to a stream of traffic) with a low speed differential. Where a bike lane lies between a through lane and a right-turn lane, it is configured to give cyclists unambiguous priority where cars cross the bike lane and to keep car speed in the right-turn lane comparable to bicycling speeds. Crossings are not difficult for most adults.
- **BLTS 3:** More traffic stress than BLTS 2, yet markedly less than the stress of integrating with multilane traffic, and therefore welcome many people currently riding bikes in American cities. Offering cyclists either an exclusive riding zone (lane) next to moderate-speed traffic or shared lanes on streets that are not multilane and have moderately low speed. Crossings may be longer or across higher-speed roads than allowed by BLTS 2, but are still considered acceptably safe to most adult pedestrians.
- **BLTS 4:** A level of stress beyond BLTS 3.

At its core, the BLTS scoring decreases in comfort (1 is the highest comfort level) as the number of lanes, posted speed limit, and traffic volumes increase. Scoring in BLTS is based off of the four basic categories defined in the MTI report. This scoring methodology is summarized in Table 2.

The BLTS scoring decreases comfort (1 is the highest comfort level) as the number of lanes, posted speed limit, and traffic volumes increase. Traffic volumes reduce comfort more where bicyclists share the road with motorized vehicles, but comfort also decreases in bicycle lanes as traffic volumes next to those bicycle lanes increase. It is important to note

that the presence of wide sidewalks along arterial and collector roadways was not factored into this analysis in order to represent on-road level of traffic stress for bicycling. Wide sidewalks and shared-use paths along roadways generally earn higher scores than adjacent on-street facilities, but those higher scores are often reduced when the path crosses a busier roadway with a lower BLTS score, reflecting the impact of major roadway crossings on a facility's safety and comfort.

Map 4 displays the level of travel stress scores for arterial and collector roadways in Iowa City. Lowest levels of traffic stress are shown in yellow, while the highest levels of traffic stress are shown in dark brown.

The highest levels of traffic stress are located along major highways that bisect the city. Highway 1 and Highway 6 bisect the city north and south, and Riverside Drive bisects the city east and west. Other major arterials and collectors outside the core of the city—like Mormon Trek Boulevard, Melrose Avenue, and North Dubuque Street—present significant challenges for bicycling as well. These roads carry larger volumes of motor vehicle traffic at higher speeds than most roadways in Iowa City. Most arterials and collectors in the core of the city and to the east have lower posted speed limits and fewer travel lanes, and carry fewer motor vehicles. However, at a BLTS 3, many of these roads provide a level of comfort only accessible to more confident adults. Numerous BLTS 3 roadways function as signed roadways within the bike network. Roadways characterized by low levels of traffic stress for bicyclists include streets like Market and Jefferson Street, both with dedicated bike lanes, and roadways on the perimeter of the city with relatively low traffic volumes. By addressing level of traffic stress along key corridors and at major intersections, the city can enhance network connectivity and increase bicycling accessibility to a larger, more diverse segment of the population.



# Bicycle Level of Traffic Stress

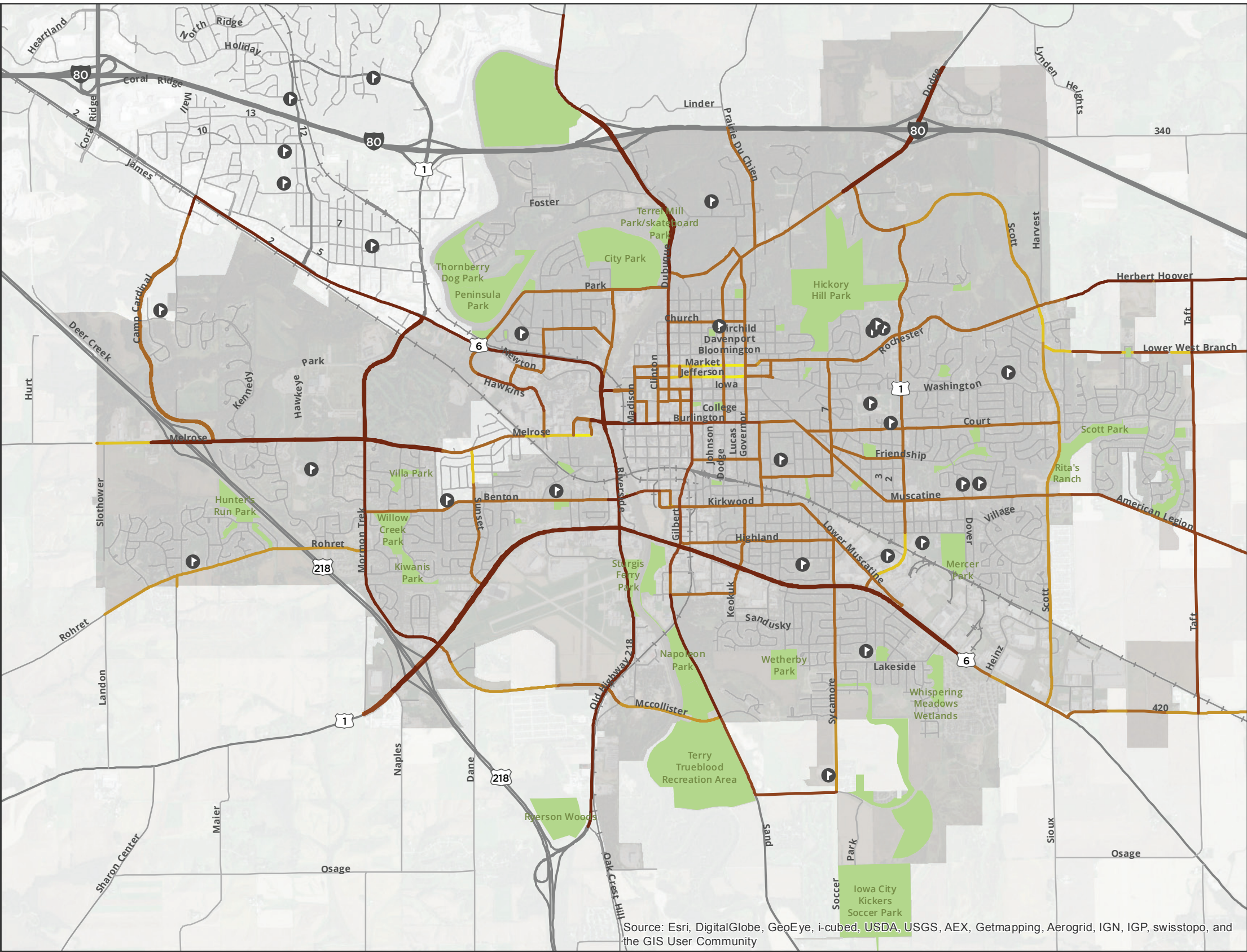
## Legend

### Bicycle Level of Traffic

- BLTS 1.5 (Lowest Traffic)
- BLTS
- BLTS
- BLTS
- BLTS
- BLTS 4 (Highest Traffic)

### Other Map

- Principle Arterial
- Minor Arterial
- Local Road
- Railroad
- K-12 School
- Park
- Iowa City Boundary



Map 4. Bicycle Level of Traffic Stress for Arterial and Collector Streets in Iowa City

## Safety

The analysis of reported bicycle and pedestrian related collisions can reveal patterns and potential sources of safety issues, both design and behavior-related. These findings can provide Iowa City with a basis for infrastructure and program improvements to enhance bicycle and pedestrian safety.

Bicycle and pedestrian related collisions and collision locations in Iowa City were analyzed over the most recent five-year period of available data, 2011 through 2015. It is important to note that the number of collisions reported is likely an underestimate of the actual number of collisions that take place because some parties do not report collisions to law enforcement, particularly collisions not resulting in injury or property damage. Although under-reporting and omissions of “near-misses” are limitations, analyzing the collisions can reveal spatial and behavioral trends or design factors that may contribute to collisions in Iowa City.

### Number of Crashes

During the five-year period from 2011 to 2015, there were a total of 138 bicycle-related collisions in within the Iowa City limits. The data shows a significant increase in the number of crashes during this period, growing by 187 percent from fifteen crashes in 2011 to forty-three crashes in 2015. It is important to note that this increase in crashes corresponds with an estimated 21 percent increase in bicycle commute mode share in the metro area from 2010 to 2015, as well as a 12 percent increase in population for the entire metro area from 2010 to 2014. While the lack of reliable exposure and bicycling activity data limits the ability to draw a direct relationship between the corresponding rises in bicycle commute mode share and bicycle crashes, these corresponding increases highlight the importance of bicycle facilities and bicycle crash countermeasures to support the growing number of bicyclists in Iowa City.

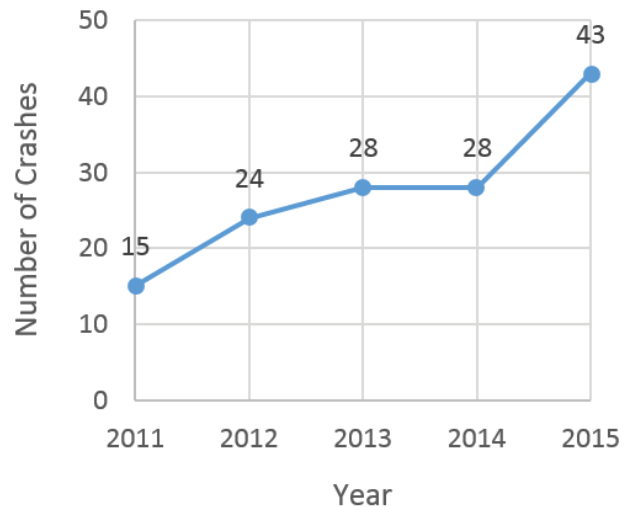


Figure 10. Bicycle crashes by year, 2011-2015

### Time of Day

Much like motor vehicle crashes, bicycle crashes generally occur during peak travel periods. However, it is important to note that many people bicycling in Iowa City are children, whose afternoon “peak period” corresponds with school dismissal and late afternoon play. The figure below shows crashes by time of day. The greatest number of crashes per hour occurred in the 6 p.m. evening rush hour (20), followed by the 3 p.m. school dismissal hour (16), and the 4 p.m. afternoon hour (10). The evening rush hours (5 p.m. to 8 p.m.) accounted for 28 percent of all crashes, while the school dismissal hours (2 p.m. to 5 p.m.) accounted for 23 percent.

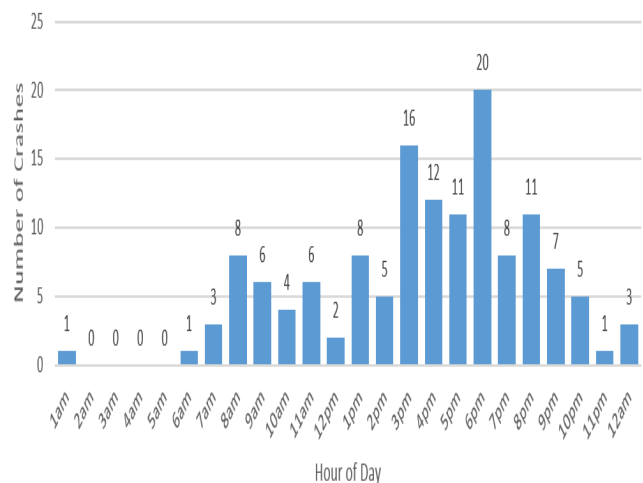


Figure 11. Bicycle crashes by time of day



### Time of Year

Bicycle crash data during this five-year period also highlights seasonal variations in bicycling activity corresponding to daylight, presence of college population, and temperature. Months with the highest volumes of crashes generally correspond to favorable weather conditions, average to above average daylight, and spring and fall semesters for college students who represent a significant portion of the city's population and are more likely to travel by bicycle. Forty-six percent of all crashes occurred in the months of April, September, and October, and an additional 40 percent occurred during the late spring and summer months of May, June, July, and August. Conversely, colder winter months experienced the lowest number of bicycle crashes, with only one crash in February and zero crashes in January.

Figure 12 displays crashes for each month by time of day, as well as sunrise and sunset times for the first day of each month. According to crash report data, 77 percent of all crashes occurred during daylight conditions, while 15 percent occurred under dark conditions. An additional 8 percent occurred during dusk, and 1 percent at dawn.

### Crash Location

Bicycle collisions were clustered along major thoroughfares and popular bicycling routes, including Gilbert Street, Burlington Street, Madison Street, College Street, Clinton Street, and Highway 6/2nd Street leading into Coralville. As displayed in Map 5, which groups collisions that occurred within 100 feet of one another, most clusters are located in Downtown and the Central District where a significant portion of the city's bicycling activity takes place.

### Crash Severity

While none of the reported crashes involving people bicycling were fatal, 67 percent resulted in injury, and an additional 32 percent resulted in possible injury. Of the 102 crashes resulting in injury, only seven were incapacitating. The locations of bicycle crashes by severity type are displayed in Map 6. It is important to note six of the seven the crashes resulting in incapacitating injury occurred at intersections along or across major thoroughfares, including Burlington Street (2), 2nd Avenue (2), Highway 6, and Mormon Trek Boulevard. This fact highlights both the existing level of bicycling activity along and across arterial and collector roadways, and the need for dedicated bicycle facilities and intersection treatments to reduce bicycle crashes.

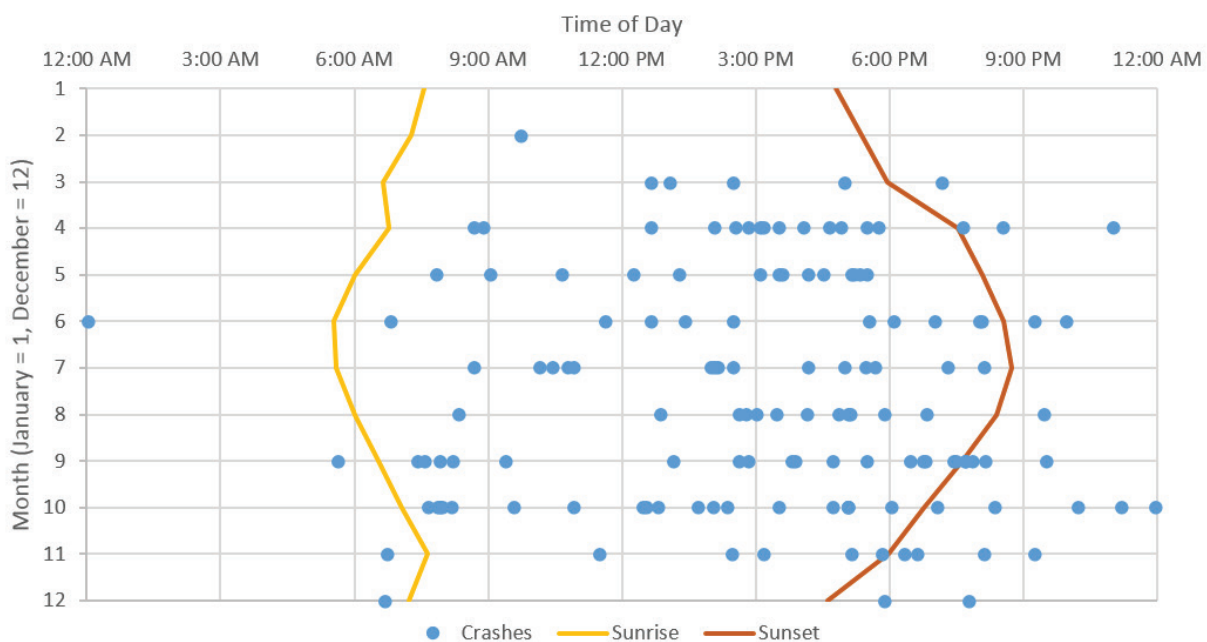


Figure 12. Bicycle crashes by month and time of day



# Bicycle Crash Clusters

## Legend

### Bicycle Crash Clusters

- 1
- 2
- 3
- 4 - 5
- 6 - 7

### Existing Bicycle Facilities

- Shared-Use Path (Trail)
- Sidepath (Wide Sidewalk)
- Bike Lane
- Paved Shoulder / Shoulder Bikeway
- Marked Shared Lane
- Mountain Bike Trail

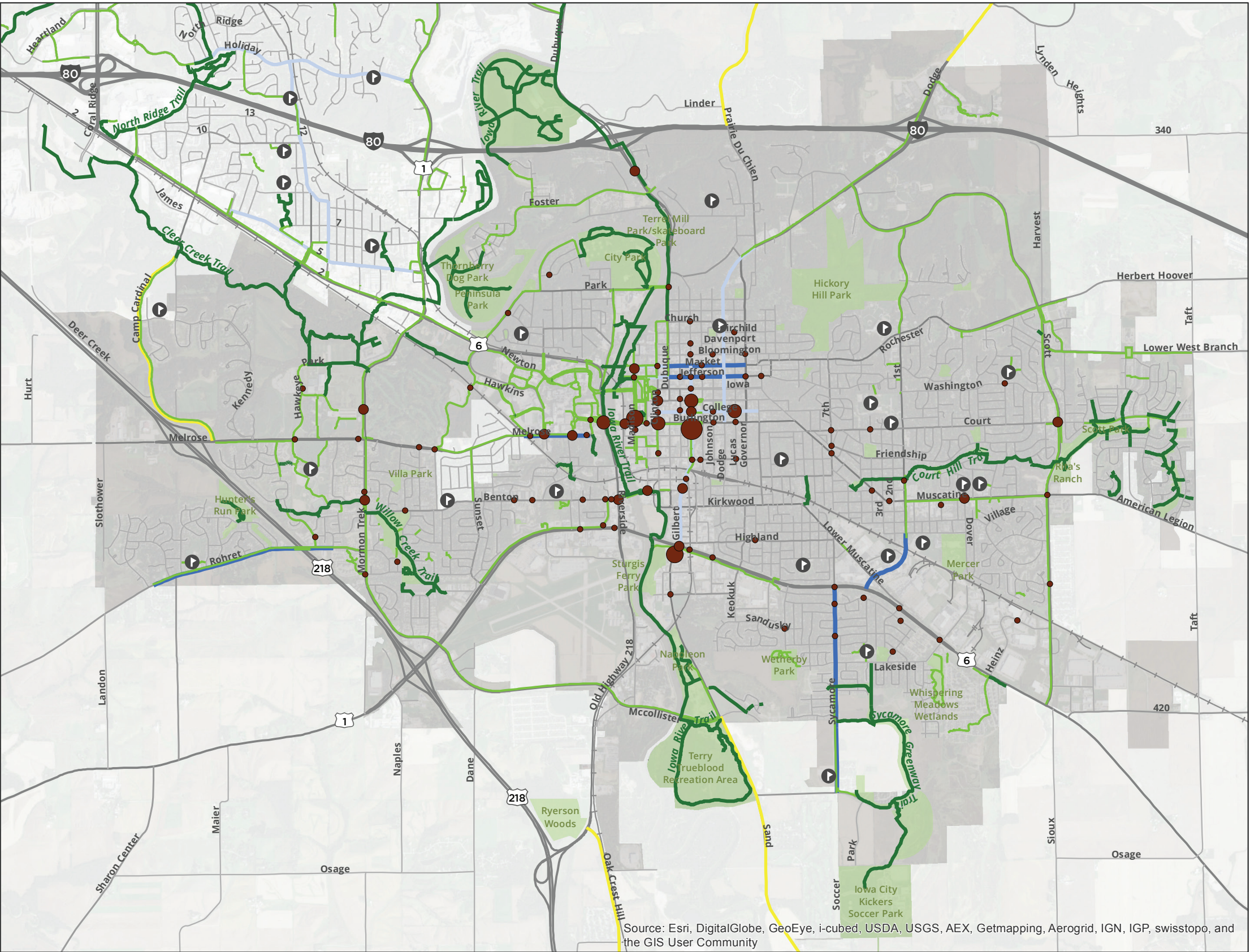
### Other Map Elements

- Interstate
- Principal Arterial
- Minor Arterial
- Collector
- Local Road
- Railroad
- K-12 School
- Park
- Iowa City Boundary



1 inch = 0.75 miles

0 0.5 1 2 Miles



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 5. Bicycle Crash Clusters, 2011-2015



# Bicycle Crash Severity

## Legend

### Bicycle Crashes by Severity

- Incapacitating Injury
- Non-Incapacitating Injury
- Possible Injury
- No Injury

### Existing Bicycle Facilities

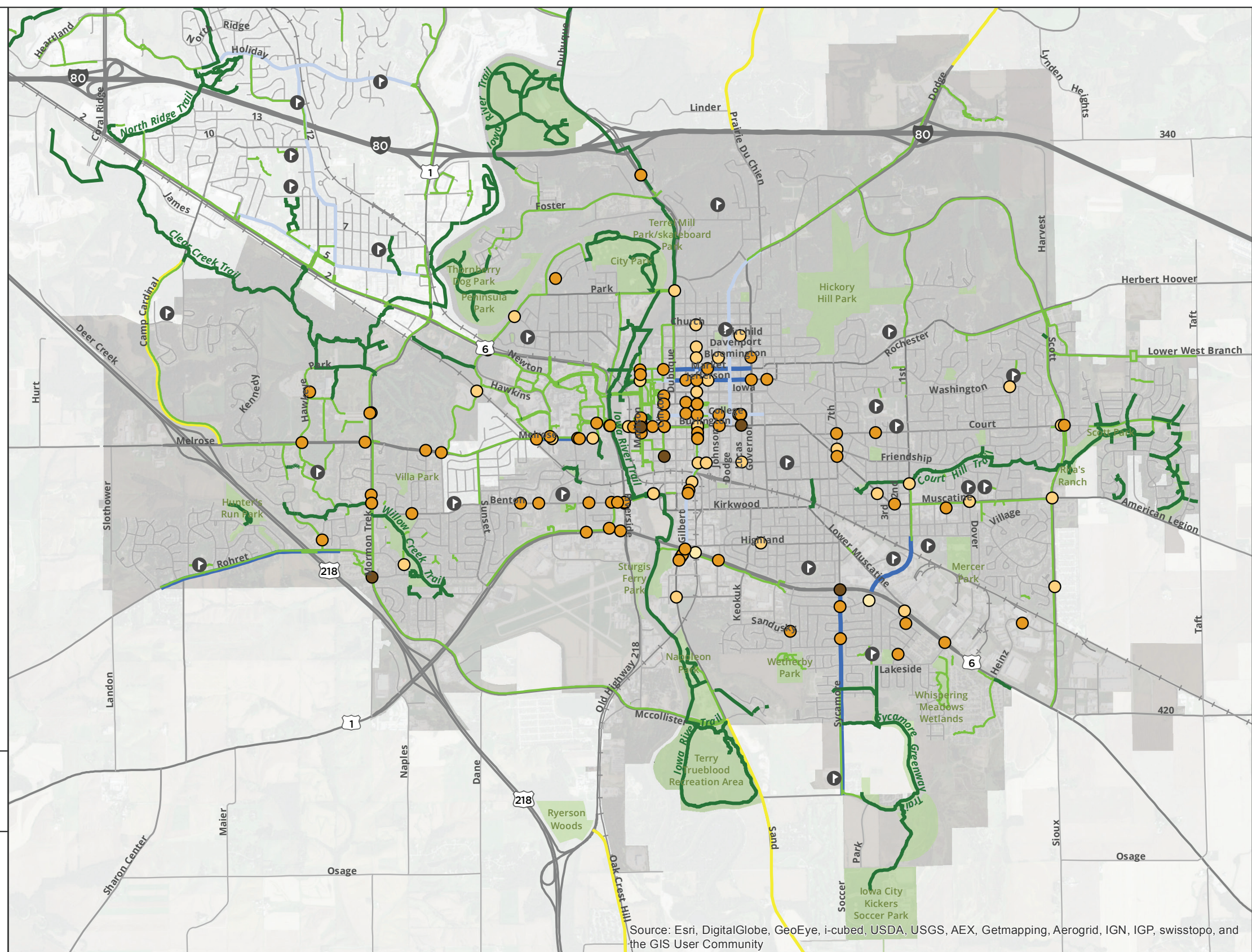
- Shared-Use Path (Trail)
- Sidepath (Wide Sidewalk)
- Bike Lane
- Paved Shoulder / Shoulder Bikeway
- Marked Shared Lane
- Mountain Bike Trail

### Other Map Elements

- Interstate
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1 inch = 0.75 miles  
0 0.5 1 2 Miles



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 6. Bicycle Crashes by Severity, 2011-2015



## Support Facilities

End-of-trip facilities like short-term bike racks, bike lockers, and long-term secure bike parking areas are essential to the success of the bike network. A lack of secure parking can deter people from bicycling to destinations, even for short trips. Iowa City and major institutions like the University of Iowa and the Iowa City Community School District (ICCSd) provide bicycle parking at popular destinations like the university campus, Downtown Iowa City, and public schools. The city has made a concerted effort in recent years to incorporate additional bicycle parking into streetscape projects and new developments in and around downtown. In addition, the city maintains ten bike lockers for secure bike storage at the Court Street Transportation Center. Locker rooms and showers are located at many sites across the city as well, but many are located in University buildings and open only to staff, faculty, and students. Bicycle repair stations, or “fix-it” stations, have become an important part of the bicycle landscape in recent years. Each station provides a bike stand, tools, and in most cases tire pumps for people to fix a flat or make other basic adjustments to their bikes. Many bicyclists have noted ineffective pumps at numerous stations, likely a result of



*Figure 13. Public bike repair locations provide tools for minor bicycle maintenance.*



*Figure 14. The University of Iowa has multiple bicycle parking and fixit stations on campus.*

water damage from rain and snow. There are nine bicycle repair stations in Iowa City, eight of which are located on University of Iowa campus.

Map 7 displays bike parking and repair station locations throughout Iowa City. While the data for bike parking locations (not repair stations) dates from 2011, the relative concentrations of bike parking reveal the extent to which investments in bike parking have focused on high-density destinations, including the university, downtown, schools, and commercial nodes.

Despite these efforts, many people biking in Iowa City have pointed to a lack of secure parking options throughout the community as a deterrent to bicycling. Bicycle parking ordinances, which are already in place in the city code, and incentive programs can increase the bicycle parking supply and reduce this perceived barrier to bicycling.

## Wayfinding

Landmarks, destinations, neighborhood business districts, natural features and other visual cues help bicyclists navigate through Iowa City and reach their destination. However, many of the recommended bicycle routes rely on lower-volume roadways that may not be as familiar to many people, who may typically use an alternate route when traveling by bus or car. Iowa City has installed wayfinding signs along most on-street bikeways and shared-use paths.



# Bicycle Support Facilities

## Legend

### Bicycle Support Facilities

- Bike Rack
- Bike Repair Station

### Existing Bicycle Facilities

- Shared-Use Path (Trail)
- Sidepath (Wide Sidewalk)
- Bike Lane
- Paved Shoulder / Shoulder Bikeway
- Marked Shared Lane
- Mountain Bike Trail

### Other Map Elements

- Interstate
- Principal Arterial
- Minor Arterial
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1 inch = 0.75 miles

0 0.5 1 2 Miles



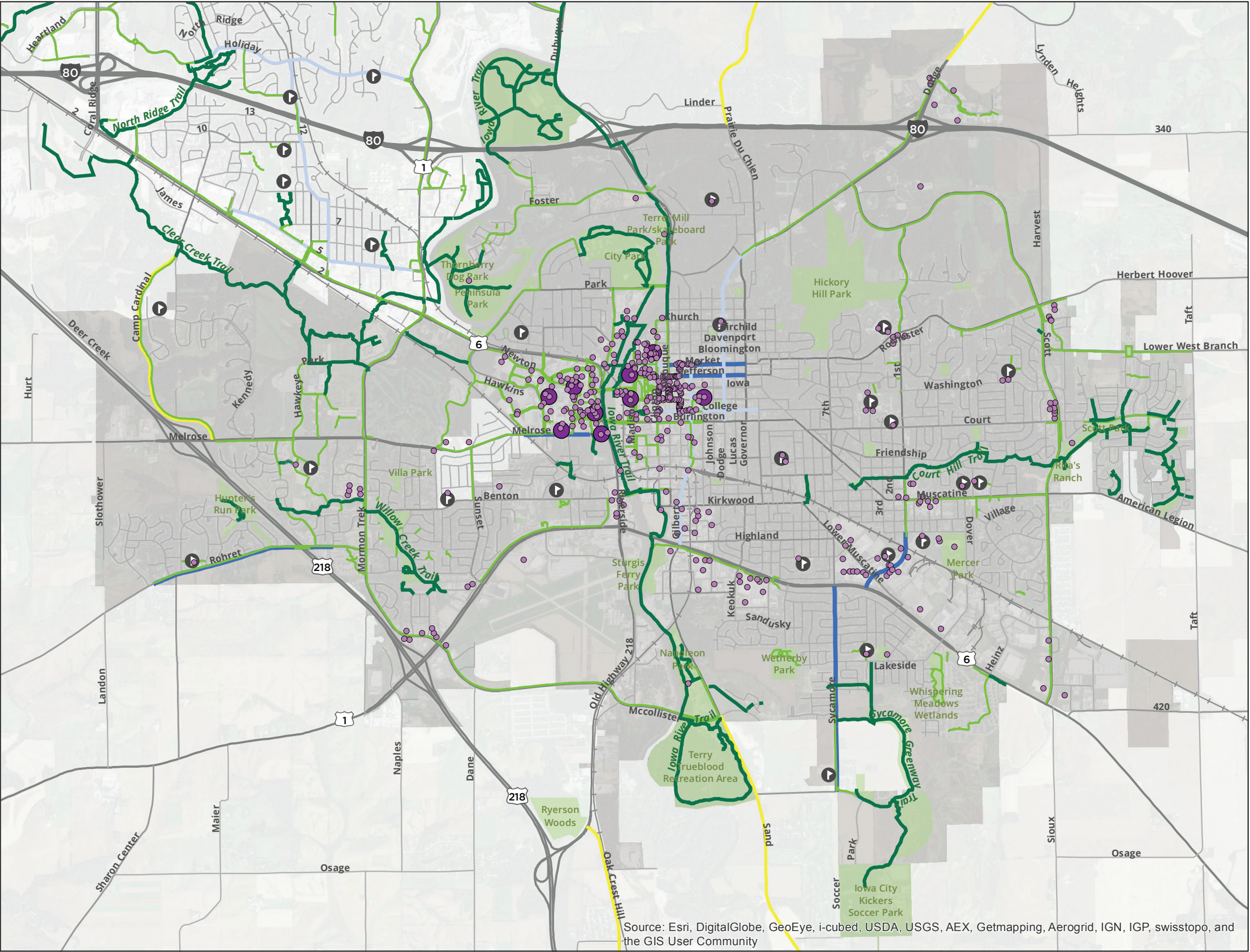
CITY OF IOWA CITY



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PLANNING + DESIGN



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 7. Bicycle Parking and Repair Stations



These signs provide critical information to people bicycling, including directional guidance to key destinations and districts, as well as distance and time to reach these locations by traveling the designated route. The addition of travel times to wayfinding signage is more common in cities across the country for its ability to counter the perception of travel times as a significant barrier to bicycling, especially for utilitarian and commuter purposes.



Figure 15. Wayfinding confirms locations of bicycle infrastructure and provides directions to local destinations.

## Building a Culture of Bicycling

Creating a bicycle friendly community does not happen overnight. The strong bicycling culture in Iowa City is the result of decades of determination, perseverance, and hard work by community businesses, non-profit organizations, advocates, institutions, civic leaders, and public agencies. That bicycling culture continues each day with every single person who walks out their door, hops on her or his bike, and rides. Whether large or small, the contributions of those who have made bicycling safer, easier, more enjoyable, accessible, and more liberating are meaningful and important. The community partners listed below have been instrumental in building a culture of bicycling and will continue to be so in the years to come.

### Community Partners

#### University of Iowa

The University of Iowa is a Silver-Level BFU, as awarded by the LAB. The University has a strong online presence for bicycling and organizes a wide array of bicycle-related education and encouragement programming, including the Winter Warrior Bike Challenge and spring and fall bike tune-ups. As the name suggests, the challenge aims to inspire university faculty and students to use bicycles as year-round transportation options. The university's online transportation cost calculator helps students understand the financial costs associated with driving alone by car. Students, faculty, staff, and local bicycle advocates make up the University's BAC. The group advocates for improved bicycling on campus, in the city, and throughout the county.

In May 2016, university students from the College of Public Health led a demonstration project to test temporary bicycle facilities on College Street. The route included a painted bike lane, a protected bike lane, a bike boulevard, and shared lane markings.

#### More Information:

- University of Iowa Bicycle Transportation:  
<https://sustainability.uiowa.edu/initiatives/transportation/biking/>





Figure 16. The annual spring and fall bike tune-ups help university students keep their bikes in good working order. (Source: University of Iowa)

- University of Iowa Drive Alone Cost Calculator:  
<https://transportation.uiowa.edu/cost-calculator>
- Iowa City Bike Boulevard Project:  
<https://sustainability.uiowa.edu/news/student-group-tests-iowa-city-bike-boulevard/>

### Think Bicycles of Johnson County

Think Bicycles is a non-profit organization that brings bicycle shops and other community organizations together to advocate for improved bicycling in Johnson County. Think Bicycles helps organize Bike Month, held in May, with events throughout the county. The website also offers resources such as links to other organizations' group bicycle rides.

#### More Information:

- Think Bicycles: <http://www.thinkbicycles.org/>

### Iowa City Bike Library

The Iowa City Bike Library began in 2004 by a group of local volunteers. The group continues its mission of encouraging more people to ride bicycles by repairing donated bikes and offering them for six month checkout periods. Community members receive their initial deposit once the bike is returned in good condition within the checkout period. System patrons may choose instead to keep the bicycle for themselves in lieu of obtaining the deposit. Children's bicycles are available for sale.

The Iowa City Bike Library offers a Rent-a-Bench (RAB) program for members of the public to repair their bicycles by gaining access to the shop's tools and repair stands. RAB operates according to a low hourly fee. Patrons who check-out a bicycle from the





Figure 17. Staff at the Bike Library help instill area residents with basic bike maintenance skills and provide tools. (Source: Iowa City Bike Library)

library have access to repairs during their checkout period. The Iowa City Bike Library covers the cost of minor repairs and adjustments.

#### More Information:

- Iowa City Bike Library: <http://www.bikelibrary.org/>

### Iowa Coalition of Off-Road Riders

Mountain bicycling is an important element of Iowa City's bicycling culture, and the Iowa Coalition of Off-Road Riders is leading the charge to promote, preserve and improve mountain bike trail access. The volunteer-based non-profit organization focuses on maintaining and activating the Sugar Bottom Trails and other mountain biking facilities in the Iowa City area and also hosts numerous rides and events throughout the year in partnership with local bike shops, clubs, and other organizations.

#### More information:

- <https://www.facebook.com/ICORR-105507021120/>

### Bicyclists of Iowa City

With over 450 members from the Iowa City area, Bicyclists of Iowa City (BIC), organizes multiple group recreational bicycle rides per week. Group rides are available at multiple speeds and distances. Shorter, slower rides help people who are new to bicycling gain confidence. Longer rides are available for those training for RAGBRAI (Register's Annual Great Bicycle Ride Across Iowa), the renowned long-distance bicycle event. The group's weekly rides foster camaraderie by ending with a social event, such as dinner or ice cream. BIC also works with organizes bike rodeos each spring at local elementary schools to teach children basic bicycling skills and safety tips.



**More information:**

- <http://bicyclistsofiowacity.org/>

**Iowa City Cycling Club**

The Iowa City Cycling Club works to advance the sport of cycling in the region through race promotions, team sponsorship, training, mentoring programs, and women-only rides, clinics, and race series. The organization also promotes cycling through advocacy, safety, and community involvement efforts.

**More information:**

- <http://iowacitycyclingclub.com>

**Goosetown Racing Club**

Goosetown Racing is an Iowa City race team that participates and encourages others to enjoy cycling, running, skiing, and triathlons.

**More information:**

- <https://www.facebook.com/Goosetown-Racing-204841488525/>

**Iowa City Womens Cycling**

Developed as an initiative of the Iowa City Bicycling Club in 2009, Iowa City Womens Cycling provides a positive environment to encourage women to ride and race. The group hosts numerous events throughout the year, including weekly rides and the popular Chamois Time race series. Other regular activities include social events and racing and maintenance clinics.

**More information:**

- <https://www.facebook.com/iowacitywomenscycling/>

**Iowa City Women on Wheels**

Iowa City Women on Wheels (ICA-WOW) was founded by a group of women who work at the local bicycle shop, World of Bikes. ICA-WOW offers no-drop, social rides twice a week during the summer. Women-only bicycle maintenance clinics and social gatherings offer women a chance to learn

about basic repairs in hopes that participants are empowered and excited to ride more often. Events and rides use World of Bikes as starting locations and bicycle rentals are available.

**More information:**

- <https://www.meetup.com/ICA-WOW-Iowa-City-Area-Women-On-Wheels/>

**BIKEIOWA**

BIKEIOWA has connected community members with resources about bicycling for sixteen years. BIKEIOWA is an online compendium designed to help residents stay knowledgeable about upcoming rides and events including bicycle-friendly city designations, organized rides, new infrastructure updates, advocacy and legislative news, and more. An online user can create a membership to add or update event information and interact with other users' online content. The website was created in 2001 and now has over 70,000 unique visitors per month. Over 4,500 opt-in e-mail addresses receive biweekly ride reminder e-mails.

**More information:**

- <http://www.bikeiowa.com/>

**Iowa Bicycle Coalition**

The Iowa Bicycle Coalition (IBC) provides statewide advocacy, events, rides, and online resources to further its mission to "build partnerships, educate Iowans, and help to establish safe and enjoyable bicycle transportation and recreation networks throughout Iowa." The organization supports community design, facility design and maintenance, and public policy goals to help make Iowa the most bicycle-friendly state in the country. The IBC also works to increase youth bicycling by offering bike training to area children through the school district's physical education program and by providing Safe Routes to School assistance. Other events and activities led by the IBC include the annual Iowa Bike Summit, Bike Expo, the RAGBRAI ride announcement party, and numerous group rides throughout

the year to encourage all skill levels to get out and ride a bike.

**More information:**

- <http://iowabicyclecoalition.org/>

### **Iowa City Community School District**

The ICCSD supports active transportation and encourages children and families to walk and bike to school. The school district has a Safe Routes to School Coordinator who provides support to individual schools and their PTOs to organize local programs and events. The ICCSD also partners with organizations like the IBC and BIC to offer bicycle safety and skills training to children.

### **Safety Village**

Located at Grant Wood Elementary School, Safety Village is a child-size town that uses pedal-driven cars to teach children about real-life traffic situations and safety measures. Annual camps hosted by Mercy Hospital are available to children who have finished kindergarten. The program regularly attracts over 200 children a year.

**More information:**

- Safety Village: <http://www.mercyiowacity.org/safety-village>

### **Neighborhood Centers of Johnson County**

The human services agency called Neighborhood Centers of Johnson County serves local schools and neighborhoods including Broadway, Pheasant Ridge, and Breckenridge. The agency is community based and focuses on bringing resources to underserved families by offering programs and activities. The two community centers are located in Iowa City and act as common space for neighbors to gather.

In addition the other services, Neighborhood Centers of Johnson County operates Youth Off-Road Riders Cycling Program (YORR). The program introduces youth to recreational cycling for competition



*Figure 18. Children learn about the basics of traffic safety while pedaling through Safety Village. (Source: Iowa City Safety Village)*

or leisure. Youth receive coaching and meet new friends as they learn new skills. Yellow Velo Bikes and Food is part of Neighborhood Centers of Johnson County's youth employment program. Youth sell healthy food and operate hourly, daily, and weekly bicycle rentals.

**More information:**

- Yellow Velo Bikes and Food: <http://www.ncjc.org/yellow-velo.html>
- Youth Off-Road Riders: <http://www.ncjc.org/youth-off-road-riders.html>
- Neighborhood Centers of Johnson County: <http://www.ncjc.org/>





*Figure 19. The 2016 Telenet UCI Cyclo-Cross World Cup drew thousands of visitors and contributed to the local economy.*

### **Iowa City Blue Zones Project**

Sponsored by Wellmark Blue Cross and Blue Shield, the Iowa City Blue Zones Project began in 2011 as a catalyst for healthy and active living through direct interventions and policy changes that support physical activity and healthy eating. The project has impacted more than 67,000 individuals and has helped lower the city's obesity rate from 18.7 percent in 2014 to 15.8 percent in 2015. The project has been supportive of Safe Routes to School programs, complete streets projects, and other initiatives that encourage residents to make physical activity a part of their daily routines.

#### **More information:**

- Iowa City Blue Zones Project: <https://www.facebook.com/pg/IowaCityBlueZonesProject>
- Iowa City Blue Zones Project: <http://explore.bluezonesproject.com/iowa-city/>
- Press: <http://www.press-citizen.com/story/news/2016/02/03/iowa-city-earns-blue-zones-certification/79765076/>

### **Iowa City/Coralville Area Convention & Visitors Bureau (CVB)**

The Iowa City/Coralville Area Convention & Visitors Bureau (CVB) works to increase visitor volume and spending to the region by attracting and operating conventions and events, supporting many of the

area's signature events, and providing comprehensive information to visitors. The CVB has been a major proponent of bicycling in Iowa City through both the promotion of bicycling activities, bicycle facilities, local bike shops, and events. The bureau's support of regional events like the granGABLE and international events like Jingle Cross and the 2016 Telenet UCI Cyclo-Cross World Cup have helped to establish Iowa City's reputation as a bicycling destination. The 2016 UCI World Cup event, which was estimated to have brought 10,000 visitors, including professional and amateur racers from across the globe, was so successful that the UCI has announced that Iowa City will open the 2017 UCI World Cup series, and local organizers are expecting more than 15,000 visitors and \$1.2M in local revenue.<sup>1</sup>

#### **More information:**

- <http://www.iowacitycoralville.org/>

### **Local Bicycle Shops**

Local bicycle shops are essential to bicycling in Iowa City, not just for the products they sell, but for their classes and events that instill confidence in new riders and build relationships around bicycling. Programs offered by Iowa City bicycle shops offer basic bicycle skills and safe maneuvering courses, bicycle repair courses, regularly-scheduled group rides, bicycle rodeos in partnership with local schools and organizations, and bike races.

<sup>1</sup> Davis, Andy. "Iowa City selected to host another cyclo-cross World Cup race." Iowa City Press Citizen, January 27, 2017. <http://www.press-citizen.com/story/news/2017/01/27/iowa-city-uci-cyclo-cross-world-cup-jingle-cross/97141576/> (accessed March 13, 2017).

## Existing Plans and Policies

From long-range plans to statewide facility design standards, Iowa City staff and elected leaders rely on many existing plans, policies, and regulations to inform their decisions relating to bicycling infrastructure planning, funding, design, construction, and maintenance. The following list of existing documents and resources were reviewed early in the planning process to better understand the regulatory and policy environments and to identify common themes and goals on which the Bicycle Master Plan can expand or improve. A brief overview of key findings from these documents are described below.

## Plans

### Local Plans

Iowa City and other local agencies in the metropolitan area have developed comprehensive plans, sub-area plans, and bicycle and trail plans that have impacted and will continue to impact bicycle facility development and supporting programs. Transportation-focused plans like the Metropolitan Bicycle Master Plan (2009), the Future Forward 2045 Long Range Transportation Plan (2017 draft), and the Johnson County Bicycling & Multi-Use Trails Plan (2012) include recommendations for the installation of bicycle facilities on local roadways, the development of additional trail corridors along riparian

**Table 3. Relevant Plans and Policies**

Plan/Policy/Regulation	Agency	Year
IC2030: Iowa City Comprehensive Plan Update	Iowa City	2013
2016-2017 Strategic Plan Update	Iowa City	2016
South District Plan	Iowa City	2015
Central District Plan	Iowa City	2012
Downtown and Riverfront Crossings Master Plan	Iowa City	2013
City Code (including bicycle regulations, parking standards, subdivision design standards, and	Iowa City	Updated 2016
Complete Streets Policy	Iowa City	Updated 2015
Metropolitan Bicycle Master Plan	MPOJC	2009
Future Forward 2045 (Long-Range Transportation Plan)	MPOJC	2017 (Draft)
Complete Streets Policy	MPOJC	2015
Coralville Community Plan	Coralville	2014
Bicycling & Multi-Use Trails Plan	Johnson County	2012
Statewide Urban Design and Specifications (SUDAS)	Iowa DOT	2017 Edition
Iowa in Motion 2040, Iowa In Motion 2045 (Draft)	Iowa DOT	2012, 2017 (Draft)
Iowa Trails 200	Iowa DOT	2000



and other undeveloped corridors, the evaluation of some roadways for travel lane conversions or road diets, maintenance and sweeping of trails and high-priority bike corridors, bicycle parking ordinances for commercial and multi-family properties, and additional bicycle parking in downtown and other popular destinations. The Metropolitan Bicycle Master Plan provides the most detailed history, analysis, and recommendations pertaining to bicycling in Iowa City and applicable to this bicycle master planning process. Recommendations for on-street bikeways, trails, supporting programs and policies, and plan evaluation create a comprehensive and robust strategy to increase bicycling activity and enhance bicycling safety in Iowa City and surrounding communities. Like this current bicycle master planning process, the Metropolitan Bicycle Master Plan also utilizes the LAB's building blocks of a BFC to frame existing conditions inventory and plan recommendations.

Comprehensive and sub-area plans like IC2030: Iowa City Comprehensive Plan Update (2013), the South District Plan (2015), and the Downtown and Riverfront Crossings Master Plan (2013) also stress the importance of bicycling as a desired transportation mode for transportation and recreation and an integral component of future growth and redevelopment. The city's 2016-2017 strategic plan update points to the importance of bicycling as a means of promoting environmental sustainability. The city set an ambitious goal of earning a Gold-Level BFC designation in 2017.

## State Plans

At the state level, bicycle transportation and recreation are addressed in both the statewide transportation plan, Iowa in Motion 2040, and in the statewide trails plan, Iowa Trails 2000. The state also commissioned a statewide bicycle and pedestrian plan which included multiple public meetings across the state in 2013 and an anticipated release of the draft report in 2015. However, no documents are made available on the project website as of February 2017.

Iowa in Motion 2040's broad scope encompasses active transportation and includes considerable focus on the state's growing trail system. The plan's three broad-based and far-reaching goals of safety, efficiency, and quality of life provide significant latitude for Iowa Department of Transportation to address unique statewide, regional and local challenges and opportunities. With regard to bicycling, key findings include the need for bicycle system funding, complete streets policies, increased coordination to connect local and regional trail systems, and more education and encouragement programs. An update to the plan is currently underway and is expected to be completed in 2017. Draft documents released so far build on these same key findings and include greater focus on the prevalence of bicycle and pedestrian injuries and fatalities.

Iowa Trails 2000 is a resource document developed to assist local governments, non-profits, and other trail developers in achieving a shared vision of an interconnected, multi-modal, easily accessible statewide trails system. The plan provides the overarching vision for a statewide trails system, guidance for facility planning and design, and enunciates the benefits of trails as valuable recreation, transportation, and quality of life assets. The plan stresses the importance of local agencies as "the primary developers and owners of specific trail projects at the local level.... They are responsible for local coordination, public involvement, and final trail design, including alignment determination. They are also usually responsible for seeking funding through federal, state, local, and private sources; contracting with appropriate consultants; and operation and maintenance of the completed trail."

The diversity of planning documents that address bicycling is a reflection of local, regional, and even state interest to diversify transportation choices, increase safety for road users, utilize bicycling and bicycle infrastructure as a catalytic tool for economic development, support community health and physical activity, and enhance quality of life. The following recommendations emerge from these

planning documents for consideration in this planning effort:

- Acknowledge that the needs and abilities of all people bicycling differ and that different strategies and facility types are necessary to support this wide target audience.
- Develop cross-city routes that combine wayfinding, off-street trails, and on-street bikeways to guide people bicycling to key community destinations and adjacent municipalities.
- Raise Iowa City's BFC status from Silver to Gold in 2017 and aspire for Platinum in the future.
- Construct additional wide sidewalks along key arterial corridors to extend the off-street network, connect the trail system to nearby destinations, and provide facilities appropriate for younger and less experienced people bicycling.
- Expand bicycle parking in high-demand areas and create policies and ordinances to standardize bicycle parking in future commercial and multi-family residential developments.
- Expand the trail network with extensions to the Iowa River and Willow Creek Trails and additional trails along other riparian corridors, including Ralston Creek from the future Riverfront Park northeast through downtown.
- Apply complete streets principles to all roadway projects to ensure the needs of bicyclists are considered and multi-modal infrastructure is included in roadway improvement projects and development projects.
- Incorporate bicycle facilities into district and area development and infrastructure projects to better link neighborhoods to key community destinations.
- Encouragement and education programs are critical to the success of bicycling as a viable mode of transportation.

The Metropolitan Planning Organization of Johnson County (MPOJC) maintains a GIS data layer of existing and planned bikeways that includes many (but not all) of the recommendations included in the plans referenced above. These recommended facilities, as well as all recommended facilities referenced in these planning documents, will be screened and analyzed in this planning process for their potential to contribute to the future Iowa City bike network.

## **Policies and Legislation**

Existing policies and legislation have a significant impact on the development of trails and bikeways in Iowa City. State and local regulations determine the design, construction specifications, and safe use of trails, sidewalks and on-street bicycle facilities. The current regulatory environment in Iowa City is similar to other municipalities of similar character in Iowa.

## **Local Policies and Regulations**

Local regulations and policies impact the presence and character of bicycling facilities in new development, provide procedures and design guidance for roadway design and traffic calming additions, and support safe and responsible use and enjoyment of public roadways by all road users. The City Code includes bicycle parking ordinances to integrate bicycle parking into new commercial and multi-family residential developments; subdivision design standards to incorporate trails, bikeways, and traffic calming into new subdivisions; and traffic-related regulations to encourage safe bicycling and restrict motor vehicle use of dedicated bicycle lanes. A summary of some of these regulations and policies is provided on the following page.



### Complete Streets Policy

Iowa City has adopted a complete streets ordinance that establishes the city's commitment to designing, building, operating, and maintaining public streets that accommodate people of all ages and abilities, regardless of their mode of travel. The city's complete streets policy stresses the importance of context within the street network and requires that capital projects incorporate complete street facilities like sidewalks and bicycle facilities set forth in City Council-adopted plans like the comprehensive plan, district plans, and bicycle and pedestrian plans. The ordinance references a number of design manuals to be used for design guidance, ranging from traditional sources like the AASHTO Green Book and the SUDAS manual, to more innovative publications like the NACTO Urban Street Design Guide and the NACTO Urban Bikeway Design Guide. The ordinance includes exceptions to the use of complete streets principles and performance measures to evaluate its effectiveness and impact. The MPOJC adopted a complete streets policy in 2015 to ensure that projects receiving federal funds through the MPO-administered Surface Transportation Block Grant Program (STBG) and Transportation Alternatives Program (TAP) adhere to complete streets principles and apply context sensitive design.

### Subdivision Regulations

The layout of the street network exerts the most profound influence upon how the community develops and the opportunity for safe and active transportation between neighborhoods and to various parts of town. Streets are also the most unalterable element in development. Once constructed, for better or worse, the street system, which includes block lengths and intersections, will remain unchanged for decades if not centuries. Except for arterial streets, most roadways are designed and constructed by private developers to meet city standards.

The goal of Iowa City's current subdivision regulations (updated in 2008) is for each new subdivision to contribute to the larger interconnected street pattern to ensure:

- Street connectivity between neighborhoods
- Multiple travel routes resulting in the diffusion and distribution of traffic
- Efficient routes for public and emergency services
- Provide direct and continuous vehicular and pedestrian travel routes to neighborhood destinations

It is a requirement that "all streets, sidewalks, and trails should connect to other streets, sidewalks, and trails within the development, and to the property line to provide for their extension to adjacent properties." Iowa City's subdivision regulations restrict the use of cul-de-sacs and other roadways with a single point of access and, when unavoidable due to topography or other constraints, limit their length.

Along local and collector streets block lengths are to be between 300 and 600 feet in length. Blocks longer than six hundred feet (600') must have midblock pedestrian connections between adjacent streets.

### Zoning Code

Iowa City plans for and encourages commercial nodes located at key intersections throughout the community to provide opportunities for basic retail uses and services close to where people live. All commercial zones require pedestrian access routes from the public sidewalk/street to the building entrance. All multi-family uses must have facades and entrances oriented to the street with vehicle parking to rear of the building or underground. All commercial and multi-family residential uses have minimum bicycle parking requirements.

The Comprehensive Plan and Zoning Code also encourage mixed use development in the Downtown and Riverfront crossings but also in the Neighborhood Commercial and Mixed Use zones dispersed throughout the community. Olde Towne Village at the intersection of Rochester Avenue and Scott Boulevard is an example of this sort of mixed use in a more suburban context.

The form-based code that is now in place for the Riverfront Crossings and Downtown focus on the pedestrian aspects of the street:

- Building facades and entrances are oriented toward the street.
- Building placement is located close to the sidewalk.
- Sidewalks are wider with space for landscaping (trees).

- Driveways/curb cuts are minimized with alley access or cross access/coordinated access preferred.
- Pedestrian streets, especially on existing long blocks are encouraged.
- Parking is located behind buildings or underground.

### Traffic Calming Policy

To address the need for traffic calming for streets not programmed for improvements in the near future, the city developed a policy and procedures for traffic calming driven by neighborhood request. The policy, which applies to local and collector streets, establishes a process for neighborhood engagement, corridor study, design considerations, and final approval of the installation. The traffic calming program has resulted in a variety of improvements on local and collector roadways,



Figure 20. The raised crosswalk and speed humps along Shannon Drive calm traffic and increase safety for bicyclists.



including Morningside Drive, College and Summit Streets, Shannon Drive, and Kimball Road. These installations create a safer environment for all road users, especially people bicycling and walking.

### **Bicycle Parking Policy**

Bicycle parking codified in the city's zoning ordinance as part of the off street parking and loading standards. Like motor vehicle parking requirements, minimum bicycle parking requirements vary for different land uses. Bicycle parking minimums are calculated as a percentage of motor vehicle parking spaces, usually between five and twenty-five percent, or as a fixed number per dwelling unit. In all cases in which bicycle parking is required, a minimum of four spaces shall be provided. The ordinance also includes general design standards that focus on parking area surface type, rack design, and rack placement. Parking may also be provided in the form of bicycle lockers or secure indoor storage facilities, but does not define conditions under which these parking facilities should be used, nor does it require their use.

### **State Policies and Regulations**

The Iowa State Code acknowledges and supports trail development as a catalyst for economic development and improved community health. The adoption of sections of the Iowa State Code pertaining to pedestrian, bicycle and motorist movement and operation on public roadways also promotes behavior in conformance with statewide regulations.

The SUDAS manual provides detailed design guidelines and standards for the development of consistent non-motorized transportation facilities. Design guidance is heavily dependent on the AASHTO Guide for the Development of Bicycle Facilities (2012 draft) and discusses traditional facility types such as shared-use paths, shared roadways, paved shoulders, bike lanes, and bicycle boulevards. The document does not include design guidance for newer, more innovative bicycle facilities such as separated bike lanes or cycle tracks. The

recent inclusion of an entire chapter for complete streets (Chapter 5) expands bicycling-related information beyond design details and establishes a more comprehensive context for the inclusion of bicycling facilities and impact of general geometric design principles on non-motorized transportation.

Key themes and considerations from this review of existing policies and legislation include the following:

- Through numerous ordinances, regulations and policies, Iowa City has established a layered system of safeguards to ensure that bicycle transportation is considered in all transportation investments, land subdivisions, and future developments.
- The city code requires people to park their bicycles at bike racks if they are within 300 feet of the intended destination. While this encourages bike rack usage, it can be difficult to abide by this law when bike racks in dense, high-traffic areas are full and no other bike parking is available, which indicates the need to expand the presence of bike parking.
- Bicycle parking regulations lack the level of design detail necessary to ensure that private developers provide secure and functional bike racks. Additional language regarding design specifications in accordance with the Association of Pedestrian and Bicycle Professionals' Essentials of Bike Parking (2015) should be referenced and provided to developers at the initiation of the site planning process.
- Design guidance for bicycle facility development relies heavily on AASHTO design manuals that do not incorporate recent developments and innovations in facility design, such as buffered bike lanes, separated bike lanes, and cycle tracks. This is especially apparent at the state level.

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## SECTION 4 Needs Assessment



## Needs Assessment

There is no single formula for building a bicycle-friendly community. Each community has unique values and needs with respect to bicycling. The needs and values of Iowa Citians shape the content and character of this plan, from the overarching vision and goals to the detailed facility and program recommendations. This chapter assesses the needs of the community with regard to bicycling and includes the following key elements:

- A description of bicyclist types
- Demand for bicycling facilities based on land use, population, and destination densities
- Public engagement processes and feedback, which consisted of an online survey, open house events, an online mapping tool, and a survey distributed to junior high school students

### Types of Bicyclists

Similar to motor vehicles, bicyclists and their bicycles come in a variety of sizes and configurations. This variation ranges from the type of bicycle a bicyclist chooses to ride to the behavioral characteristics and comfort level of the bicyclist. Bicyclists by nature are much more sensitive to poor facility design, construction, and maintenance than motor vehicle drivers.

Bicyclist skill level also leads to a dramatic variance in expected speeds, traffic tolerance, and behavior. Several methodologies for classifying bicyclists are currently in use within the bicycle planning and engineering professions. These classifications can be helpful in understanding the characteristics and preferences of different bicyclists. Historically, the most conventional framework classified the “design bicyclist” as advanced, basic, or child.

In 2012, the AASHTO Guide for the Development of Bicycle Facilities consolidated these three categories into two: “Experienced and Confident,” and “Casual and Less Confident.” Both of these methodologies at the federal level consider only existing

bicyclists and do not examine the American population as a whole, particularly those who do not currently bicycle but have interest.

A third methodology has been developed by planners in the City of Portland, Oregon and is supported by data collected nationally since 2005. This methodology identifies four types of bicyclists and describes their preferences and needs:

**Strong and Fearless:** These users will typically ride anywhere regardless of roadway conditions or weather. These bicyclists can ride faster than other user types, prefer direct routes, and will typically choose roadway connections.

**Enthusied and Confident:** This user group encompasses “intermediate” bicyclists who are fairly comfortable riding on all types of bicycle facilities, but usually choose lower-volume streets or shared-use paths when available. These users may choose a longer route to ride on a preferred facility.

**Interested but Concerned:** This user type comprises the bulk of the cycling population and represents bicyclists who typically only ride a bicycle on low traffic streets or shared-use paths under favorable weather conditions. These bicyclists perceive significant barriers to their increased use of cycling.

**No Way, No How:** (approximately 30-35 percent of population): Persons in this category do not bicycle, either because of general lack of interest or perception of severe safety issues with riding in traffic.

Bicyclist type within a city varies widely based on residents’ previous bicycle facility exposure and experience and city population makeup. University cities, such as Iowa City, offer a special environment that varies significantly from the rest of the nation and even the general population within the same city. Students, faculty, and staff on university campuses typically walk and bicycle in much higher numbers than their counterparts elsewhere.





1-3 %

**STRONG & FEARLESS**



5-10 %

**ENTHUSED & CONFIDENT**



50-60 %

**INTERESTED BUT CONCERNED**



30 %

**NO WAY, NO HOW**

## Demand for Bicycling Facilities

Determining geographic demand for bicycle facilities requires a layering and analysis of diverse inputs, from population and employment density to schools and parks to input gathered through the public engagement process. This memorandum compiles and synthesizes these diverse inputs to create a comprehensive picture of demand for bicycle facilities in Iowa City.

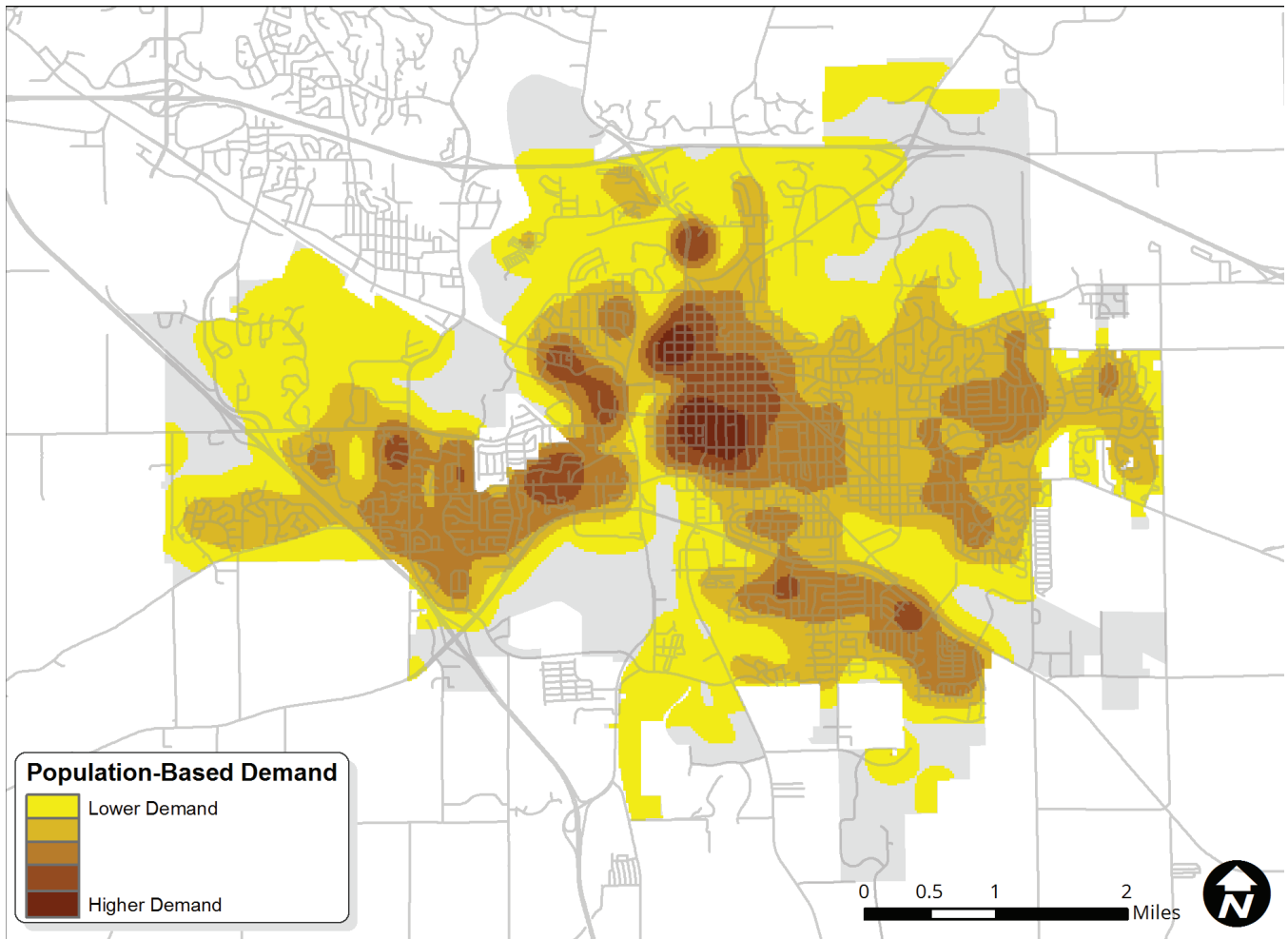
The Live/Work/Play Demand Model provides a general understanding of expected bicycling activity by combining individual spatial analyses representative of where people live, work, play, shop, access public transit, and go to school into a composite sketch of demand for bicycle facilities throughout Iowa City.

### Methodology

Categorical data representing each demand factor (e.g., live, work, play) are processed individually. The resulting values for each category are spatially joined to a uniform point grid that is used to develop a visual representation of category density using GIS-based kernel density tools. The result is a model of demand for bicycle facilities accounting for the impacts of destination proximity and density.

Scores increase for areas that have a high density of destinations that are close together, like a downtown. Scores decrease in areas with lower densities of destinations that are further apart such as fringe strip commercial. On the maps shown in this section of the plan, the highest density/usage/activity locations (shown in brown) do not represent specific physical facilities, but rather represent relative higher use zones as calculated.

Categories are scored on a scale of 1 to 5 based on density and proximity and then combined with equal weighting to develop a composite Live/Work/Play score. This composite representation of demand for bicycling facilities is an important factor that will inform bikeway network development.



Map 8. Population-Based Demand

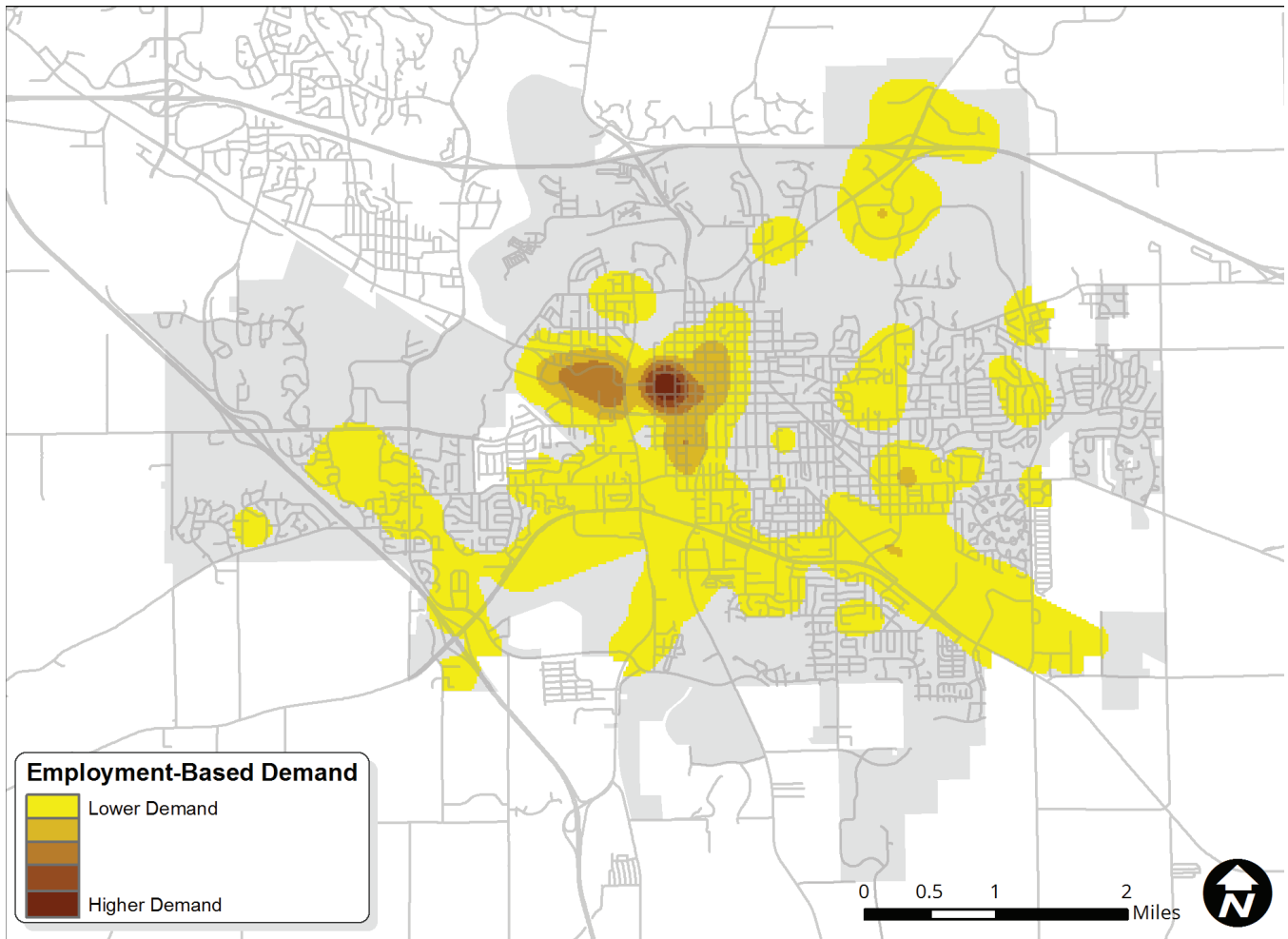
## Results

### Live

Population density is based on 2010 decennial census block level population information. Population distribution and density represent potential trip origin locations. More trips can be made in areas with higher population density. Student housing, multi-family housing complexes, and compact single family subdivisions are concentrated close to Downtown and the University of Iowa. The Central District, Southwest District, the South District, and the eastern end of the Northwest District have some of the greatest concentrations of residential populations in the city. Newer residential developments in

the Northeast and Southeast will drive demand for quality of life amenities, including bicycle facilities to increase access to nearby destinations. It is also important to note the many residential communities immediately adjacent to Iowa City that rely on the local transportation network, as well as goods and services within the city. While not reflected in the population-based demand assessment, connections to the adjacent municipalities of University Heights and Coralville, as well as residential neighborhoods in unincorporated Johnson County, such as Sunrise Village and Lake Ridge, will increase regional access to destinations throughout Iowa City.



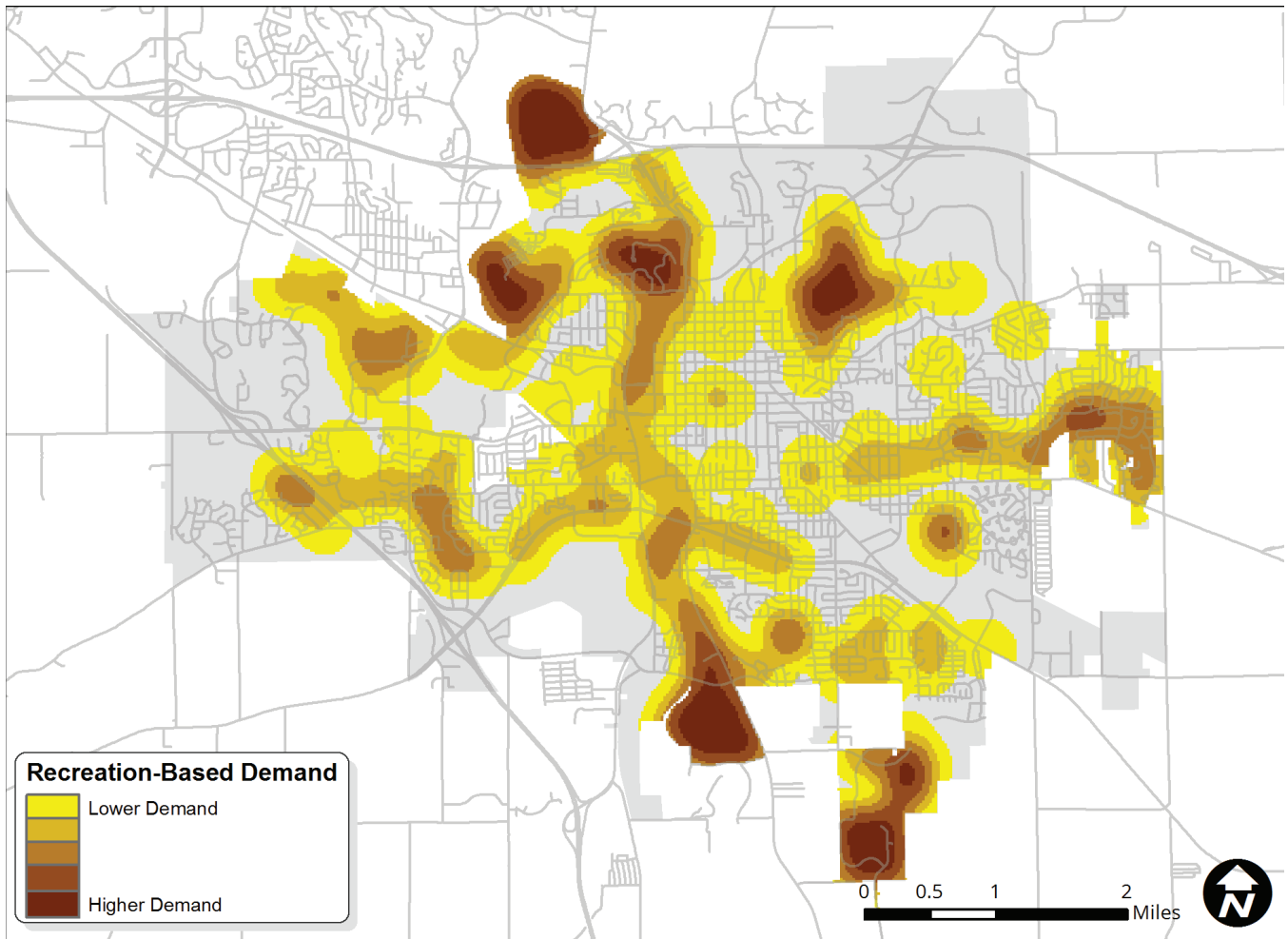


Map 9. Employment-Based Demand

## Work

Employment density mainly represents trip destinations for people working in Iowa City, regardless of their place of residency. This data layer is based on 2014 total employment by census block. Depending on the type of job, this category can represent both trip attractors, like retail stores and cafes, and trip generators, like office parks and office buildings. Hot spots for the “work” analysis include the University of Iowa, Downtown Iowa City, the Iowa City commercial developments along Highway 1

and Highway 6, the industrial corridor north of Highway 6 from Sycamore Street to the eastern city limits, and various employment sectors along North Dodge Street surrounding Interstate 80. As shown in the map below, the density of employment in Downtown and at the University of Iowa far outweigh all other employment concentrations in Iowa City. Their importance as two of the greatest trip generators in the city will be critical to future network development.



Map 10. Recreation-Based Demand

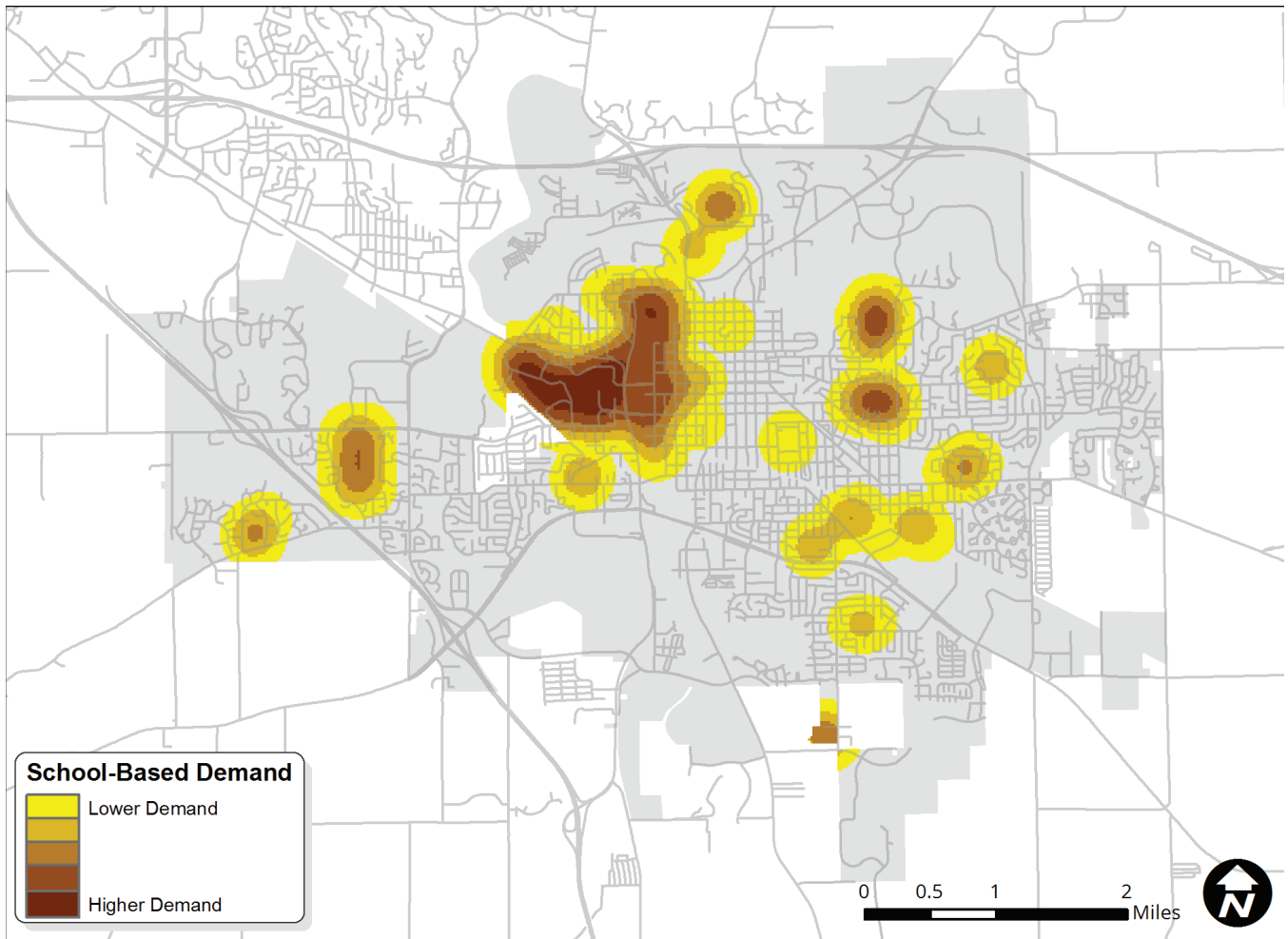
## Play

Recreation-based demand represents a combination of parks and linear trails that support recreational activities in Iowa City. Much like schools and other neighborhood amenities, many of the “play” hotspots are scattered throughout the community. As Map 10 illustrates, much of the demand generated by trails and parks is located adjacent to the Iowa River, from the Waterworks Prairie Park north of Interstate 80 south along the Iowa River Trail to the Terry Trueblood Recreation Area, with numerous parks in between. Future

development of a regional riverfront park, as identified in the Downtown and Riverfront Crossings Master Plan, will further strengthen the Iowa River as the primary recreation corridor in Iowa City and will increase recreation opportunities in the core of the city.

Other high-demand areas include Hickory Hill Park, Sycamore Greenway, Iowa City Kickers Soccer Park, Scott Park, Court Hill Trail, Mormon Handcart Park, and the Willow Creek Trail. The map illustrates the importance of trails and greenways as links between city parks and other major land uses.





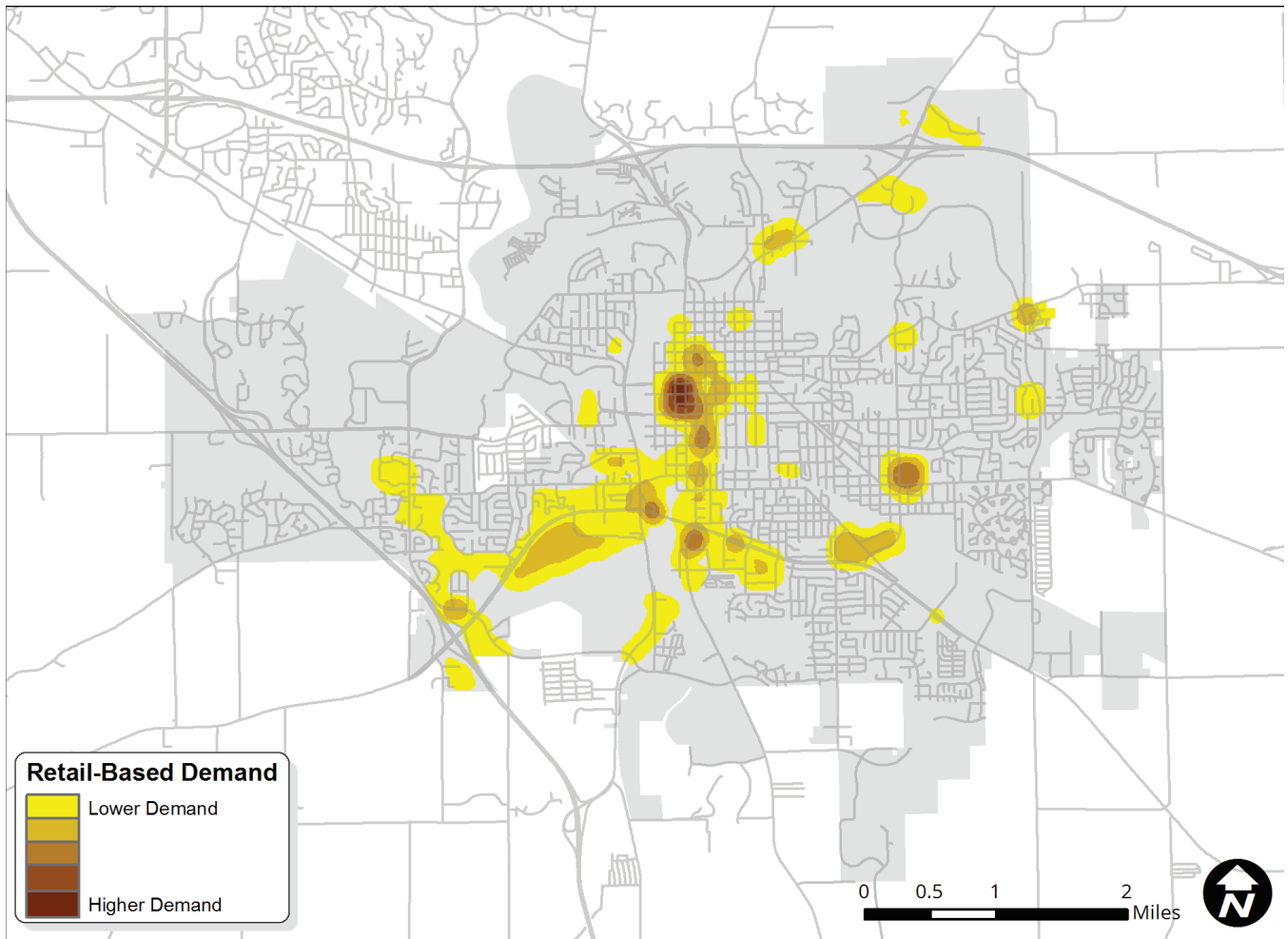
Map 11. School-Based Demand

## Learn

School-based demand represents where students K-12, at community college, or at university go to school. K-12 schools are distributed across the entire city and generally reflect residential population distribution. Iowa City High School, West High School, and Regina Catholic Education Center generate a large number of trips, but their attendance zones are much larger than most middle and elementary schools. An increased focus on bicycle infrastructure surrounding elementary and middle schools, which have smaller attendance zones and shorter average distances from home to school, may yield a greater increase in youth bicycle trips. A new ICCSD elementary school, Hoover Elementary, is

slated to open in the fall of 2017. While not reflected on this map, the new elementary school, which will be located at the intersection of American Legion and Barrington Roads, will impact student attendance zones, travel routes, and mode choices.

University and community college demand is concentrated at the University of Iowa Campus. This overlaps with other demand factors like employment, residential, and retail, all of which stress the importance of the urban core as the area with highest demand for infrastructure supporting bicycle mobility.

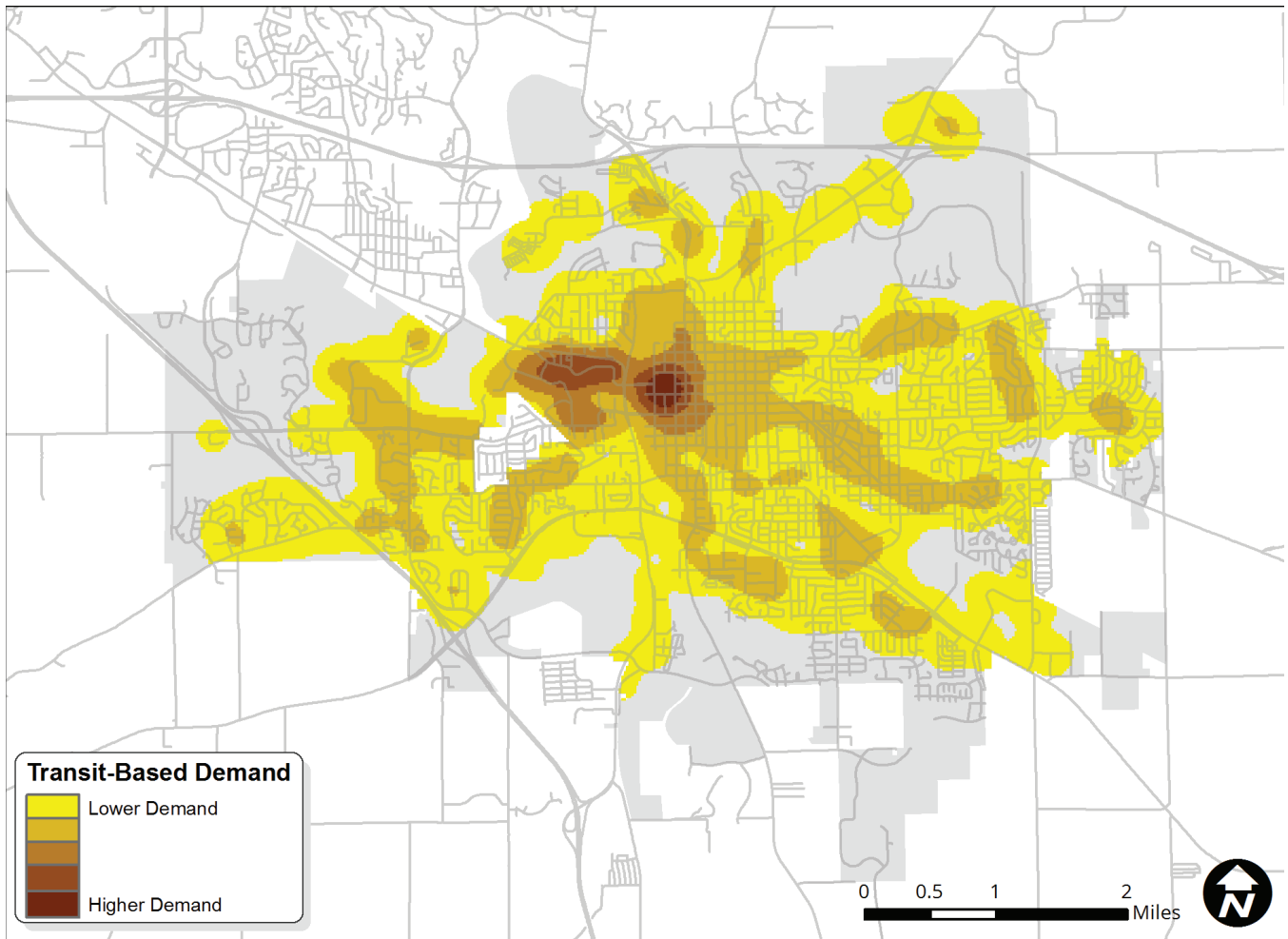


Map 12. Retail-Based Demand

## Shop

Retail-based demand is calculated using a combination of retail, arts, entertainment, food services, and accommodation employment sectors from the North American Industry Classification System (NAICS). Together, these sectors provide a rough sense of shopping and entertainment destinations in Iowa City. In addition to a high density of retail employment in the Downtown, smaller nodes of retail and shopping destinations are located along Gilbert Street south of Downtown, along Highway 1 and Highway 6, at First Avenue and Muscatine Avenue, at First Avenue and Lower Muscatine Road, and at North Dodge Street and North Summit Street.

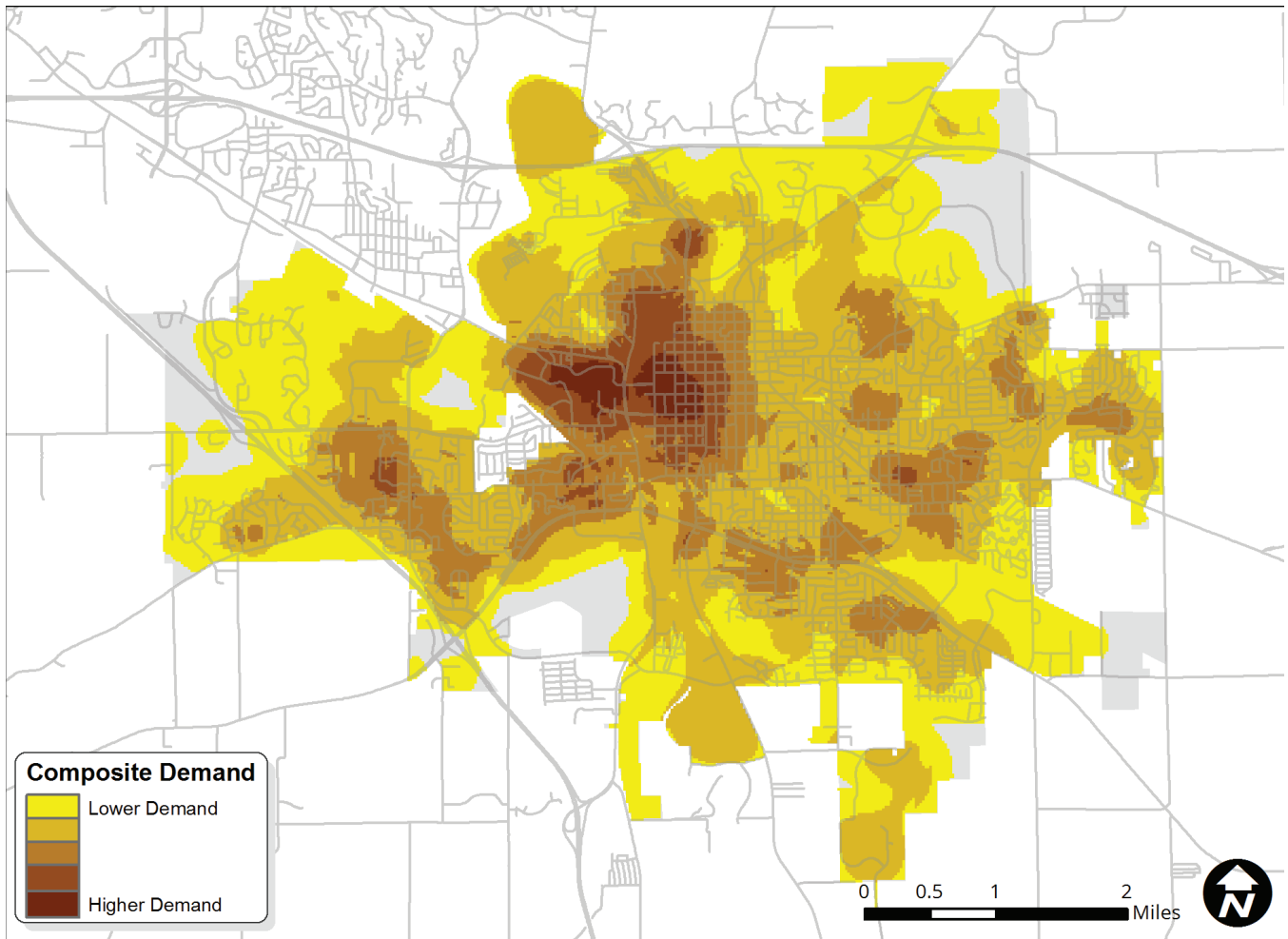




Map 13. Transit-Based Demand

## Transit

Transit-based demand is assessed by the location of bus stops in Iowa City operated by the region's three transit providers: Iowa City Transit, Coralville Transit System, and Cambus (University of Iowa). The city as a whole is generally well served by public transit. The high density of transit stops in Downtown and through the University of Iowa campus reflect the high number of routes that service the urban core. Additional corridors like Muscatine Avenue and Melrose Avenue are served by multiple routes as well. By improving bicycle access to these transit hotspots, the city can effectively increase bicyclists' ability to travel longer distances and access destinations outside comfortable bicycling range.



Map 14. Composite Demand

## Composite Demand

The composite is determined by overlaying the individual density maps and applying standard weights to each factor. This composite demand analysis shows that the areas of Iowa City with the highest potential for bicycle travel demand are dispersed in clusters throughout the city, often surrounding land uses that generate high volumes of trips, bicycle or otherwise. Downtown and the University of Iowa campus generate the most demand for bicycle facilities, followed by major commercial corridors and nodes, trails and recreation areas, and clusters of schools.



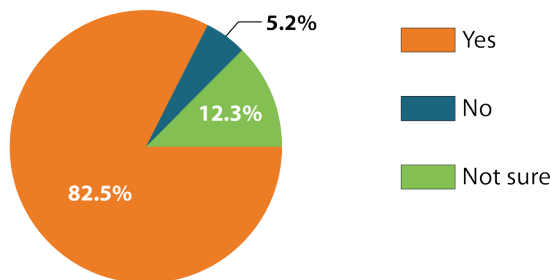
## Community Input

Iowa City residents have played an active role in shaping the character and content of this plan through multiple on-line and in-person engagement activities and events. The following section of this chapter summarizes the process and input received through these engagement opportunities, including two open houses, an online survey, and an online mapping tool.

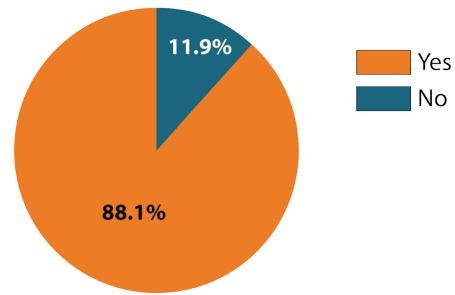
### Junior High Survey

Iowa City reached out to students at South East Junior High to learn more about their experiences bicycling in the community. Nearly three hundred students shared information about their riding preferences, helmet usage, interest in earn-a-bike classes or mountain biking classes, and what they like and do not like about riding a bike. Over three hundred students completed the survey, providing valuable information about the bicycling habits, preferences, and desires of Iowa City's junior high students. The input is incorporated into recommendations for programs and network improvements to support bicycling by people of all ages, especially children and young adults. The results of this survey are shown in the figures below.

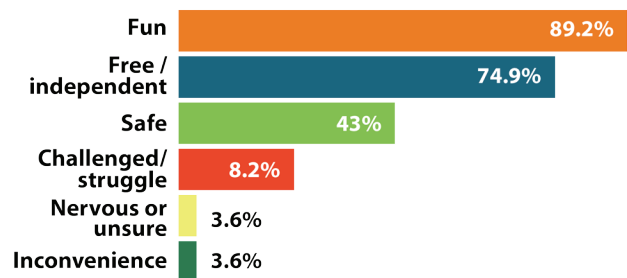
Do your parents think it is safe for you to ride your bike without adult supervision? (285 responses)



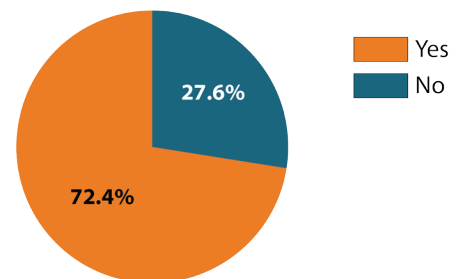
Do you have a bike of your own? (285 responses)



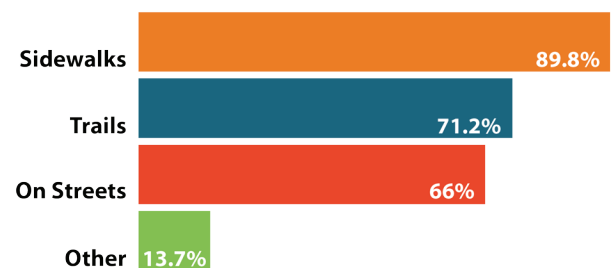
Which of these words describes your typical biking experience? (check all that apply)? (279 responses)



Do you know where the nearest bicycle trail is? (283 responses)



Where do you feel comfortable / safe riding a bike? (Check all that apply) (285 responses)



## Open House Events

The community engagement process included two open houses. The first of these, held at the beginning of the planning process on January 26, 2017, provided the more than 120 attendees with an overview of the planning process and focused on collecting information, ideas, and inspiration to guide plan development. On display were boards illustrating different bicycle facility types and maps and displays of specific geographic sectors, asking participants to identify key issues for each area as well as more general citywide issues. Their comments proved very important in the planning of the overall network. Frequently mentioned issues by sector follow:

### East of the Iowa River

- Gilbert Street, include the possibility of a road diet with bike lanes
- Highway 6 corridor, including both paths along the corridor and better accesses across it
- Kirkwood Avenue
- An east-west quiet street route incorporating an improved Sheridan Avenue
- Downtown commuter routes using the Muscatine and Lower Muscatine corridors



Figure 22. Community members discuss existing barriers and desired routes during the first open house.

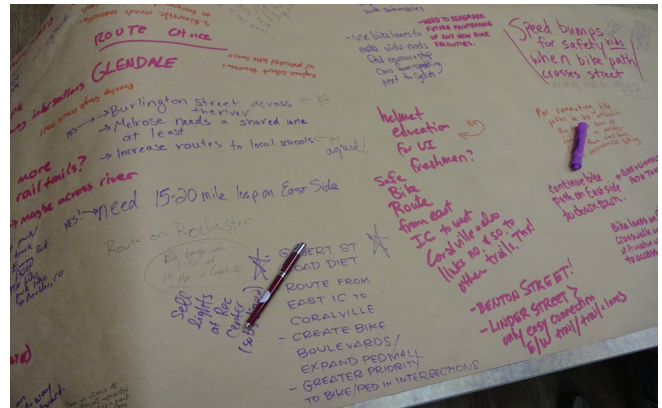


Figure 21. Participants at the first open house commented on key issues related to biking in Iowa City.

- East-west route using Glendale Boulevard, and improvements of transition to the Market/Jefferson pair

- Rochester Road

### Downtown/Campus

- Burlington Street (Highway 1) Bridge and connection to Downtown campus
- River crossings in general, with connections to rest of a system
- Continuity and safety of Melrose
- More direct routes to Coralville



Figure 23. Community members review potential facility types at the first open house.



- Facility improvement of the Market/Jefferson/ Glendale corridor
- Bicycle boulevard on College Avenue

### West of the River

- Improved facilities on Benton Street
- Melrose continuity as principal east-west route
- River crossings
- Completion and connectedness to Clear Creek Trail

### General Issues

- Wayfinding
- Bicycle boulevards and commuter routes radiating from Downtown
- Good north-south bicycle arterial
- Protected bike lanes on bridges
- More effective pavement markings than sharrows
- Better law enforcement and education
- Protected lanes downtown
- Better maintenance of streets and bike lanes

The second open house was held on May 25th, 2017 to share initial plan concepts and recommended bikeways and solicit input from community residents. Residents viewed project boards that displayed results of previous engagement activities, illustrated different facility types, outlined the plan vision and goals, and described different supporting programs to help build a culture of bicycling in Iowa City. More than 40 residents attended the open house. The comments and themes presented below highlight the diversity of input and ideas shared by attendees:

- Willow Creek Trail extension to Hunters Run Park
- Bike lane markings on outer lanes/shoulders of Highway 6/Riverside Drive



Figure 24. Network recommendations were discussed during the second open house.

- Links to schools, especially West High
- Hawkins and Melrose are hilly, need traffic calming
- Myrtle-Riverside intersection is dangerous
- Improved connection from Hwy 1 to Iowa River Trail
- Jefferson problem crossing 2 lanes from left side bike lane; variety of other comments about speeds on Jefferson and Market



Figure 25. Community members reviewed potential supporting programs during the second open house.

## Online Survey

The Bicycle and Pedestrian Survey helps define the preferences and opinions of these prospective cyclists and pedestrians, and provides important guidance for designing the network.

### Who are Iowa City's Cyclists?

While the Bikeway Survey was not a scientific survey, the number and diversity of responses suggested that it represented a fairly representative sample of citizens with interest in urban bicycling. The first questions explored the characteristics of these responses, and found that:

- Survey respondents represent all parts of the city but were most concentrated in the central part of the city. While residents in all parts of the city are clearly interested in active transportation, about 40% of survey respondents live in the central part of the east bank between the river and 1st Avenue. Almost 60% were from areas east of the river, although central west bank neighborhoods also were well represented.
- Central Iowa City destinations – Downtown and University of Iowa campuses and facilities –are dominant. Over 3/4 of respondents reported that their most frequent destination was in the central part of the city on both banks of the river. Of the two, the east bank (Downtown Iowa City and the downtown campus) represented the greatest share of destinations.
- Most survey respondents are frequent bicyclists. A large majority (about 77%) of participants reported riding at least once or twice weekly, with 53% riding several times per week to daily. By way of contrast, 65% report walking for enjoyment or transportation on at least a weekly basis; and 17% report at least weekly use of public transportation.

Exercise and commuting are the most frequent reasons mentioned for bicycling. Notably, 72% of respondents commute by bicycle, suggesting a

highly committed survey sample. But people bike for a variety of reasons – over half of respondents reported biking for routine errands, social visits, and trips to parks and recreational facilities.

The largest group of respondents are cyclists most interested in improved infrastructure. The largest group, over 60%, were committed urban cyclists comfortable in streets, but recognizing and supporting new facilities to expand ridership and improve safety. The next largest group at over 31% of respondents characterized themselves as interested cyclists who are capable of using low-volume streets, but concerned about riding in mixed traffic. Very small groups were at the edge of the interest spectrum. Only 2% viewed themselves as comfortable in every situation and seeing no reason for infrastructure development, and less than 1% were unlikely to ride under any circumstances.

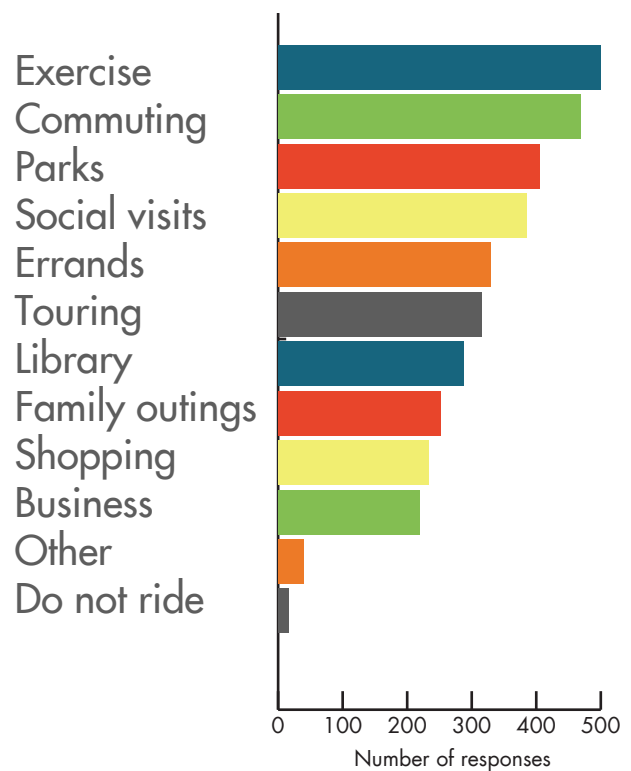


Figure 26. Bicycle activity by type.



### Destinations

A bicycle transportation network should get people where they want to go. The survey listed a number of different community destinations or destination types, and asked respondents to rank them based on the importance of good bicycle access to them. Figure 27 describes the results, indicating the percentage of participants who considered good access important or very important. These in turn suggest the places that the network should serve. The top five destinations reported as “important” or “very important” by respondents were:

- The University of Iowa Downtown campus
- Downtown Iowa City
- The University of Iowa West Campus
- Trails
- Iowa City Public Library

Next in this ranking were parks (notably Terry Trueblood, City Park, and neighborhood parks) and schools at all levels. The lowest ranking destinations in terms of importance were shopping centers or office parks on the periphery of the city.

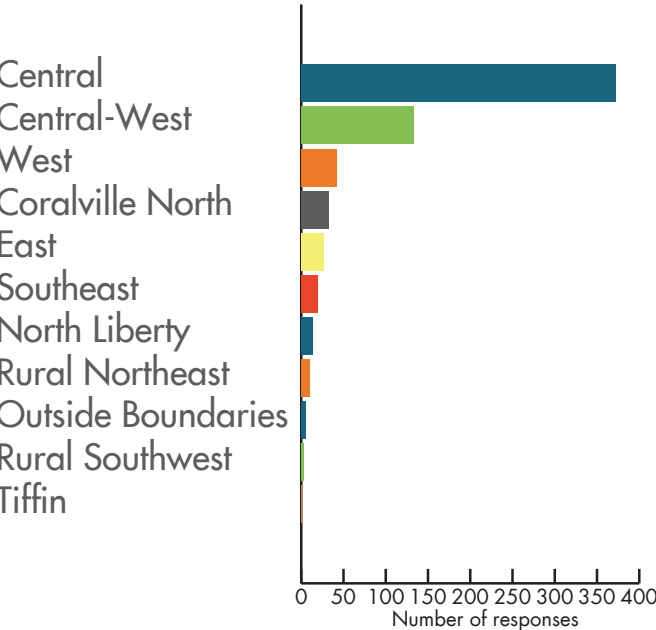


Figure 27. Destinations.

### Trail Use

The survey showed that trails, a key part of a bicycle transportation network, are also a top destination. To go deeper, the questionnaire asked respondents to rate the frequency of their use of individual principal trails. The most frequently used trails (measured by largest percentage of respondents using the facility at least weekly) were:

- Iowa River Trail (36% of respondents)
- Dubuque Street (29%)
- Clear Creek (21%)
- North Liberty (19%)
- Highway 6/Highway 1 (18%)

### Infrastructure Types

Much of the survey was designed to assess the comfort of current and prospective bicyclists with different types of bicycle environments. The survey asked participants to respond to a gallery of photographs of streets and facilities. Most of the images for evaluating streets were local to Iowa City, while infrastructure solutions typically came from other cities. Favorable ratings for these examples included:

- This presents a very safe route that can be used by all people. (2X weighting factor)
- This is a comfortable cycling route for most users. (1.5X weighting factor)
- I am comfortable using this street myself, but do not advise it for inexperienced cyclists or younger riders. (1X weighting factor)

The facilities were grouped on the basis of a weighted score, calculated by multiplying the percentage of favorable participant responses by each weighting factor for individual responses and adding the results.

- The top-rated settings include completely separated paths, both along roads and on exclusive

right-of-way), or a bike route with a physical separation from travel lanes. Given the importance of sidepaths in Iowa City's existing system, the high rating for an enhanced sidepath with clearly marked crossings may be of special interest. Iowa City's Court Hill Trail was placed in this top group.

- The next highest-rated group included buffered bike lanes, high quality sidepaths with bike lanes, and quiet local streets. Iowa City's 7th Avenue was included in this group.
- The third highest rated group included conventional bike lanes and bicycle boulevards, as well as the very unconventional median cycle track on Pennsylvania Avenue in Washington DC. Three local settings (Camp Cardinal, Highland Avenue, and the Jefferson Street bike lane) were included in this group.
- Next in preference order were conventional bike lanes on arterial streets and collectors with no markings or shared lane markings.
- The lowest rated settings were arterial streets with no markings shared lane markings.

## Importance of Various Actions

Responses to a list of possible actions to improve Iowa City's bicycle environment indicated a strong

priority for infrastructure programs. Initiatives that ranked highest (over 2/3 of respondents rating the initiative as either effective or very effective) included:

- Buffered bike lanes (rated effective or very effective by 94% of respondents)
- Trail development (88%)
- Bike lanes (85%)
- Safe routes to schools (86%)
- Better project design for bicycle access (80%)
- Strong bicycle advocacy organization (75%)
- System of destination-based on-street routes (73%)
- Law enforcement (71%)
- Bike safety activities designed for kids (69%)
- Showers and changing facilities at workplaces (69%)
- Widened sidewalks or sidepaths along major streets (68%)
- Better crossings/intersection controls at major streets (68%)

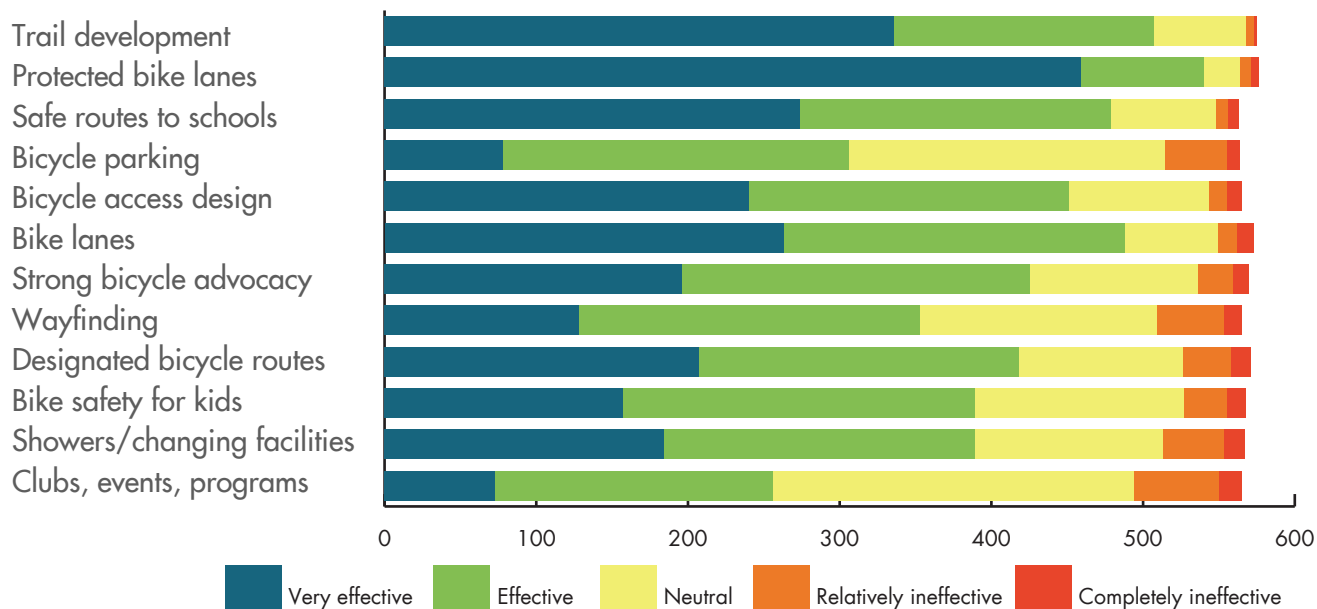
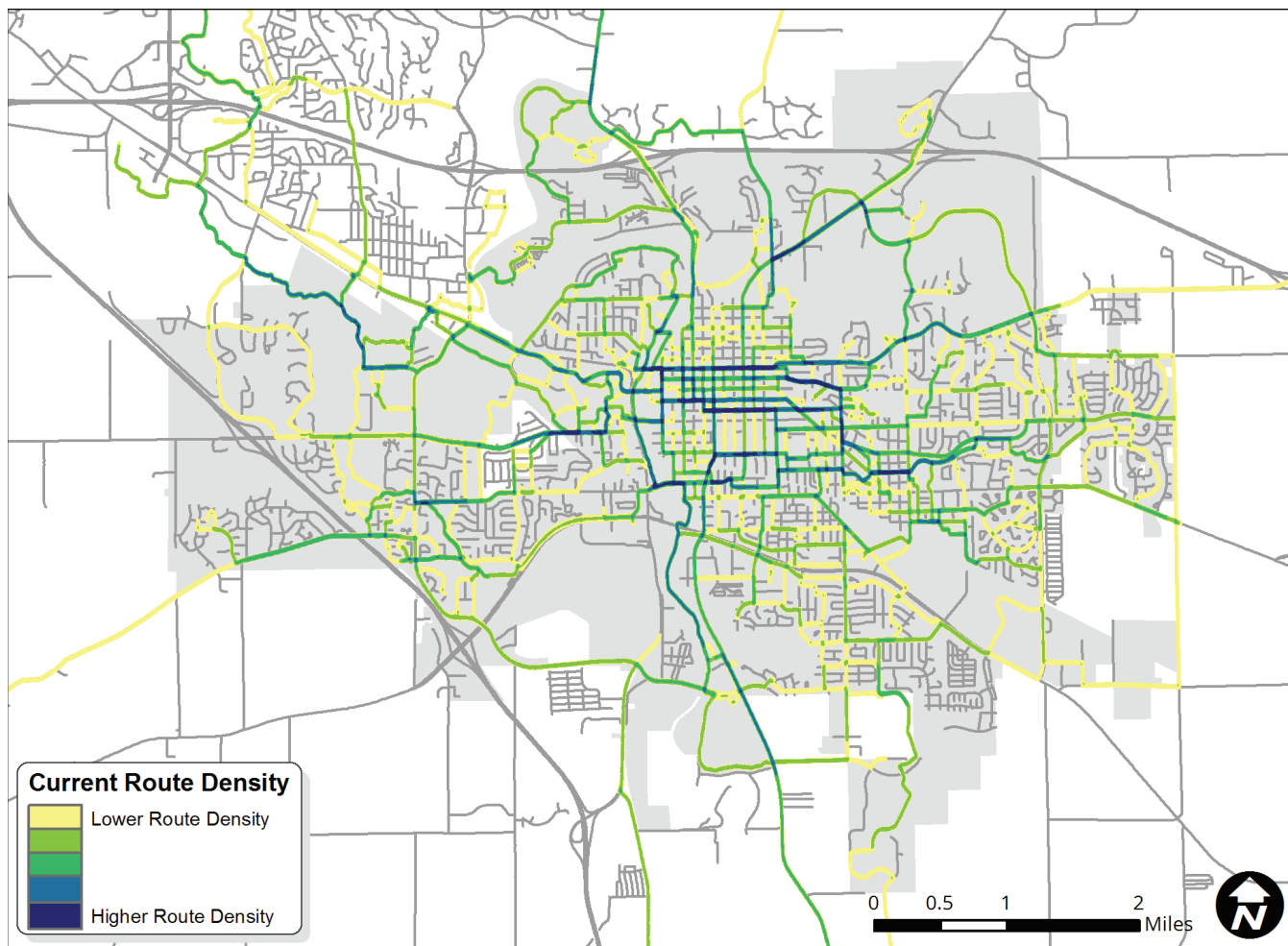


Figure 28. Community preference for actions to improve bicycling





Map 15. Current bicycling route density

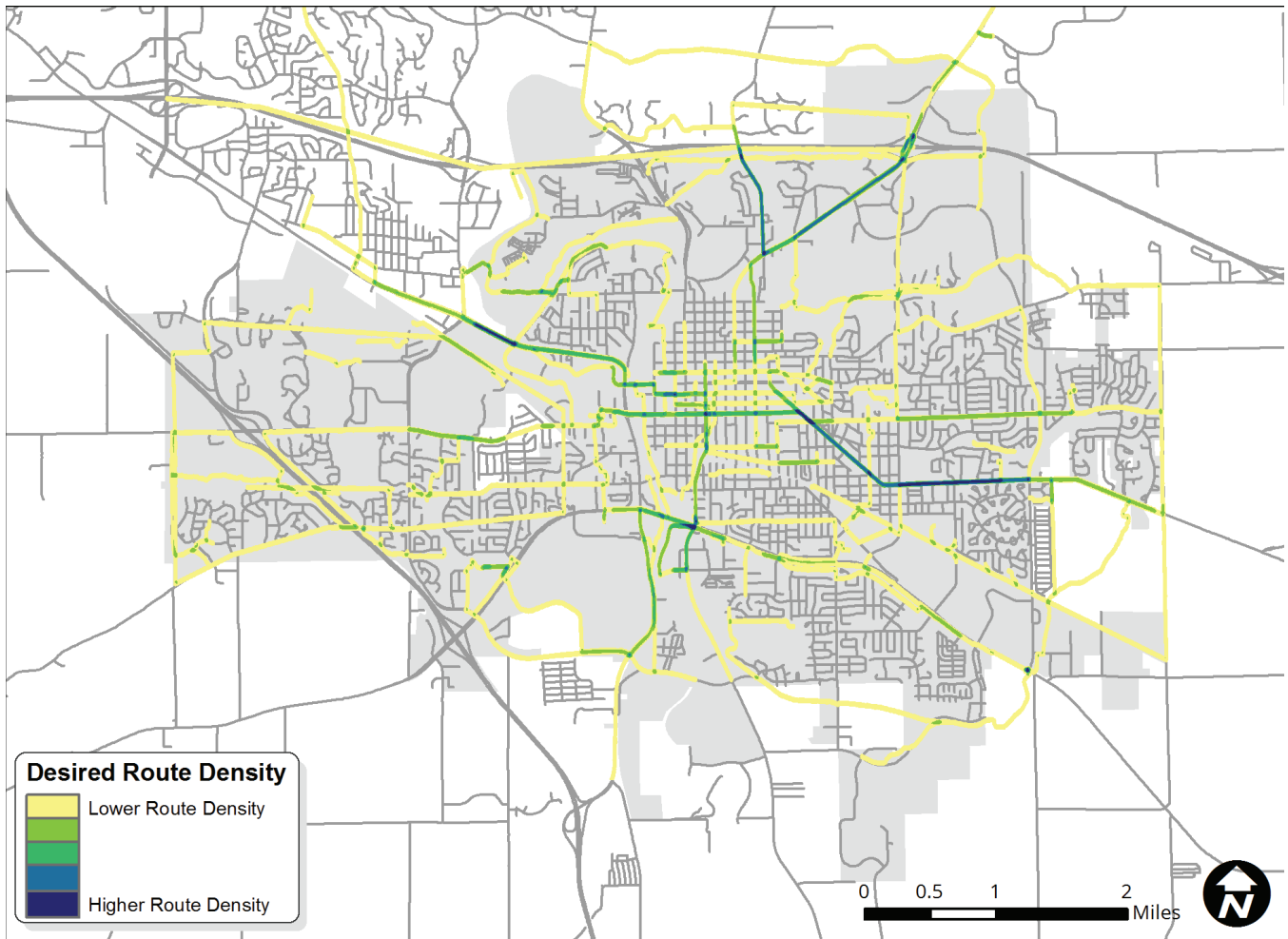
## Online Mapping Tool Input

More than seventy individuals shared their ideas for bicycling in Iowa City using the online mapping tool developed specifically for this planning process. The feedback provided using this online mapping tool included current bicycling routes, desired bicycling routes, and community destinations, among others. These three categories of input expand the analysis for high demand areas by supplementing the Live Work Play Analysis with community-driven data that combines route selection with trip destination information.

## Current Bicycling Routes

Map 15 depicts the density of current bicycling routes identified via the online mapping tool. Blue lines indicate more heavily traveled trail and street

segments. Yellow lines also indicate the presence of bicycling activity, but to a lesser extent. The results show that people are bicycling on roads of all sizes from state highways and country roads to local and neighborhood streets. Many people also travel on the city's extensive trail system. High concentrations of bicycling activity are present in the Central District, most notably on east-west corridors such as College Street, Washington Street, Market Street, Jefferson Street, Rochester Avenue, Glendale Road, and Bowery Street. This concentrated activity in the Central District stresses the need for quality facilities to support travel to Downtown Iowa City and the University of Iowa campus, as well as cross-city routes that connect to west Iowa City and neighboring Coralville.



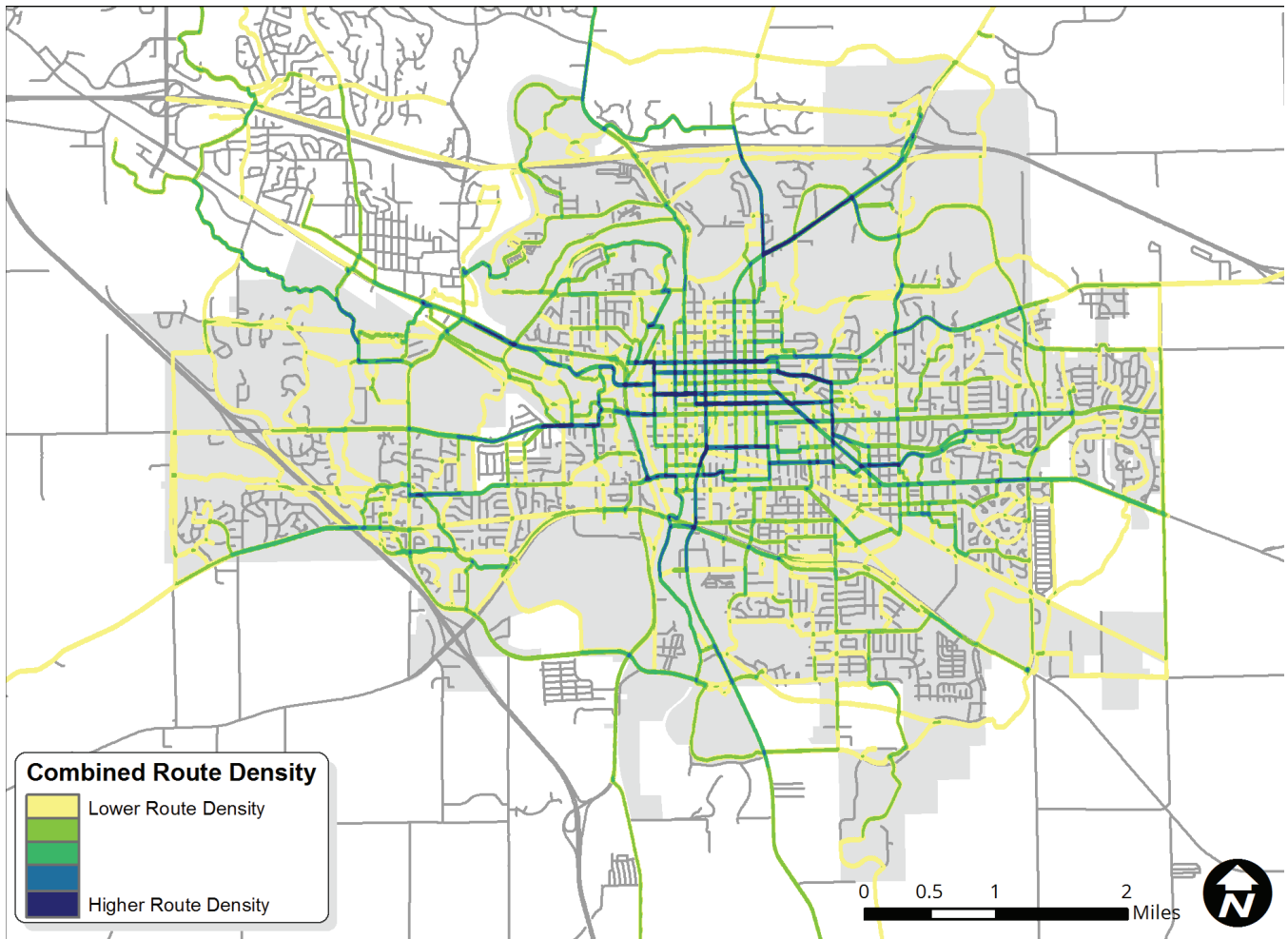
Map 16. Desired bicycling route density

## Desired Bicycling Routes

Desired bicycling routes provide critical information regarding trip destinations, existing corridors in need of physical improvements to support bicycle activity (corridors that people would use if not for the current lack of bicycle infrastructure), and new trail corridors in undeveloped areas and along riparian or other corridors. Iowa City residents identified 121 desired routes using the online mapping tool. Map 16 displays the density of these desired routes. The majority of desired routes are shown in yellow on the map, indicating lower density. Road segments and trails shown in blue indicate a higher density and

a corresponding need for improvements to facilitate safe and convenient bicycle travel. Higher density routes include Muscatine Avenue, Burlington Street, Second Street (Highway 6) leading into Coralville, North Dodge Street, Prairie Du Chien Road, and Highway 1 West / Highway 6 across the Iowa River from Hudson Avenue to Gilbert Street. The higher density corridors east to west, as indicated by Second Street, Burlington Street, and Muscatine Avenue, point to the need for a cross-city route to support longer distance trips and supporting access to high demand areas like Downtown Iowa City and the University of Iowa.

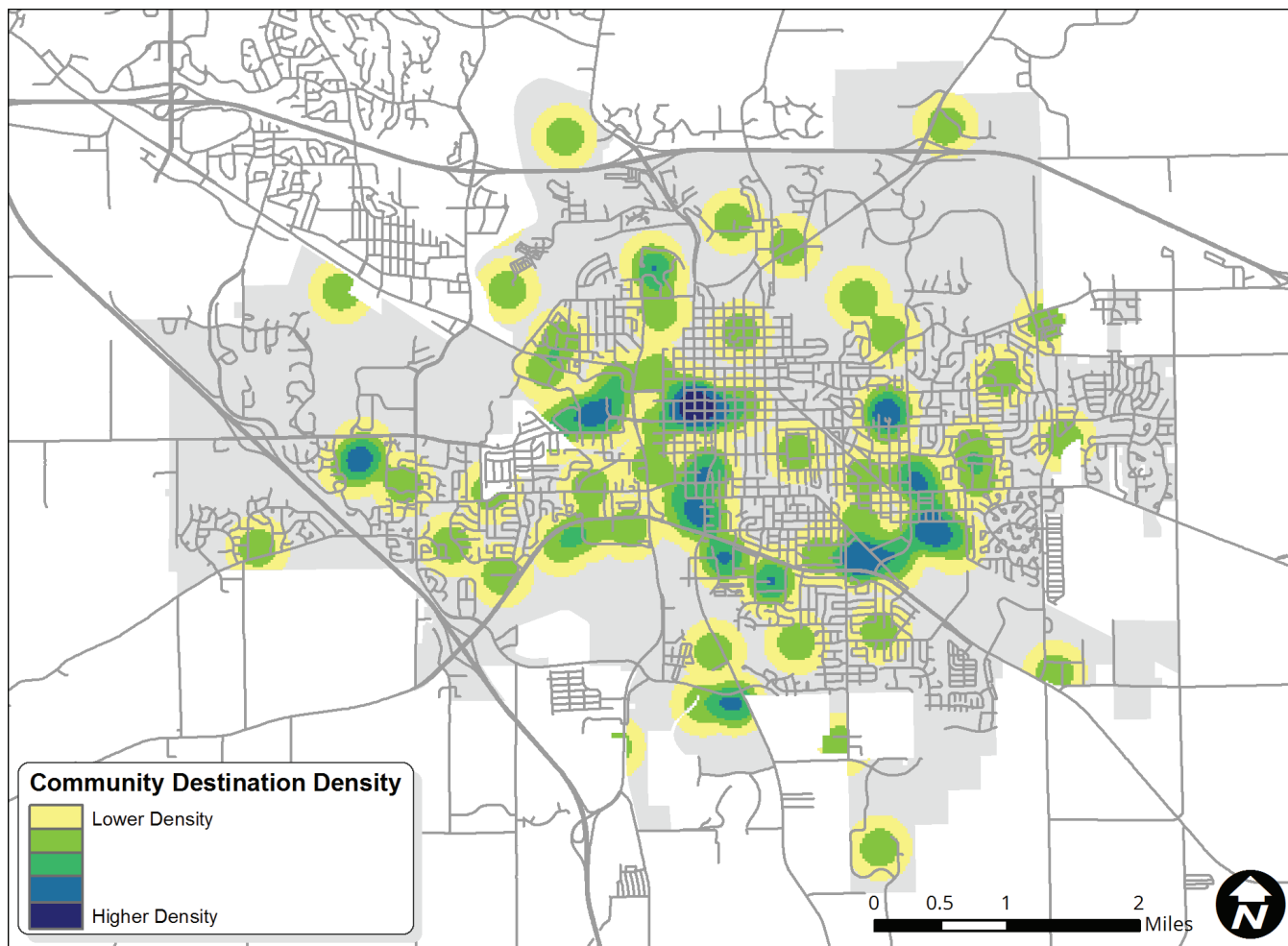




Map 17. Combined bicycling route density (existing and desired)

### Combined Route Density

When existing and desired route densities are combined, a more complete picture emerges that combines commonly traveled, lower-stress corridors and trails with busier thoroughfares that provide more direct routes to cross-town destinations. Map 17 highlights a two-fold need to both improve existing bicycle routes and develop new bicycle routes.



Map 18. Community destination density

## Community Destinations

Eighty-nine individual destination points were added to the online mapping tool during the planning process. Map 18 displays high-density areas of Iowa City destinations using a similar technique to the Live Work Play analysis. The blue areas represent either concentrations of adjacent destinations, or a single destination identified by more than one map user. The results of this spatial analysis overlap with many high-demand areas identified in the Live Work Play analysis. Major destinations and destination areas include Downtown, the University of Iowa, the University of Iowa Hospital and Clinics, the Sycamore Mall, Mercer Park and Southeast Junior High School, Iowa City High School, West High School, and Terry Trueblood Recreation Area.

## Conclusion

The combination of data-driven analysis with community input creates a compelling case for a complete bicycle network that serves all of Iowa City, not just the urban core surrounding Downtown and the University of Iowa. While these two destinations generate the highest demand for facilities to support bicycling activity, the series of maps in this chapter highlight the need to serve other significant destinations as well. The diversity of destinations for bicycling trips reflects the diversity of bicyclists themselves. People shopping, running errands, going to school, commuting to work, catching the bus, cruising along the trails and to the parks—everyone can and does travel by bicycle. By creating a complete, interconnected, and comfortable bike network, more and more Iowa Citians can enjoy the benefits of bicycle travel.





## SECTION 5 Recommendations





## Recommendations

Iowa City's target of becoming a Gold-Level BFC will be achieved in large part due to expansion of and improvements to the bikeway network. This memorandum outlines the principles, attributes, and structure for bicycle network development, followed by recommendations for specific infrastructure improvements. At full build-out, the envisioned bikeway network will support bicycle transportation and recreation for people of all ages and abilities. The memorandum concludes with recommendations for support systems that enhance the bicycle network, including wayfinding systems, bicycle parking facilities, bike share, and integration with transit.

### The Iowa City Bikeway Network Network Principles

An effective bicycle network for Iowa City should follow specific principles and performance measurements. Some of the world's best work in identifying design principles was done by the Netherlands Centre for Research and Contract Standardization in Civil and Traffic Engineering. This plan adapts the Netherlands concepts to medium-sized American cities like Iowa City, identifying six guiding elements for an effective active transportation network:

- **Integrity.** The ability of a system to link starting points continuously to destinations, and to be easily and clearly understood by users.
- **Directness.** The capacity to provide direct routes with minimum misdirection or unnecessary distance.
- **Safety.** The ability to minimize hazards and improve safety for users of all transportation modes.
- **Comfort.** Consistency with the capacities of users and avoidance of mental or physical stress.
- **Experience.** The quality of offering users a pleasant and positive experience.
- **Feasibility.** The ability to maximize benefits and

minimize costs, including financial cost, inconvenience, and potential political opposition.

These six elements express the general attributes of a good system, but must have specific criteria and measurements that both guide the system's design and evaluate how well it works. More information about these network principles can be found in the plan appendix.

### Attributes of the Network

Based on this development of the six elements presented above, the Iowa City network design follows the following major attributes:

**Tailored to User Groups.** Planning a bicycle network for Iowa City, with a geography that includes significant grades, the meandering Iowa River that creates some relatively isolated areas, and the University of Iowa campus on both sides of that river, requires an understanding of the specific user groups for the system. In addition, Iowa City's street and trail system is integrated into the networks of Coralville, North Liberty, and University Heights. These user groups include:

- Commuters traveling to the city's (and metropolitan area's) core destinations – Downtown Iowa City and the University of Iowa campuses. The central location of these districts keeps most trip distances within very manageable ranges, although community expansion to the west and east also increase their length.
- Cyclists making utilitarian trips to other destinations outside of the two core districts. In Iowa City, where an unusual number of people use bicycles for basic urban transportation, the ultimate system must serve a variety of destinations, including schools, commercial clusters and corridors, and employment centers. From a framework point of view, this requires a grid of routes that complement a radial approach to Downtown and campuses.



- Travelers to parks and trails. Iowa City's bicycle network should be integrated with its park system, which also went through a master planning process in 2017. Additionally, trails themselves are both facilities and popular destinations, so on-street routes from neighborhoods to trails are important.
- Recreational users. The Iowa River, Clear Creek, North Liberty, Court Hill, and Dubuque/Mehaffey Bridge Trails are major elements of the regional trail system, and receive heavy use. These facilities serve both recreational users and cyclists bound for specific destinations. A number of Iowa City residents also travel by bike or on foot within the city for recreational purposes, from serious road cycling to comfortable in-city workouts.
- Users out of necessity. Many people in Iowa City depend on active transportation for basic travel. This is especially true of individuals or families with limited incomes who may not have regular access to cars. For these residents, the bicycle offers an invaluable tool, connecting them to economic opportunities and community resources that might otherwise be difficult to reach. A transportation system that serves the interest of social equity must also expand options and access to these areas of affordable housing.
- Iowa City youth. Children, teens, and young adults in Iowa City can be grouped into most of the categories described above; however, these younger residents are unique in both their lack of experience with motor vehicle traffic and ability to anticipate and negotiate interactions with other road users. In addition, this group represents the future of Iowa City, and their potential to influence transportation behavior and patterns is tremendous. Building a bicycle network that supports Iowa City youth, including safe routes to school and parks, will help to build an appreciation for and commitment to active transportation for future generations.

**Destination-Based.** A key market for the Iowa City network is people headed for specific destinations. Destinations that the community and both existing and potential users identify as important contribute powerfully to the structure of the network. The proposed network is more than a system of bicycle-friendly streets. It is instead a transportation system that takes people to specific places.

**Function Model.** Several reasonable models for network planning exist, with choices dependent on the nature of the city. The Iowa City system identifies principal routes that offer long-distance continuity along destination-rich corridors, somewhat analogous to transit lines. Other types of facilities such as bicycle boulevards and connecting links serve specific functions, such as neighborhood connectivity or short links to specific destinations.

**Incremental Integrity.** Incremental integrity – the ability of the network to provide a system of value at each step of completion – is an important attribute. The first step in completion should be valuable and increase bicycle access even if nothing else is done. Each subsequent phase of completion follows the same principle of leaving something of clear value and integrity, even if it were the ultimate stage of completion.

**Evolution.** As part of the concept of incremental integrity, the system is designed to evolve and improve over time. For example, a relatively low-cost project or design element can establish a pattern of use that supports something better in the future. Independent segments should connect with other segments by means of an interim signing or marking strategy so it is not isolated.

**Conflict Avoidance.** Projects should demonstrate the multiple benefits of street adaptations. On many streets, traffic calming and signage can provide satisfactory facilities that focus on the positive and minimize divisive conflicts. On others, upgraded facilities can be provided with minimum impact on traffic operations. For example, bikeway

design elements such as speed tables and traffic diverters can slow motorists and keep unwanted through traffic out of neighborhoods, benefiting both cyclists and neighbors.

**Use of Existing Facilities.** Existing features like the Court Hill and Iowa River Trails, major sidepaths, and existing bike lanes are integral to the bikeway system. Of special importance is the emergence of the Outer Loop, combining facilities along Mormon Trek Boulevard, McCollister Boulevard, and Scott Boulevard to provide a multi-modal peripheral route. “Found” but underused features such as the Longfellow Tunnel, the Ridgewood alley, and short existing walkway links can also be very useful.

**Fill Gaps.** In many cases, the most important parts of a network are small projects that complete connections. These short links can knit street or trail segments together into longer routes or provide access to important destinations. These gaps may include a short trail segment that connects two continuous streets together, or an intersection improvement that bridges a barrier. The development of the overall network is strategic, using manageable initiatives to create a comprehensive system.

**Low-Stress Facilities.** The Iowa City Bikeways Survey showed that much of the city’s potential urban cycling market is comfortable in on-street situations, but understandably prefers separation from moving motor vehicles, through physical buffers or using quiet streets or corridors separated from heavy traffic. For example, bicycle boulevards—lower volume streets that parallel major arterials—satisfy the comfort requirement successfully. However, some important destinations, including major employers and shopping facilities are served by major arterials. Here, Iowa City policy incorporates bicycle and pedestrian accommodations in new major street projects. Along Mormon Trek Boulevard, First Avenue, and Clinton Street, the City is also implementing road diet programs that both accommodate bike traffic and manage traffic

speeds. Many of these complete street treatments provide users with the choice of on- and off-street facilities within the same corridor. This provides choices to cyclists with different capabilities and levels of comfort with on-street riding.

**Regional Connectivity.** The Iowa City network must also connect to regional facilities, including trail and on-street routes in Coralville, North Liberty, University Heights, Tiffin, and rural Johnson County.

## Network Structure

Map 19 illustrates the proposed functional bicycle network for Iowa City, consistent with information gathered through the citizen engagement process, analysis of existing conditions and demands, and the guidelines and criteria described previously in this chapter. The functional network map displays the ultimate build-out by component type. Maps 20 through 23 display this functional network in greater detail. The components of the system include the facilities details below.

## On-Street Facilities

### Principal Bikeways

These corridors are the spines of the system, and are generally oriented in ordinal east-west and north-south directions. They often follow arterial and collector corridors and have good crosstown continuity. They form the bike “arterials” that lead to the core destinations and many other key locations around the city and have the capability of connecting to on- and off-street systems in other metropolitan area communities. The principal bikeways also direct users to crossings of major potential barriers: the Iowa River, Highways 1 and 6, and other major arterial intersections.

Infrastructure for these routes typically use more separated types of bicycle facilities, including existing and proposed bike lanes, buffered bike lanes, cycle tracks, enhanced sidepaths, and short segments of multi-use trail. However, in some cases, they may include segments of relatively low-volume local streets. These facility types are described



# Functional Bikeway Network

## Legend

### On-Street Bikeways

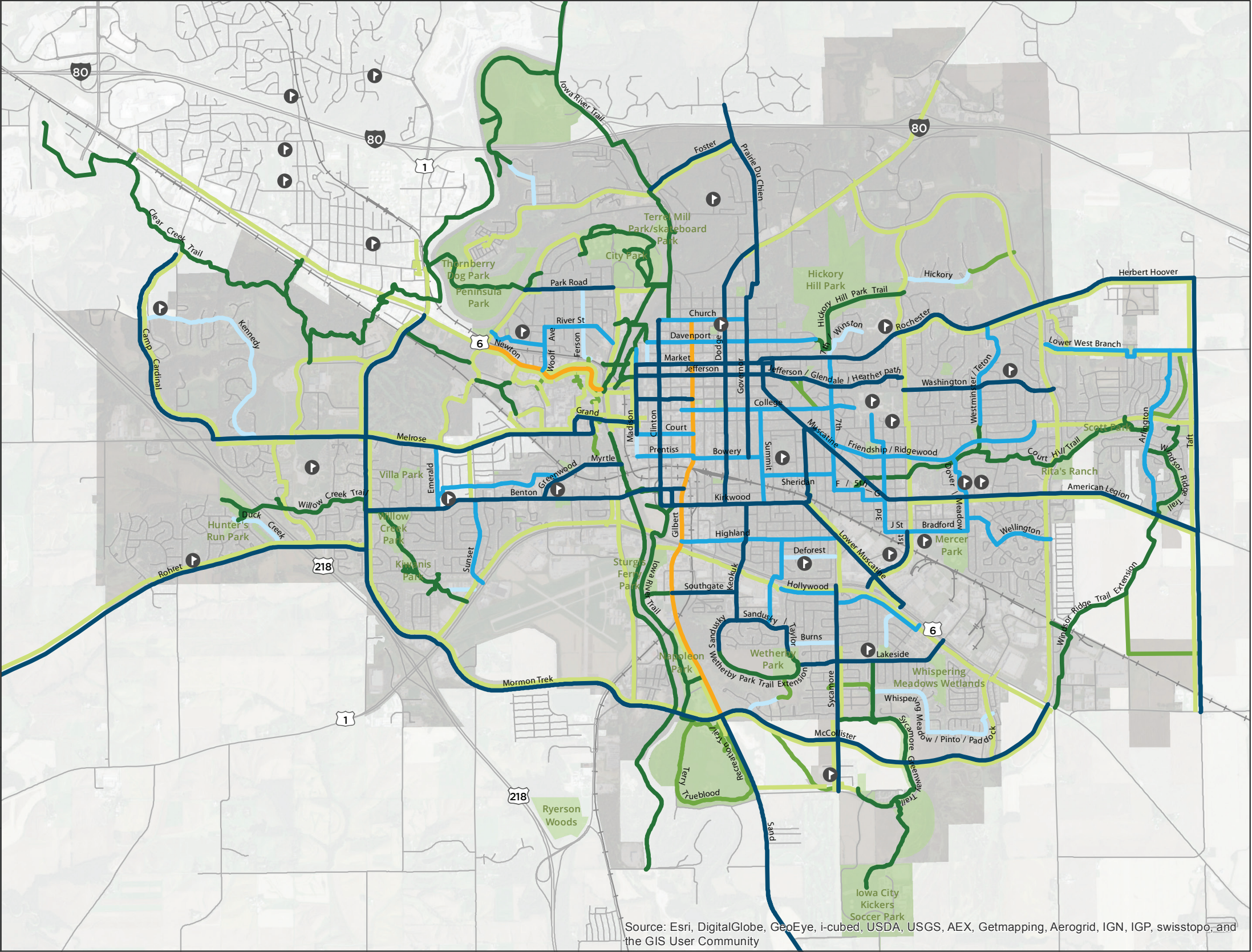
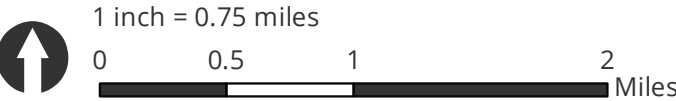
- Principal Bikeway
- Secondary Bikeway
- Neighborhood Connector
- Under Study/Further Study Needed

### Off-Street Bikeways

- Principal Multi-Use Trail
- Secondary Multi-Use Trail
- Sidepath

The Functional Bikeways Network Map illustrates the complete future network of on-street and off-street bikeways as envisioned in this plan. This bikeway network provides Iowa City residents and visitors with a comprehensive, interconnected, and all-ages system for bicycle transportation and recreation.

The on-street and off-street bikeways complement each other by expanding network coverage, increasing access to destinations not served by off-street paths, and offering dual facilities along many arterial and collector roadways in order to provide a safe and enjoyable travel for a diverse range of skill, experience, and comfort levels.



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 19. Functional Bicycle Network



# Functional Bikeway Network

## Legend

### On-Street Bikeways

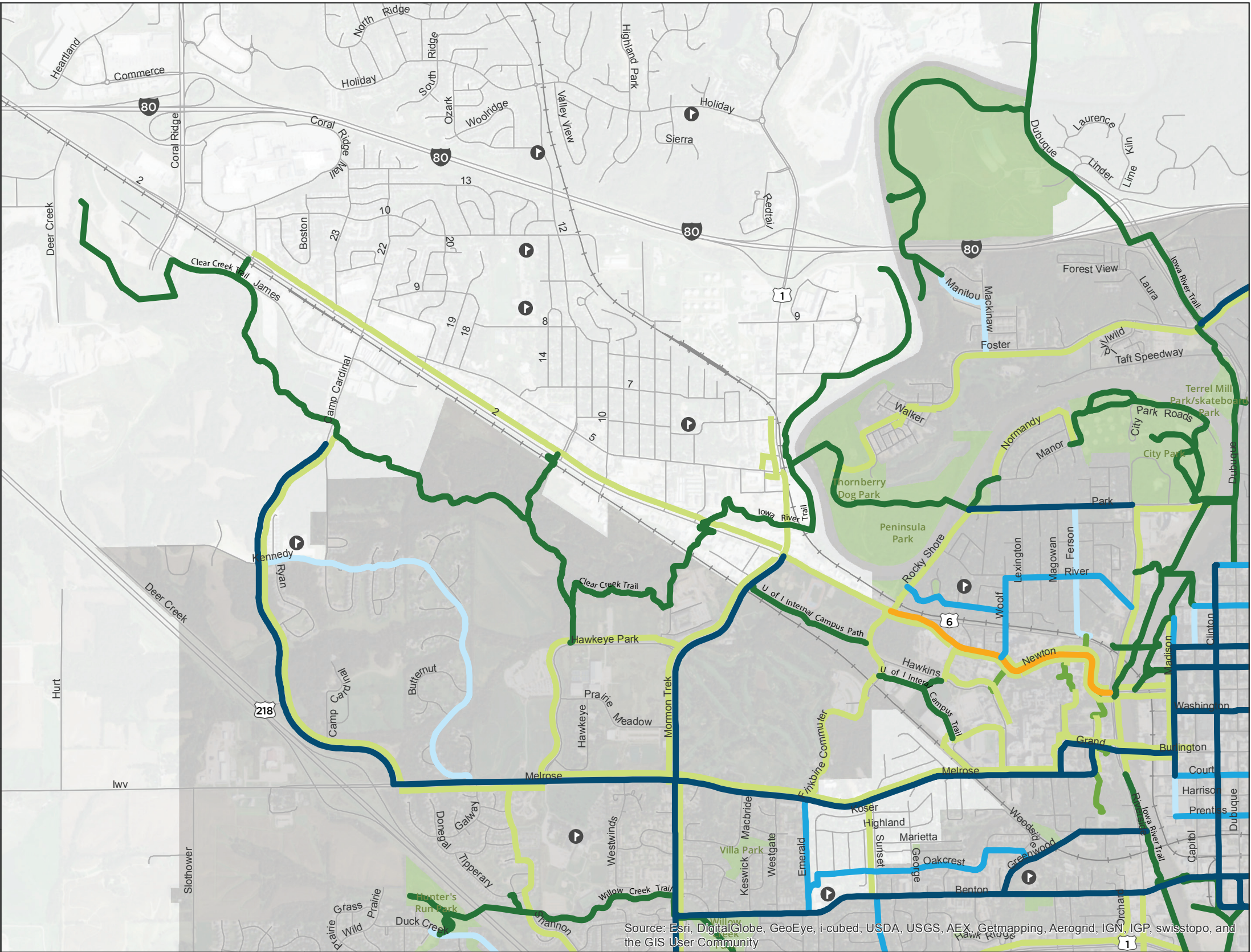
- Principal Bikeway
- Secondary Bikeway
- Neighborhood Connector
- Under Study/Further Study Needed

### Off-Street Bikeways

- Principal Multi-Use Trail
- Secondary Multi-Use Trail
- Sidepath

The Functional Bikeways Network Map illustrates the complete future network of on-street and off-street bikeways as envisioned in this plan. This bikeway network provides Iowa City residents and visitors with a comprehensive, interconnected, and all-ages system for bicycle transportation and recreation.

The on-street and off-street bikeways complement each other by expanding network coverage, increasing access to destinations not served by off-street paths, and offering dual facilities along many arterial and collector roadways in order to provide a safe and enjoyable travel for a diverse range of skill, experience, and comfort levels.



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 20. Functional Bicycle Network: Northwest Quadrant



# Functional Bikeway Network

## Legend

### On-Street Bikeways

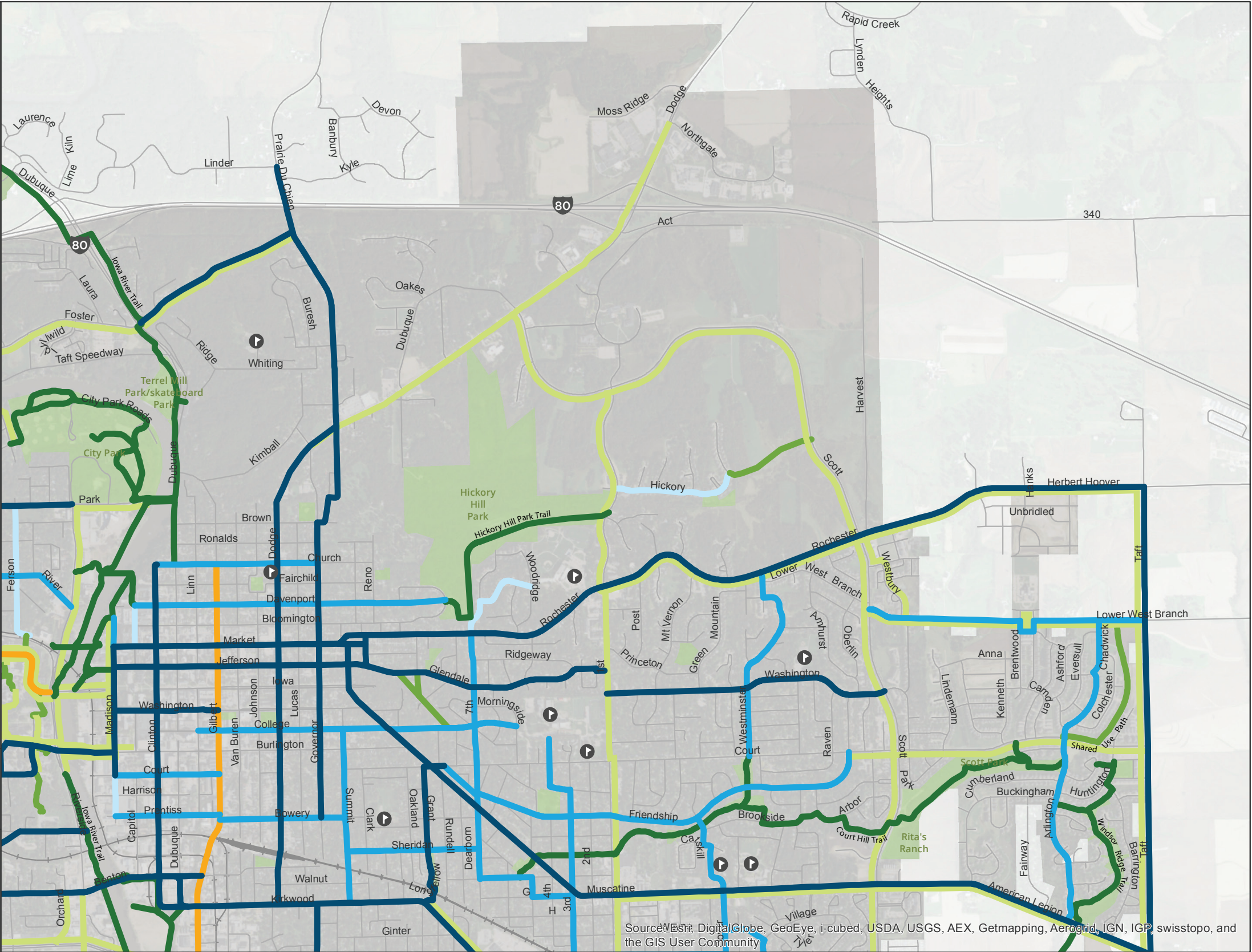
- Principal Bikeway
- Secondary Bikeway
- Neighborhood Connector
- Under Study/Further Study Needed

### Off-Street Bikeways

- Principal Multi-Use Trail
- Secondary Multi-Use Trail
- Sidepath

The Functional Bikeways Network Map illustrates the complete future network of on-street and off-street bikeways as envisioned in this plan. This bikeway network provides Iowa City residents and visitors with a comprehensive, interconnected, and all-ages system for bicycle transportation and recreation.

The on-street and off-street bikeways complement each other by expanding network coverage, increasing access to destinations not served by off-street paths, and offering dual facilities along many arterial and collector roadways in order to provide a safe and enjoyable travel for a diverse range of skill, experience, and comfort levels.



Source: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 21. Functional Bicycle Network: Northeast Quadrant



# Functional Bikeway Network

## Legend

### On-Street Bikeways

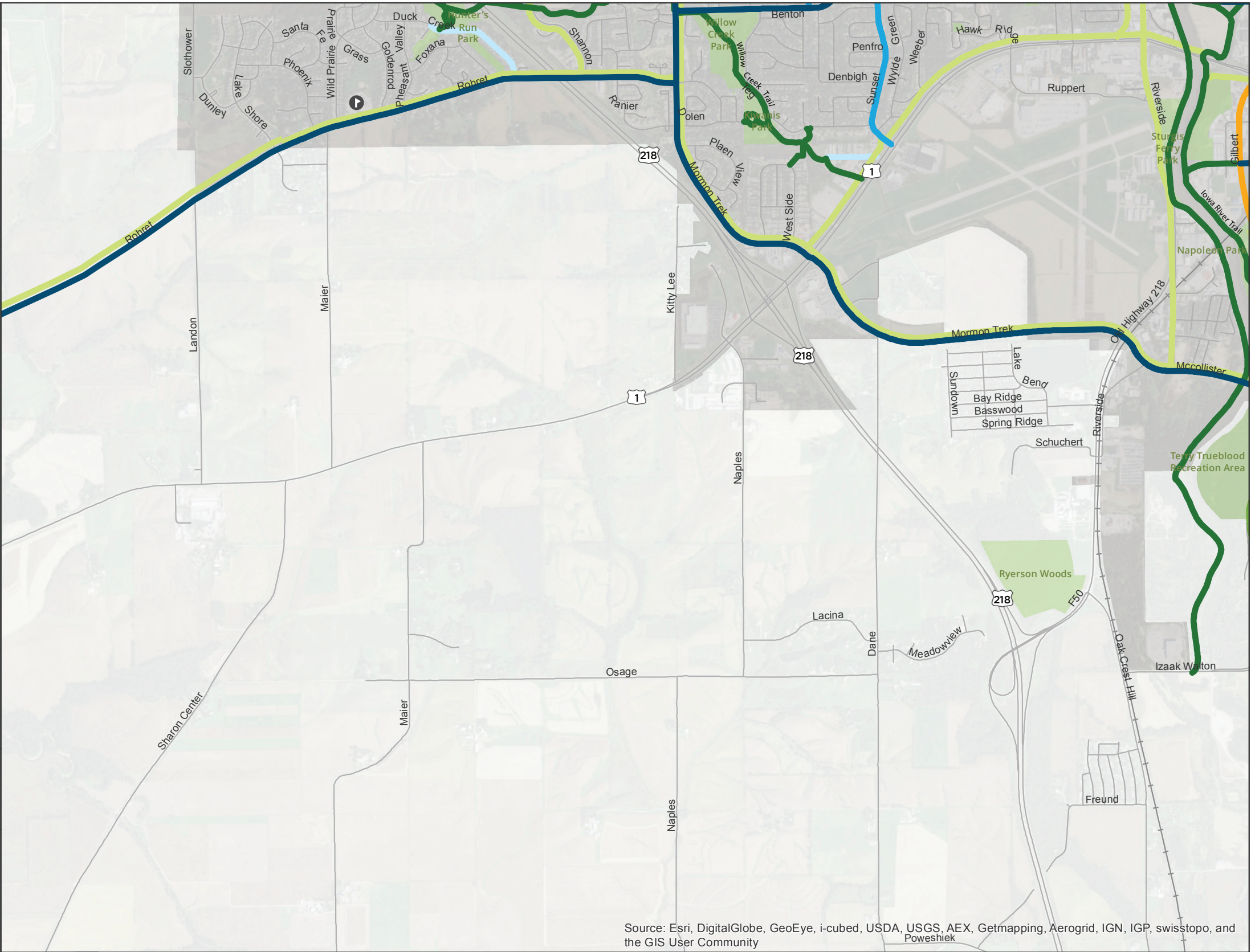
- Principal Bikeway
- Secondary Bikeway
- Neighborhood Connector
- Under Study/Further Study Needed

### Off-Street Bikeways

- Principal Multi-Use Trail
- Secondary Multi-Use Trail
- Sidepath

The Functional Bikeways Network Map illustrates the complete future network of on-street and off-street bikeways as envisioned in this plan. This bikeway network provides Iowa City residents and visitors with a comprehensive, interconnected, and all-ages system for bicycle transportation and recreation.

The on-street and off-street bikeways complement each other by expanding network coverage, increasing access to destinations not served by off-street paths, and offering dual facilities along many arterial and collector roadways in order to provide a safe and enjoyable travel for a diverse range of skill, experience, and comfort levels.



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 22. Functional Bicycle Network: Southwest Quadrant



# Functional Bikeway Network

## Legend

### On-Street Bikeways

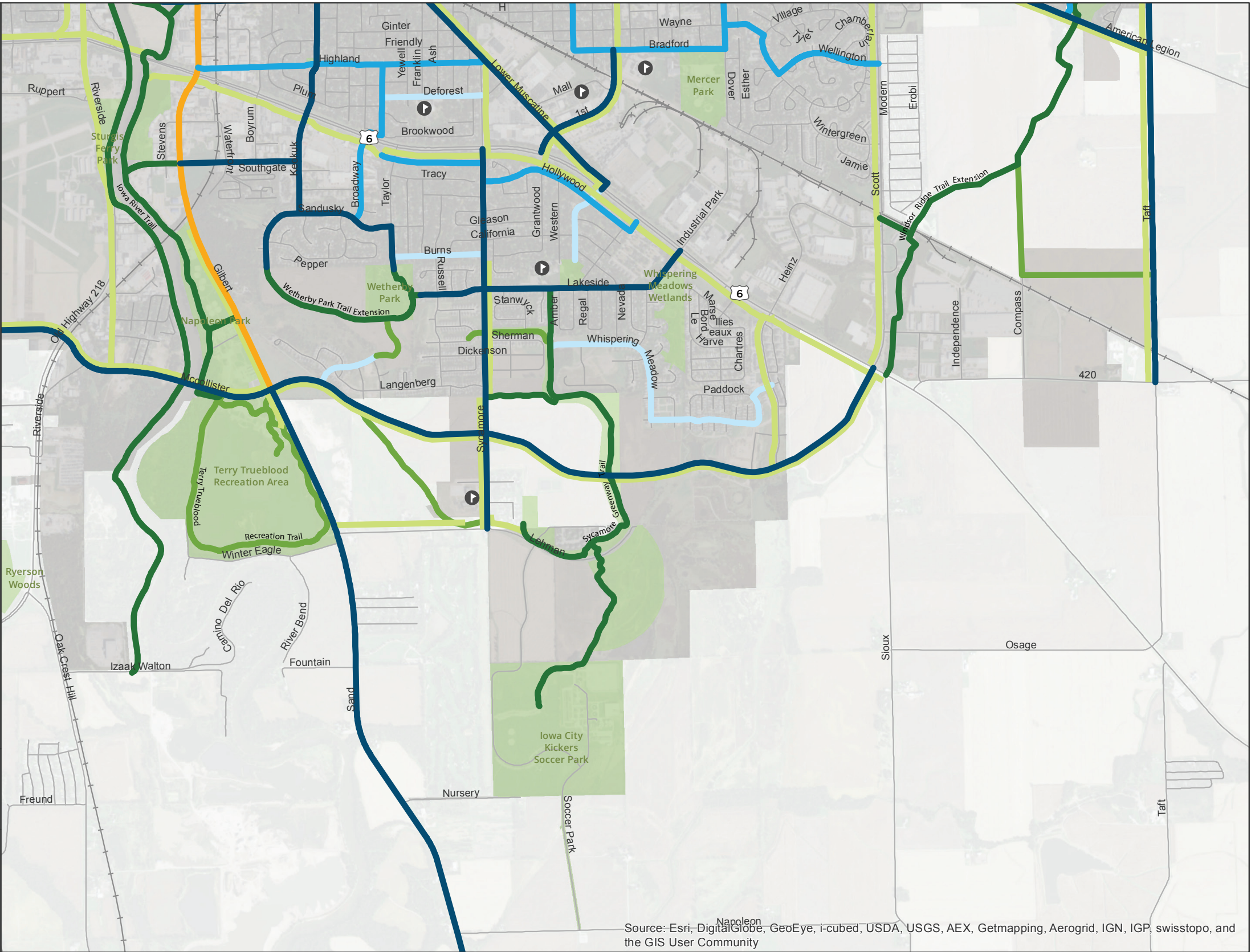
- Principal Bikeway
- Secondary Bikeway
- Neighborhood Connector
- Under Study/Further Study Needed

### Off-Street Bikeways

- Principal Multi-Use Trail
- Secondary Multi-Use Trail
- Sidepath

The Functional Bikeways Network Map illustrates the complete future network of on-street and off-street bikeways as envisioned in this plan. This bikeway network provides Iowa City residents and visitors with a comprehensive, interconnected, and all-ages system for bicycle transportation and recreation.

The on-street and off-street bikeways complement each other by expanding network coverage, increasing access to destinations not served by off-street paths, and offering dual facilities along many arterial and collector roadways in order to provide a safe and enjoyable travel for a diverse range of skill, experience, and comfort levels.



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 23. Functional Bicycle Network: Southeast Quadrant

below in the recommended bicycle facilities section of this memorandum.

### **Secondary Bikeways**

Secondary bikeways are the primary routes for local bicycle travel around town, and serve most of the city's key destinations and attractions. They are typically local or collector streets with relatively low volumes that have good continuity and in many cases parallel higher order streets. In some cases, secondary bikeways are long segments of single streets; in others, they are logical assemblages of local streets to create an easy-to-follow, continuous route. These facilities are more comfortable for many cyclists than the busy corridors they parallel.

Common infrastructure types for secondary bikeways can include bicycle boulevards, signed and marked routes, short segments of multi-use trails that connect on-street bikeways or provide segment connecting to an important destination like a park or school. In some cases, secondary bikeways on wider streets can also take the form of bike lanes, which can have a calming effect on motor vehicle traffic and create an environment supportive of bicycle travel by people with less comfort or experience bicycling in traffic.

### **Neighborhood Connectors**

These are short, primarily on-street routes, usually on low-volume local streets, that connect through routes with neighborhoods and local destinations like parks and schools. In some cases, they provide important connections between higher-order components, but are too short to function as bicycle boulevards. Most require minimal infrastructure investment beyond wayfinding signage.

### **Off-Street Corridors**

#### **Principal Multi-Use Trails**

These major off-street trails are the strength of Iowa City's current active transportation network. They are long-distance facilities located on their own rights-of-way and corridors, primarily the Iowa River and area creeks or on defined corridors within the

campus environs or developments. Major existing principal trails include the Iowa River, Clear Creek, and Court Hill Trails and the Sycamore Greenway. New principal trails include future corridors that should be phased with adjacent development and short but critical links to increase connections. Because of their length and strategic locations, these trails serve both transportation and recreation functions.

#### **Connector and Park Trails Multi-Use Trails**

These multi-use trails are usually internal to neighborhoods and new developments or make short connections from neighborhoods or principal trails to specific destinations. They also include trails that are internal to parks.

#### **Sidepaths (or widened sidewalks)**

These are wide paths, typically built to trail standards, located within a street right-of-way but fully separated by curbs from travel lanes. They provide a level of separation from traffic that many users find comfortable, but require a great deal of design attention when they intersect driveways and streets because of potential traffic conflicts. They are a very important part of Iowa City's network, and city policy includes sidepaths in all major arterial roadway projects.

Sidepaths work best along streets with controlled access and relatively few driveway interruptions. Some corridors offer both a sidepath and on-street bike lanes, providing users with a choice of facilities.

### **Recommended Bicycle Facilities**

As described above, bicycle facilities vary greatly in character, context, and intended user. These facility types are based on national standards and best practices in bikeway design using state-of-the-art resources like the AASHTO Guide for the Development of Bicycle Facilities, the NACTO Urban Bikeway Design Guide, and the FHWA Small Town and Rural Multimodal Networks Guide.



Transitioning from the conceptual level map to more detailed infrastructure recommendations, Map 24 displays the proposed bicycle network by individual facility type. Maps 25 through 28 display the same content at a greater level of detail for each quadrant of the city. It is important to note that some recommended bicycle facilities shown on this map replace existing bicycle facilities, and that those existing bicycle facilities are not shown to increase map legi-

**Table 4. Mileage by Bicycle Facility**

Facility Type	Recommended Miles
<b>On-Street Facilities</b>	<b>72.5</b>
Bike Lanes (including climbing lanes)	29.7
Buffered Bike Lanes	4.0
Protected Bike Lanes/Cycle Tracks	3.0
Bicycle Boulevards	22.7
Marked and Signed Routes	9.5
Corridor Study	3.5
<b>Off-Street Facilities</b>	<b>28.04</b>
Multi-Use Trail/Shared-Use Path	10.6
Sidewalk (Wide Sidewalk)	17.8
<b>Total</b>	<b>100.9</b>

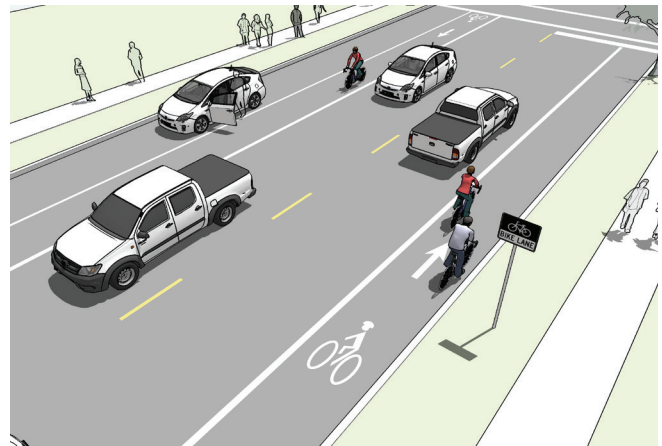
bility. An example of this is the recommendation for buffered bike lanes on Jefferson and Market that will replace the existing left-side bike lanes. Table 1 lists recommended bicycle network mileage by facility type, each of which are described below.

## On-Street Facilities

### Conventional Bike Lanes

Conventional bike lanes, or simply bike lanes, designate an exclusive space for bicyclists with pavement markings and signage. The bicycle lane is located adjacent to motor vehicle travel lanes, and bicyclists ride in the same direction as motor vehicle traffic. Bicycle lanes vary in width, but are typically five to

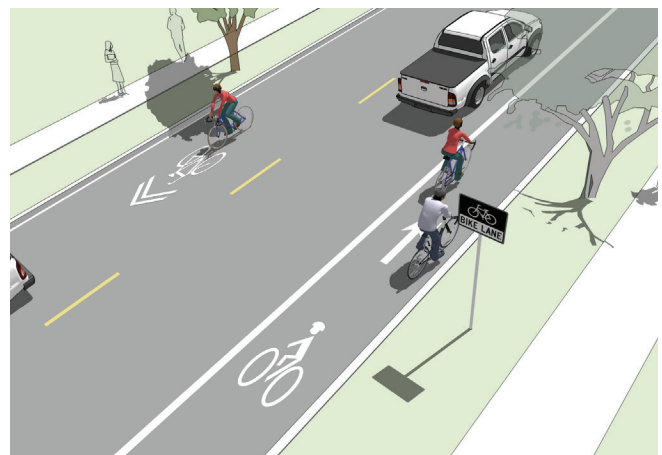
six feet. Most bike lanes are on the right side of the street (on a two-way street), between the adjacent travel lane and curb, road edge or parking lane. Some bike lanes are located on the left side of the street, particularly on one-way streets.



While bicycle lanes can be added to new arterial and collector streets as they are built, bike lanes can also be added to existing roadways through a number of modifications, including reallocation of excess width, lane narrowing, 4-lane to 3-lane road diets, modifications to parking, and roadway widening.

### Climbing Lane

Climbing lanes (also known as “uphill bike lanes”) enable motorists to safely pass slower-speed bicyclists by providing a bicycle lane in the uphill direction of travel, and shared lane markings in the downhill direction, thereby improving conditions for both travel modes. This treatment is typically found





# Bicycle Network With Proposed Facility Types

## Legend

### On-Street Bicycle Facilities

Existing	Proposed
	Bike Lanes/Wide Shoulders
	Climbing Lane/Uphill Bike Lane
	Buffered Bike Lanes
	Protected Bike Lanes/Cycle Tracks
	Bicycle Boulevards
	Marked and Signed Routes
	Corridor Study

### Off-Street Bicycle Facilities

Existing	Proposed
	Multi-Use Trails/Shared-Use Paths
	Sidepaths

### Project Actions for Dedicated On-Street Facilities

	Bike Lanes with Road Diet
	Bike Lanes with Lane Diet/Narrowing
	Bike Lanes with New Construction/Reconstruction
	Bike Lanes with New Striping and Markings Only
	Buffered Bike Lanes with New Striping and Markings Only
	Buffered Bike Lanes with Road Diet
	Climbing Lane/Uphill Bike Lane with Lane Diet/Narrowing
	Protected Bike Lane/Cycle Track with New Construction/Reconstruction



1 inch = 0.75 miles

0 0.5 1 2 Miles



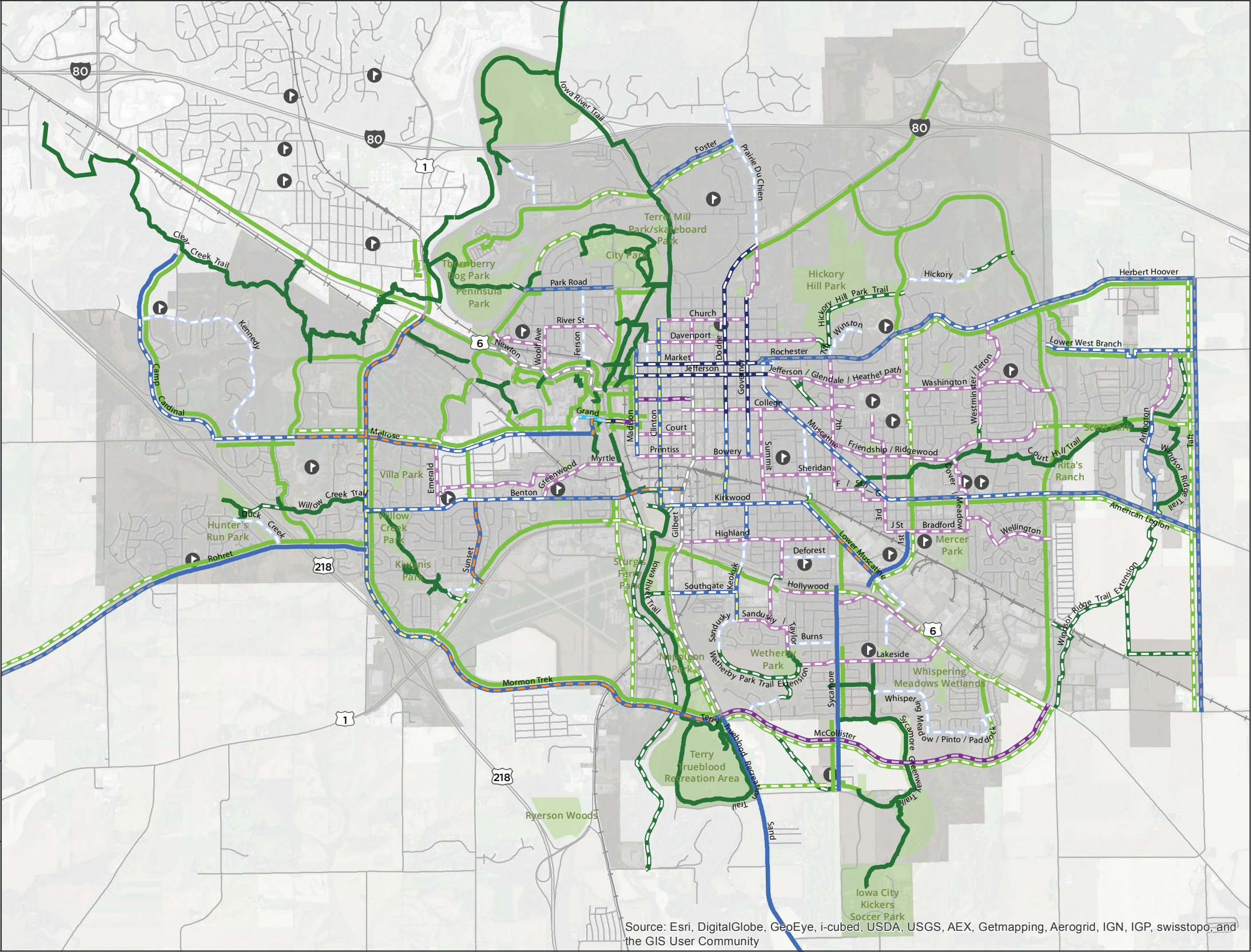
CITY OF IOWA CITY



PLANNING + DESIGN



PLANNING + DESIGN
















Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 24. Bicycle Network with Proposed Facility Types







## Legend









### On-Street Bicycle Facilities


Existing	Proposed
	 Bike Lanes/Wide Shoulders
	 Climbing Lane/Uphill Bike Lane
	 Buffered Bike Lanes
	 Protected Bike Lanes/Cycle Tracks
	 Bicycle Boulevards
	 Marked and Signed Routes
	 Corridor Study


### Off-Street Bicycle Facilities


Existing	Proposed
	 Multi-Use Trails/Shared-Use Paths
	 Sidepaths

### Project Actions for Dedicated On-Street Facilities


	Bike Lanes with Road Diet
	Bike Lanes with Lane Diet/Narrowing
	Bike Lanes with New Construction/Reconstruction
	Bike Lanes with New Striping and Markings Only
	Buffered Bike Lanes with New Striping and Markings Only
	Buffered Bike Lanes with Road Diet
	Climbing Lane/Uphill Bike Lane with Lane Diet/Narrowing
	Protected Bike Lane/Cycle Track with New Construction/Reconstruction


0      0.25      0.5      1
Mile

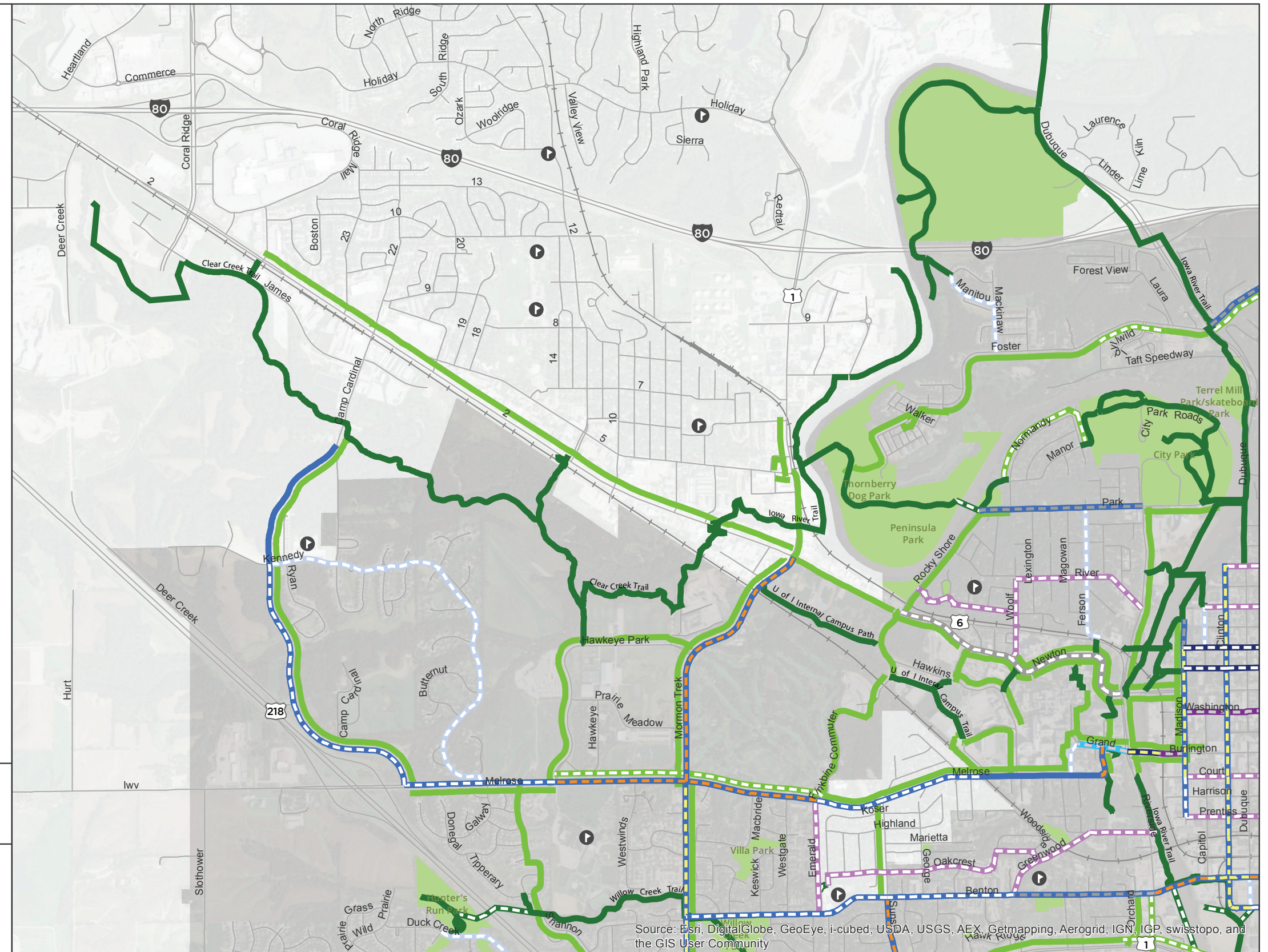




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RECOMMENDATIONS 80



# Bicycle Network With Proposed Facility Types

## Legend

### On-Street Bicycle Facilities

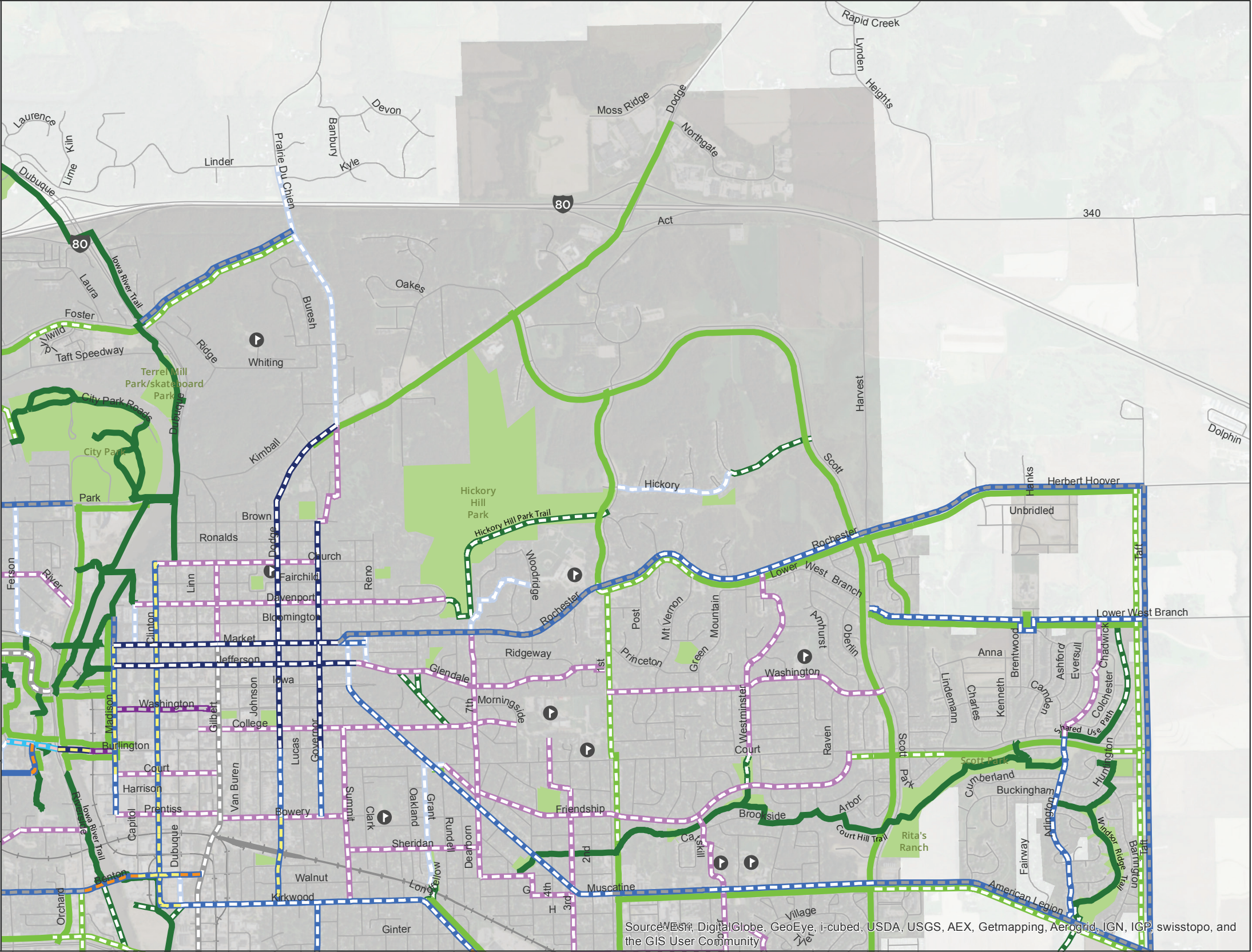
Existing	Proposed
	Bike Lanes/Wide Shoulders
	Climbing Lane/Uphill Bike Lane
	Buffered Bike Lanes
	Protected Bike Lanes/Cycle Tracks
	Bicycle Boulevards
	Marked and Signed Routes
	Corridor Study

### Off-Street Bicycle Facilities

Existing	Proposed
	Multi-Use Trails/Shared-Use Paths
	Sidepaths

### Project Actions for Dedicated On-Street Facilities

	Bike Lanes with Road Diet
	Bike Lanes with Lane Diet/Narrowing
	Bike Lanes with New Construction/Reconstruction
	Bike Lanes with New Striping and Markings Only
	Buffered Bike Lanes with New Striping and Markings Only
	Buffered Bike Lanes with Road Diet
	Climbing Lane/Uphill Bike Lane with Lane Diet/Narrowing
	Protected Bike Lane/Cycle Track with New Construction/Reconstruction



Source: ESRI, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 26. Bicycle Network with Proposed Facility Types: Northeast Quadrant



# Bicycle Network With Proposed Facility Types

## Legend

### On-Street Bicycle Facilities

Existing	Proposed
	Bike Lanes/Wide Shoulders
	Climbing Lane/Uphill Bike Lane
	Buffered Bike Lanes
	Protected Bike Lanes/Cycle Tracks
	Bicycle Boulevards
	Marked and Signed Routes
	Corridor Study

### Off-Street Bicycle Facilities

Existing	Proposed
	Multi-Use Trails/Shared-Use Paths
	Sidepaths

### Project Actions for Dedicated On-Street Facilities

	Bike Lanes with Road Diet
	Bike Lanes with Lane Diet/Narrowing
	Bike Lanes with New Construction/Reconstruction
	Bike Lanes with New Striping and Markings Only
	Buffered Bike Lanes with New Striping and Markings Only
	Buffered Bike Lanes with Road Diet
	Climbing Lane/Uphill Bike Lane with Lane Diet/Narrowing
	Protected Bike Lane/Cycle Track with New Construction/Reconstruction



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 27. Bicycle Network with Proposed Facility Types: Southwest Quadrant



# Bicycle Network With Proposed Facility Types

## Legend

### On-Street Bicycle Facilities

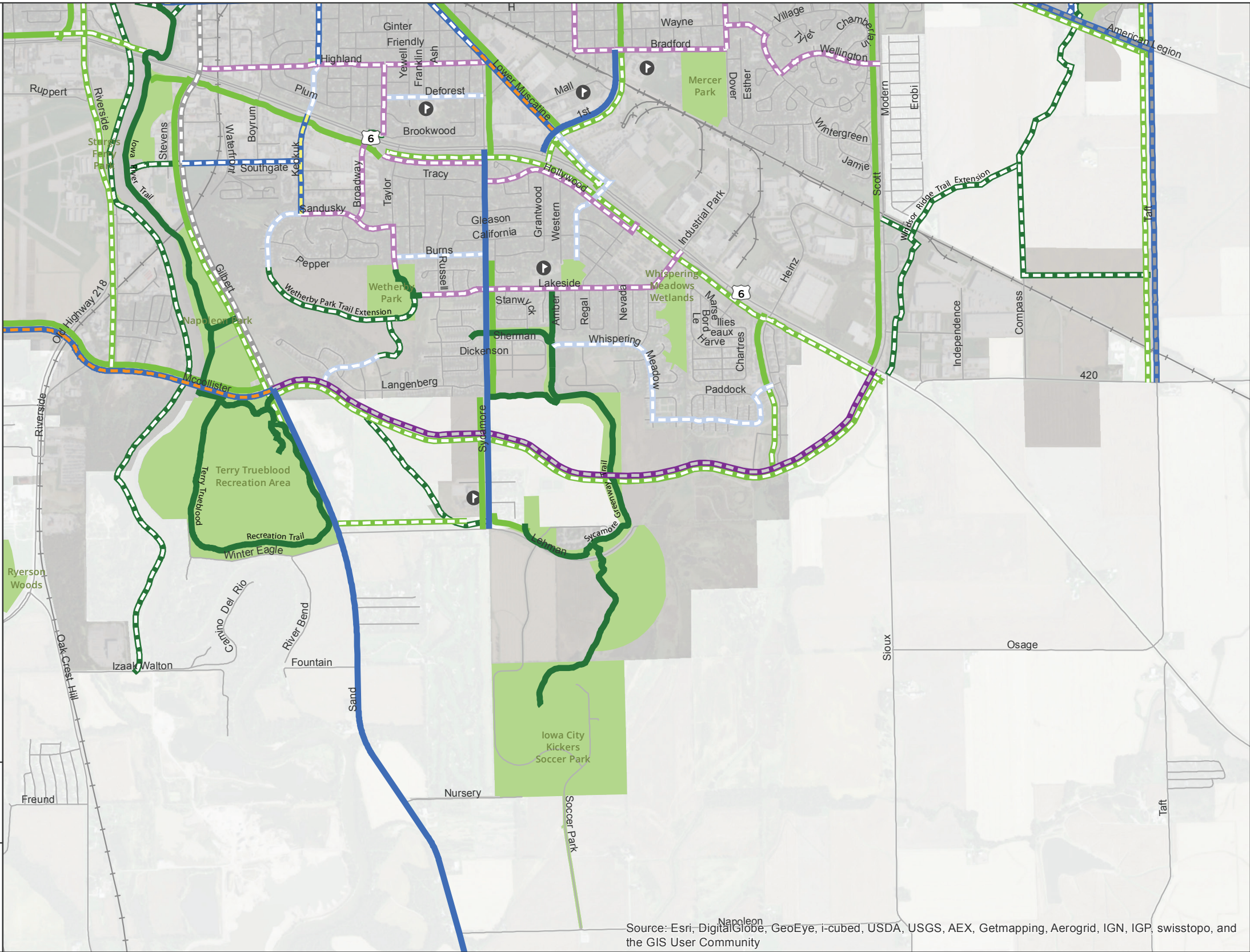
Existing	Proposed
	Bike Lanes/Wide Shoulders
	Climbing Lane/Uphill Bike Lane
	Buffered Bike Lanes
	Protected Bike Lanes/Cycle Tracks
	Bicycle Boulevards
	Marked and Signed Routes
	Corridor Study

### Off-Street Bicycle Facilities

Existing	Proposed
	Multi-Use Trails/Shared-Use Paths
	Sidepaths

### Project Actions for Dedicated On-Street Facilities

	Bike Lanes with Road Diet
	Bike Lanes with Lane Diet/Narrowing
	Bike Lanes with New Construction/Reconstruction
	Bike Lanes with New Striping and Markings Only
	Buffered Bike Lanes with New Striping and Markings Only
	Buffered Bike Lanes with Road Diet
	Climbing Lane/Uphill Bike Lane with Lane Diet/Narrowing
	Protected Bike Lane/Cycle Track with New Construction/Reconstruction



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

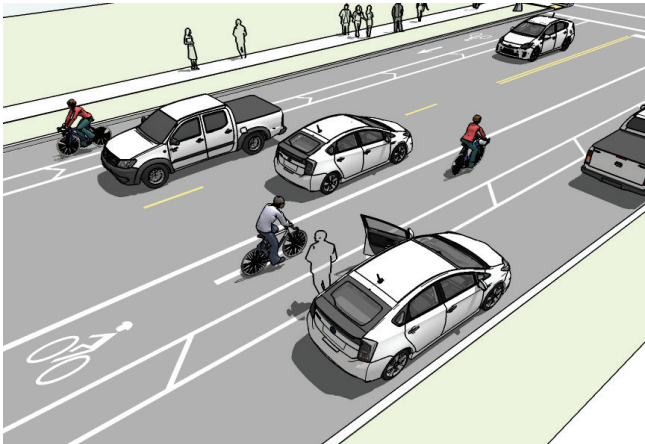
Map 28. Bicycle Network with Proposed Facility Types: Southeast Quadrant



on retrofit projects as newly constructed roads should provide adequate space for bicycle lanes in both directions of travel. Accommodating an uphill bicycle lane often includes delineating on-street parking (if provided), narrowing travel lanes and/or shifting the centerline if necessary.

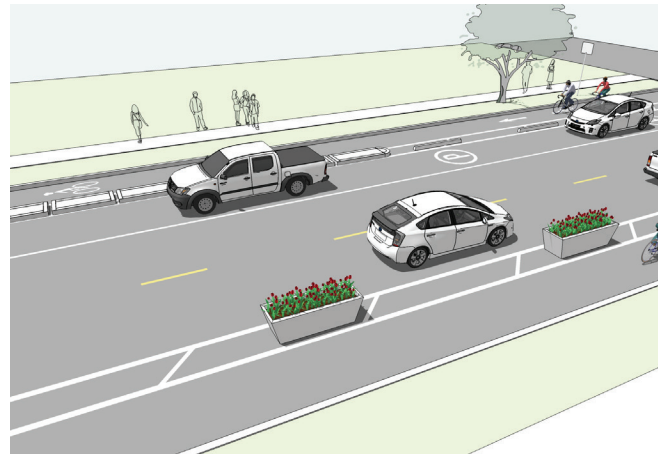
### Buffered Bike Lanes

Buffered bike lanes are conventional bicycle lanes paired with a designated buffer space, separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. Buffered bike lanes are designed to increase the space between the bike lane and the travel lane or parked cars. This treatment is appropriate for bike lanes on roadways with high motor vehicle traffic volumes and speed, adjacent to parking lanes, or a high volume of truck or oversized vehicle traffic.



### Protected Bike Lanes/Cycle Tracks

Protected bike lanes, also commonly referred to as separated bike lanes or cycle tracks, are designed for exclusive use by bicyclists and are located within or directly adjacent to the street and is physically separated from motor vehicle traffic by parking and/or a three-dimensional element. Protected bike lanes have different forms but all share common elements—they provide space that is intended to be exclusively or primarily used by bicycles, and are separated from motor vehicle travel lanes, parking lanes, and sidewalks. In situations where on-street parking is allowed, protected bike lanes are located to the curb-side of the parking (in contrast to conventional bike lanes).



Cycle tracks may be one-way or two-way, and may

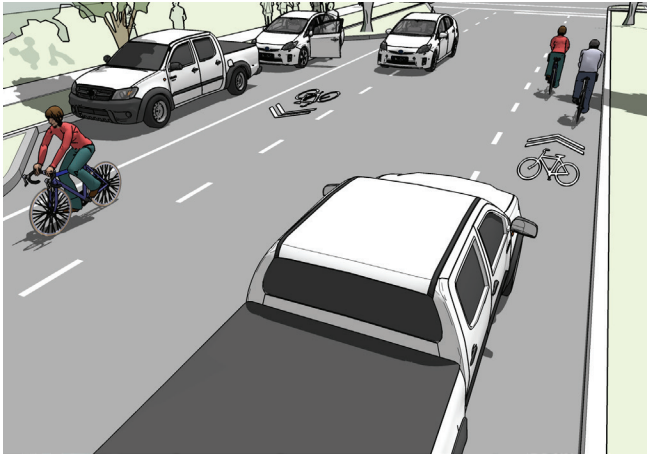


be at street level, sidewalk level or at an intermediate level. If at sidewalk level, a curb or median separates them from motor traffic, while different pavement color/texture separates the cycle track from the sidewalk. If at street level, they can be separated from motor traffic by raised medians, on-street parking or bollards.

### Advisory Bike Lanes

Advisory bike lanes provide a unique design option for low-volume streets that lack the width necessary to install conventional bike lanes, but require a greater treatment than shared lane markings or signage. Advisory bike lanes are bicycle priority areas delineated by dotted white lines. The automobile zone should be configured narrowly enough so that two cars cannot pass each other in both directions without crossing the advisory lane line.

Motorists may enter the bicycle zone when no bicycles are present. Motorists must overtake with caution due to potential oncoming traffic. This treatment is not currently present in any state or federal design standards though it is being implemented in the US and is common in many European countries.



While not recommended in this plan, the design option has been considered during this planning process and may be viable option for project development moving forward.

### Bicycle Boulevards

Bicycle boulevards are a special class of shared roadways designed for a broad spectrum of bicyclists. They are low-volume local streets where motorists and bicyclists share the same travel lane. Treatments for bicycle boulevards are selected as necessary to create appropriate automobile



volumes and speeds, and to provide safe crossing opportunities of busy streets. Bicycle boulevards incorporate treatments such as signage, pavement markings, traffic calming and/or traffic reduction, and intersection modifications to support through movements of bicyclists while discouraging similar through-trips by non-local motorized traffic. The



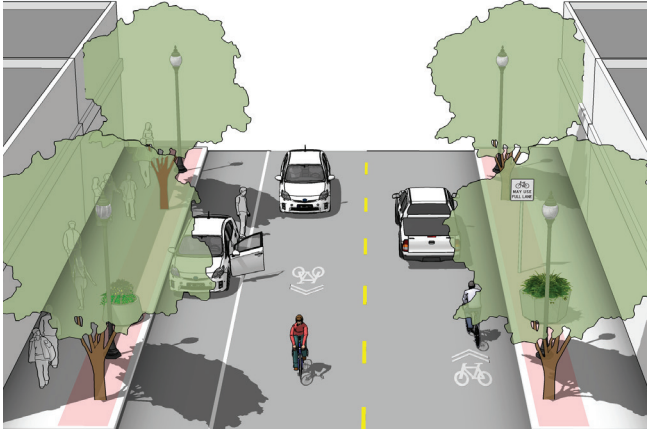
appropriate level of treatment to apply is dependent on roadway conditions, particularly motor vehicle speeds and volumes, and on community-based support and design processes.

### Marked and Signed Routes

A marked and signed shared roadway is a general purpose travel lane marked with shared lane markings ("sharrows") and signed with Bikes May Use Full Lane and/or wayfinding signs to encourage bicycle travel and proper positioning within the lane. In constrained conditions, the shared lane markings are placed in the middle of the lane to discourage unsafe passing by motor vehicles. On a wide outside lane, the shared lane markings can be used to promote bicycle travel to the right of motor vehicles. In all conditions, shared lane markings should be placed outside of the door zone of parked cars. Placing shared lane markings between vehicle tire tracks will increase the life of the markings and minimize the long-term cost of the treatment. The marked and shared routes are most applicable on low-volume, low-speed roadways linking



destinations and endpoints to principal bikeways, bicycle boulevards, and multi-use trails.



### Corridor Study

Some roadways identified for bikeway development have been designated as corridors for future study, a reflection of geometric, operational, or jurisdictional challenges inherent along the roadway. Gilbert Street is currently under study to examine the safety and operational performance of road diet, and Newton Road is identified for future study to develop bikeway treatments that meet the safety and internal circulation needs of the University of Iowa while also addressing city-wide network considerations.

### Off-Street Facilities

#### Shared-Use Paths/Multi-Use Trails

These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles. Eight feet is the minimum allowed for a shared-use path and is only recommended in low traffic or physically constrained situations. Ten feet is recommended in most situations and is adequate for moderate to heavy use. Twelve feet is recommended for heavy use situations with high concentrations of multiple users such as runners, bicyclists, rollerbladers and pedestrians. A separate track (5' minimum) can be provided for pedestrian use.



### Sidepaths

Sidepaths (also referred to as wide or widened sidewalks) are located adjacent to a roadway and provide for two-way, off-street bicycle use. Sidepaths may also be used by pedestrians, skaters, wheelchair users, runners and other non-motorized users. These facilities are frequently found in parks, along rivers, beaches, and in greenbelts or utility corridors where there are few conflicts with motorized vehicles. Eight feet is the minimum allowed for a shared-use path and is only recommended in low traffic or physically constrained situations. Ten feet is recommended in most situations and is adequate for moderate to heavy use. Twelve feet is recommended for heavy use situations with high concentrations of multiple users such as runners, bicyclists, rollerbladers and pedestrians. A separate track (5' minimum) can be provided for pedestrian use.



When designing a bikeway network, the presence of a nearby or parallel path should not be used as a reason to not provide adequate shoulder or bicycle lane width on the roadway, as the on-street bicycle facility is preferred over the sidepath by experienced bicyclists and those who are cycling for transportation purposes.

## Bikeways Network Support Systems

### Bicycle Wayfinding

Landmarks, destinations, neighborhood business districts, natural features and other visual cues help residents and visitors travel through Iowa City. However, many of the recommended bicycle routes utilize less familiar, lower-volume roadways that may not be as familiar to many people, who may typically use an alternate route when traveling by bus or car. The placement of wayfinding signs throughout Iowa City will indicate to bicyclists their direction of travel, the location of popular destinations, and the distance (and travel time by bike) to those destinations. This will in turn increase the comfort, convenience and utility of the bicycle network. Wayfinding signs also provide a branding element to raise the visibility of Iowa City's growing active transportation network.

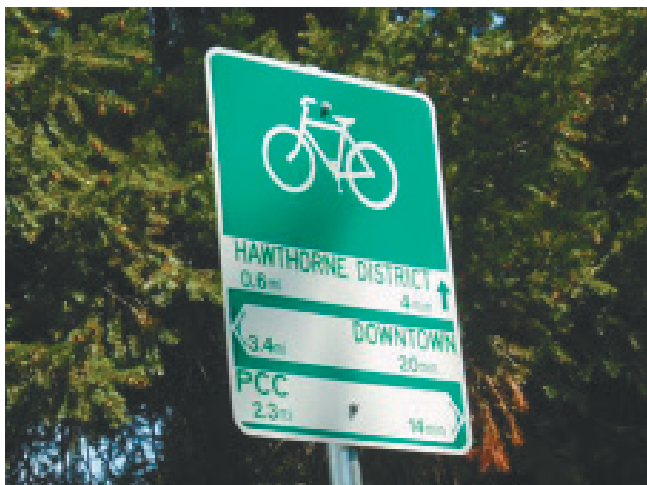


Figure 29. Wayfinding directs users to areas of interest and can alert users to active transportation opportunities.

Signage can serve both wayfinding and safety purposes, including:

- Helping to familiarize users with the bikeway system
- Helping users identify the best routes to destinations
- Helping to address commonly-held perceptions about travel time and distance
- Creating seamless transitions between on-street and off-street bikeways
- Helping overcome a “barrier to entry” for people who do not bicycle often and who fear becoming lost
- Alerting motorists that they are driving along a bicycle route and should use caution

Signs are typically placed at key locations leading to and along bicycle routes, including the intersection of multiple routes. Iowa City should develop a community-wide Bicycle Wayfinding Signage Plan that identifies:

- Sign locations along existing and planned bicycle routes
- Sign type—what information should be included and what is the sign design
- Destinations to be highlighted on each sign—key destinations for bicyclists
- Approximate distance and riding time to each destination

General cost estimates for wayfinding signage range from standard Manual of Uniform Traffic Control Devices (MUTCD) signage to customized signage with branded elements and posts. Costs of wayfinding signage will depend on the type of signing and materials chosen for fabrication of the signs.



### End-of-Trip Facilities

End-of-trip facilities are an integral component of a successful, functional bicycle network. Without secure, accessible, and convenient bicycle parking, people are less likely to choose to ride a bicycle. Iowa City and community partners like the University of Iowa should continue to increase bicycle parking supply with secure, attractive, and highly visible bicycle parking facilities, including short-term bicycle parking solutions like racks and corrals, and long-term solutions like lockers and secure parking areas. Providing context-appropriate facilities to enhance Iowa City’s bike network could be as simple as providing short-term bicycle parking outside popular destinations and secure bicycle parking at transit stops. Policies requiring secure long-term bicycle parking in new residential and commercial buildings, or the retrofit of older buildings

with secure bicycle parking and shower/changing rooms in large employment centers, will make it easier to make bicycling a habit for future building users. Recognizing that the plan focuses on people of all ages and abilities, bicycle parking should be designed to accommodate a wide variety of bicycle types. Table 5 shows the general characteristics of short- and long-term bicycle parking.

### Bicycle Transit Integration

When designed properly, transit and bicycle facilities can have mutually beneficial impacts. Transit stops with good access and secure parking for bicyclists can support multi-modal trips, increase bus ridership, and extend bicyclists’ trip distance to reach areas previously inaccessible by bicycle travel alone. Typical integration design elements include improvements to transit stops and transit centers,

**Table 5. Characteristics of Short- and Long-Term Bicycle Parking**

Criteria	Short-Term Bicycle Parking	Long-Term Bicycle Parking
Parking Duration	Less than two hours	More than two hours
Typical Fixture Types	Bicycle racks and on-street corrals	Lockers or secure bicycle parking (racks provided in a secured area)
Weather Protection	Unsheltered or sheltered	Sheltered or enclosed
Security	High reliance on personal locking devices and passive surveillance (e.g., eyes on the street)	Restricted access and/or active supervision Unsupervised: <ul style="list-style-type: none"><li>■ “Individual-secure,” e.g., bicycle lockers</li><li>■ “Shared-secure,” e.g., bicycle room or locked enclosure</li></ul> Supervised: <ul style="list-style-type: none"><li>■ Valet bicycle parking</li><li>■ Video, closed circuit television, or other surveillance</li></ul>
Typical Land Uses	Commercial or retail, medical/ healthcare, parks and recreation areas, community centers, libraries	Multi-family residential, workplace, transit, schools



Figure 30. Secure bike lockers at transit stops let commuters store their bicycles.

on-bus bicycle racks, and roadway improvements that increase safe interactions between buses and bicycles.

## Transit Stop Planning

Determining the appropriate type of bicycling infrastructure for each transit stop is critical to attracting and maintaining transit riders. Recommended provisions at transit stops, which will vary depending on the type and use of stops, include:

- **Trip information:** essential information that should be provided at every stop includes the route number and the stop number. It is preferable to also provide a route map and timetable. Real-time arrival information may be appropriate where there are frequent bus arrivals and multiple lines at a stop and if the required technology is in place (at the new transit center, for instance).
- **Bicycle parking:** In general, minor and local stops can make do with bike racks. As the stop's importance increases, more secure options should be provided.
- **End-of-trip facilities:** major transit hubs and stops may offer end-of-trip facilities beyond parking such as showers, washrooms, clothing lockers, etc.

The Transit Cooperative Research Program report, *Integration of Bicycles and Transit*, recommends that bicycle parking receive priority siting near the bus loading zone. Parking should also be located so that bicyclists do not need to carry bicycles through crowds of travelers. The parking facility should be located in the clear view of the general public, vendors or transit staff as security is a particular concern with bicycle parking.

## Bicycle/Transit Interface

In addition to providing safe routes to get to transit, it is important to minimize potential conflicts between bicyclists and transit vehicles as well as people waiting or boarding transit. Where bicycles and transit share lane space, buses frequently stop to pick up or drop off passengers. This can delay bicyclists or require them to pass the transit vehicle creating a potentially unsafe "leapfrog" scenario. Recommendations for improving bicyclists' safety around buses include:

- Designate dedicated space for bicyclists through use of bike lanes or other pavement markings.
- Provide infrastructure to increase bicyclists' visibility at intersections.
- Educate transit drivers about areas where bicyclists may be present and typical bicycle behavior.

## Bike Share

Iowa City and the University of Iowa are in the process of developing the first phase of a bike share system to support short trips in Downtown and on the university campus. Funding has been secured, and vendor selection and station siting are underway for an anticipated launch in 2018. Success of bike share systems are in large part dependent on bicycle network infrastructure to support their use. Iowa City and the University of Iowa should coordinate station siting and routing between stations with bikeway development in and around campus and Downtown.



## Programs and Policies

Iowa City's status as a BFC is sign of the community's commitment to bicycling and rests as much on local agencies' and organizations' effective programs and policies as it does the growing network of trails and bikeways. To further support Iowa City and its many community partners (identified in greater detail in the Existing Conditions Chapter) in building a culture of bicycling, this plan identifies a range of new policies and programs that build on and diversify current offerings. The programs and policies listed in the table below, and described in greater detail in this chapter, reflect the needs and values

of the community residents and address service gaps identified in the LAB's BFC feedback provided in 2013. Table 6 shows the applicable Six E's of a Bikeable Community for each program, and also identifies if a program addresses a specific recommendation in the LAB's BFC feedback.

With more than twenty specific programmatic and policy recommendations included in this section, it will be essential for the city to coordinate with its many local partners to identify appropriate program sponsors according to mission, capacity, funding, target audience, and other related factors.

**Table 6. Recommended programs and policies**

Recommendation	Education	Encouragement	Enforcement	Engineering	Evaluation and Planning	Equity	BFC Recommendation
Bicycle Coordinator Position	X	X	X	X	X	X	
Standing Bicycle Advisory Committee	X	X	X	X	X	X	X
Annual Implementation Agenda	X	X	X	X	X	X	
Adopt NACTO Bikeway Design Guide				X			X
Zoning Code and Subdivision Regulations Updates				X			X
Complete Streets Implementation Plan	X			X		X	
Youth Bicycle Training Classes	X	X				X	X
Earn-A-Bike Program	X	X				X	
Public Education Campaigns	X	X	X			X	X
Bike Light Campaign	X	X	X			X	
Themed & Targeted Bicycle Rides	X	X				X	X
Create a Commuter Program	X	X				X	

Recommendation	Education	Encouragement	Enforcement	Engineering	Evaluation and Planning	Equity	BFC Recommendation
Bike Mentor Program	X	X				X	
Bike Month/Bike to Work Events	X	X				X	
Targeted Law Enforcement Activities	X		X				X
Speed Message Board Deployment	X		X				
Specialized Bicycle-Focused Training for Law Enforcement Officers	X		X				
Publicize and Enforce “No Bikes on Sidewalks” and Dismount Zones	X		X				
Bicycle Facilities Fact Sheets	X			X			
Project Outreach	X	X	X	X		X	
Pop-Up Demonstration/Pilot Projects	X	X		X		X	
Annual Report Card	X	X	X	X	X	X	X
Expanded Bicycle Count Program					X		
Crash Monitoring and Evaluation				X	X		X
Economic Impact of Bicycling Study	X	X			X		X
Bicycle Master Plan Updates	X	X	X	X	X	X	X
Apply for Gold-Level BFC Status					X		

### Bicycle Coordinator Position

To enhance interdepartmental coordination, support interagency coordination, and streamline communications with community residents, stakeholders, and media, Iowa City should establish a Bicycle Coordinator position responsible for overseeing the city’s diverse range of bicycling activities. This staff person’s job responsibilities may include:

- Monitoring facility planning, design, and construction of bicycle and bicycle-related projects
- Coordinating the implementation of recommended projects and programs in this Plan with city staff and external agencies
- Provide regular updates to the City Council related to bicycle initiatives and projects



- Leading annual evaluation programs like bicycle counts, annual reporting, and crash evaluation
- Identifying new projects and programs to improve the bicycling environment
- Pursue funding sources for project and program development
- Research and oversee policy development
- Represent the City of Iowa City for matters related to bicycle infrastructure projects and supporting programs

It is common for a bicycle coordinator to also oversee matters related to pedestrian mobility or active transportation in general. The title of Active Transportation Coordinator may reflect the broader scope and responsibilities of the position if the city should choose to consolidate bicycle and pedestrian matters under a single person.

### **Standing Bicycle Advisory Committee**

During the Bicycle Master Planning process, Iowa City convened two committees to provide oversight and guidance for the planning team. The Bicycle Advisory Committee consisted of community partners and residents whose knowledge, experience, insight, and involvement were critical to the creation of the Plan. The Technical Advisory Committee consisted of Iowa City department representatives and key staff from other agencies whose technical expertise and understanding of department procedures, planned projects, and other information provided a framework for plan recommendations and implementation considerations. As Iowa City transitions from planning into implementation, it will be critical that these partners and department representatives remain involved with implementation decision-making and provide leadership and/or support to carry out projects, programs, and other actions pertinent to their focus areas. Iowa City should continue to have regular Bicycle Advisory Committee meetings and include department staff to join meetings on an as-needed basis. Membership

should be reevaluated periodically to include representatives from relevant agencies, organizations, and community groups. Similar to the expansion of responsibilities of a bicycle coordinator to see all active transportation matters, it may be necessary to combine bicycling and pedestrian issues under a single Active Transportation Committee to reduce committee fatigue. The mission of this committee will be to implement this plan, as well as provide information to the City in an advisory capacity regarding pedestrian issues.

### **Annual Implementation Agenda**

In partnership with the Bicycle Advisory Committee/Active Transportation Committee and representatives of Iowa City departments, Iowa City should develop an annual implementation agenda and budget that identifies specific projects, programs, and targets for executing the Bicycle Master Plan. The annual agenda and budget should be based upon available staff capacity, funding resources, and similar considerations.

### **Adoption of Best Practice Design Guides**

Design guidelines are critical to the development of a safe, consistent bicycle network. In order to support local agencies in developing bicycle facilities based on sound planning and engineering principles and best practices from around the country, NACTO created the Urban Bikeway Design Guide. From Seattle, Washington to Washington, D.C. to Des Moines, Iowa, over fifty progressive cities have adopted the guide to inform city staff and consultants during project design and development. The guide expands upon basic facility guidance and standards included in the AASHTO Guide for the Development of Bicycle Facilities, 4th Edition (2012) and the FHWA's Manual for Uniform Traffic Control Devices (MUTCD), both of which are regularly used to for local bikeway projects, along with guidance from state design standards in the SUDAS. In 2013, the FHWA signed a memorandum expressing support for the Urban Bikeway Design Guide as a valuable

resource to “help communities plan and design safe and convenient facilities” for bicyclists and actively encourages agencies to use the guide to go beyond minimum requirements and design facilities that “foster increased use by bicyclists... of all ages and abilities.”

The Federal Highway Administration has developed a number of new resources in recent years to support bikeway planning and development as well. In 2016, the agency released Small Town and Rural Multimodal Networks (STAR guide) to support transportation practitioners by applying national design guidelines to the unique settings found in small towns and rural communities. The guide encourages innovation within the bounds of MUTCD and AASHTO compliance by providing unique engineering solutions and design treatments that address small town and rural needs.

Iowa City should adopt by resolution the NACTO Bikeway Design Guide and the FHWA STAR guide as supplemental resources to implement the recommendations included in this plan.



Figure 31. National standards provide detailed guidance for facility design.

## Resources

- NACTO Urban Bike Design Guide: <http://nacto.org/publication/urban-bikeway-design-guide/>
- Sample Endorsement Letters: Des Moines, IA: <http://nacto.org/wp-content/uploads/2016/05/Des-Moines-Endorsement-all-Guides.pdf>

- Minneapolis, MN: [http://nacto.org/wp-content/uploads/2015/06/Minneapolis\\_Urban-Bikeway-Design-Guide-endorsement-letter\\_08.24.11.pdf](http://nacto.org/wp-content/uploads/2015/06/Minneapolis_Urban-Bikeway-Design-Guide-endorsement-letter_08.24.11.pdf)

## Zoning Code and Land Subdivision Regulations Updates

Land use patterns have significant impact on how people travel in and around Iowa City. Bicycling and walking are disproportionately impacted by land use patterns when compared to other travel modes, as travel distances, street connectivity, and other environmental factors can restrict or deter altogether bicycling and walking activity. Zoning ordinances, subdivision regulations, building codes, and other policies create the framework for physical development. Zoning ordinances and subdivision regulations in particular focus on environmental design considerations, including aesthetics and safety, street connectivity, development scale and density, building setbacks, and mixture (or separation) of land uses. As a result, these regulations can change the way individuals relate to the people and places around them by affecting travel distances, streetscape character, presence of sidewalks and bicycling facilities, and even trees and landscaping.

An expanding body of scientific research points to the direct link between land use policies like zoning ordinances and subdivision regulations, and active transportation. Zoning regulations can impact the percentage of population making trips on foot or by bicycle instead of car. Zoning regulations and supportive land use policies and infrastructure improvements can increase bicycling trips and the percentage of the population riding bicycles.

In recent years, Iowa City has been proactive in updating zoning and development regulations to ensure that new development and redevelopment incorporate bicycling considerations and support active transportation. As bicycling continues to grow as valued transportation mode in Iowa City, it will be important to integrate and codify this value to ensure it is reflected in future developments. The



following amendments to Iowa City Zoning Code and Land Subdivision regulations should be considered to increase bicycle safety, connectivity, and accessibility:

- Increase minimum sidewalk widths. (City Code, Chapter 15 Section 3 Subsection 3 Paragraphs B-D) The 8-foot wide sidewalks adjacent to many roadways throughout Iowa City function as an extension of the trail system and are intended to serve bicycle traffic. In addition, many local sidewalks are used by children, young adults, and adults less comfortable bicycling on the roadways. Iowa City should consider increasing minimum width for wide arterial sidewalks from 8 feet to 10 feet, and increasing minimum width for sidewalks along collectors from 5 feet to 6 feet to more comfortably accommodate all sidewalk users and increase overtaking and bi-directional passing safety.
- Incorporate bike lanes into all collectors and arterials. (City Code, 15-3-2, Table 15-1) The current standards for street rights-of-way and pavement width differentiate between roads with and without bike lanes. This differentiation increases the difficulty of retroactively adding bike lanes due to pavement width constraints. Iowa City should consider standardizing bike lanes (or separated bike lanes) as a required element of all collectors and arterials. This policy amendment will help fulfill the LAB's metric examining presence of bike lanes on arterial roads and will also ensure bicycle network growth is commensurate with future land development and surface transportation system growth.
- Differentiate between long-term and short-term parking requirements. (City Code, 14-5A) Bicycle is an important element of the current off-street parking requirements of the city's zoning code, specifying the quantity, type, and site location of bicycle parking facilities for developments. The lack of differentiation between short-term parking and long-term parking does not

provide adequate storage for long-term parking, which includes bicycle lockers, indoor secure parking areas, and covered, weather-protected parking areas, and may discourage daily bicycle commuting. The City should consider updating bicycle parking requirements to differentiate between these types of bicycle parking and associated requirements for each.

## Resources

- Zoning Regulations for Land Use Policy, Roadmaps to Health, Robert Wood Johnson Foundation: <http://www.countyhealthrankings.org/policies/zoning-regulations-land-use-policy>
- Bicycle Parking Zoning Modifications, City of Cambridge, MA <http://www.cambridgema.gov/CDD/Projects/Planning/bicycleparkingzoning>

## Complete Streets Implementation

Iowa City has an adopted and very good Complete Streets policy that will contribute to the implementation of facility recommendations included in this plan, as well as the general bikeability of streets and public rights-of-way throughout Iowa City. To ensure implementation of the policy and the bicycle master plan, it is recommended that representatives across City departments work together to review existing plans, processes, and procedures related to the transportation system and establish goals and targets for complete streets implementation. Suggestions for how to best proceed with creating such a process and recommendations for key elements are provided below.

## Create an Implementation Plan Process

- Objective: Create a Complete Streets Committee that includes representatives from all city departments/divisions and relevant city boards/committees that will be charged with development of an implementation plan and schedule that will review and revise all procedures, plans, regulations, and processes of implementation

and will perform an annual review. If there is considerable overlap in duties and responsibilities with other existing committees, consider assigning these responsibilities to an existing committee.

- Objective: secure training for pertinent city staff and decision-makers on the technical aspects of Complete Streets principles and best practices, as well as providing for community engagement and education on Complete Streets.
- Objective: Identify and recommend land use patterns, parking requirements, and development policies that increase overall mobility, which improve and support compact, mixed-use, bikeable and walkable development and connections to rural routes and areas, and that support local economic development.

### **Establish Design Criteria Utilizing Up-To-Date Standards, Innovative Design Guidance, and Current Best Practices**

The City will utilize the latest design guidance, standards, and recommendations available to implement the Complete Streets Policy.

- Objective: The City will utilize the National Association of City Transportation Officials (NACTO) Street and Bikeway Design guides as the formal guidance for the development of city roadway and development projects.
- Objective: The City will the current version of the Manual of Uniform Traffic Control Devices (MUTCD), for signal, signing and striping operations.
- Objective: The City will utilize the current version of the American Association of State Highway and Transportation Officials (AASHTO) Bicycle and Pedestrian guides for the development of bicycle and pedestrian projects.
- Objective: Use design to enhance and support

expansion of services for active modes of transportation including, but not limited to transit, walking and bicycling, through increased funding and cooperative regional planning.

- Objective: Ensure the design of projects promotes the health and enhances the economic benefits of walking and bicycling as practical modes of transportation.
- Objective: Design projects so that they assure the protection of local and regional investments in transportation and assure proper maintenance and improvements of the facilities over time.
- Objective: Establish a detailed set of design guidelines for transportation system safety, user comfort, and maintenance.
- Objective: Include pedestrian lighting, connections through parking lots, short-term and long-term bicycle parking located near building entrances, and consideration of strong aesthetics in core or high-activity areas of town.
- Objective: In addition to infrastructure recommendations, provide programmatic elements such as wayfinding, kiosks, public art, and events such as open streets, and along sidewalks such as walking tours, street festivals, and public markets.

### **Youth Bicycle Safety Classes**

Instilling a love for bicycling in children and young adults can support long-term gains in cultural acceptance of and support for bicycling activity. While many children learn bicycling at a young age, it is not a part of physical education curriculums in most schools in Iowa City and across the country, partially due to the lack of access to resources. Some school districts, however, have begun to incorporate basic bicycling safety and skills into physical education curriculums with great success, often partnering with local police departments, non-profits, and certified bicycling instructors to provide bicycles for students and offer effective instructions to



encourage safe riding practices and a basic understanding of rules and responsibilities when riding around motor vehicle traffic. Iowa City should coordinate with the ICCSD to explore opportunities to teach basic bicycling skills to younger students.

## Resources

- SHAPE America (Society of Health and Physical Educators) Bicycle Safety Curriculum: [http://www.shapeamerica.org/publications/resources/teachingtools/qualitytype/bicycle\\_curriculum.cfm](http://www.shapeamerica.org/publications/resources/teachingtools/qualitytype/bicycle_curriculum.cfm)
- LAB Bicycling Skills 123 Youth and Safe Routes to Schools courses: <http://www.bikeleague.org/content/find-take-class>
- Safe Routes to School National Partnership Traffic Safety Training Resources: <http://www.saferoutespartnership.org/state/bestpractices/curriculum>



Figure 32. A recent bike rodeo at Weber Elementary School taught children safer bicycling skills.

## Earn-A-Bike and Create-A-Commuter Programs

Many children and adults in Iowa City lack access to quality bicycles and bicycle maintenance training and tools. In order to address this lack of access, the City and its community partners should develop Earn-A-Bike and Create-A-Commuter programs for children and adults, respectively. In March 2017, the Iowa City Police Department announced an Earn-A-Bike pilot program for local youth in collaboration with the City of Iowa City and World of Bikes, one of Iowa City's local bike shops. The program will focus on teaching children basic bike maintenance and bicycling skills and provide each participant with a refurbished bike, helmet, and bike lights. The initial program is limited to 15 children. If successful, the City should determine capacity and resources needed and available to expand the program to a wider audience.

Similar in concept to the Earn-A-Bike program, Create-A-Commuter programs provide low-income adults with limited access to transportation choices a function bicycle, as well as bicycle maintenance and skills training. The program was first developed in Portland Oregon by the Community Cycling Center using federal Job Access and Reserve Commute (JARC) funding. Bicycles are outfitted with fenders, cargo racks, lights, and other equipment essential to safe bicycle commuting.

## Resources

- Earn-A-Bike Program, St Louis Bicycle Works (St Louis, MO): <http://www.bworks.org/bikeworks/earn-a-bike/>
- Create-A-Commuter Program, Community Cycling Center (Portland, OR): [http://web1.ctaa.org/webmodules/webarticles/articlefiles/Portland\\_TriMet.pdf](http://web1.ctaa.org/webmodules/webarticles/articlefiles/Portland_TriMet.pdf)
- <http://www.communitycyclingcenter.org/?s=create+a+commuter>

## Public Education and Awareness Campaigns

A broad public outreach and education campaign can help normalize bicycling as an accepted and welcomed way for people to travel in Iowa City through compelling graphics and messages targeted to motorists, pedestrians and bicyclists. These campaigns utilize a variety of media to share their messages, from billboards, bus, and bus stop shelters to websites, online ads, social media outlets. Common topics for media campaigns include safety and awareness; sharing the road and travel etiquette; light and helmet use; and even humanization of bicyclists as fathers, mothers, sons, and daughters. Iowa City should develop a public education and awareness campaign to further establish bicycling as a valued mode of travel for all community residents.

### Resources

- We're All Drivers, Bike Cleveland (Cleveland, OH): <http://www.bikecleveland.org/our-work/bike-safety-awareness/>
- Drive with Care, Bike PGH (Pittsburgh, OH): <http://www.bikepgh.org/care/>
- Every Lane Is a Bike Lane, Los Angeles County Metropolitan Transportation Authority (Los Angeles, CA): <http://thesource.metro.net/2013/04/11/every-lane-is-a-bike-lane/>
- Every Day Is a Bike Day, Los Angeles County Metropolitan Transportation Authority (Los Angeles, CA): <http://thesource.metro.net/2014/04/30/l-a-metro-launches-new-bike-ad-campaign-in-time-for-bike-week-l-a-may-12-18/>
- A Metre Matters and It's a Two-Way Street, Cycle Safe Communities, Amy Gillett Foundation (Australia): <http://cyclesafe.gofundraise.com.au/cms/home>



Figure 33. A public education campaign can include traditional advertisements, maps, and educational brochures.

### Bike Light Campaign

Bicycling at night without proper front and rear bike lights is dangerous, yet many people bicycling in Iowa City lack the proper lighting to stay safe and visible at night. In order to increase bicycling safety and overcome cost barriers that prohibit many individuals from purchasing bike lights, Iowa City should coordinate with community partners to create a bike light giveaway campaign. Community organizations with a public health focus may be effective partners and see a need to sponsor such a program. Similar programs across the country combine catchy names like “Get Lit” or “Light Up” to garner public and media attention. The City should consider scheduling the program to coincide with back to school events for college students or the end of daylight savings.



This would differ from the “Light the Night” campaign organized by the Iowa City Police Department and Think Bicycles, in which bicyclists who were issued citations for lack of proper lights could purchase bike lights and have their citation fee waived. In contrast, this new program would reduce or eliminate the cost altogether and therefore have a greater positive impact for low-income individuals.

## Resources

- How to Do a Successful Bike Light Giveaway, LAB: <http://www.bikeleague.org/content/how-do-successful-bike-light-giveaway>
- Get Lit, Community Cycling Center (Portland, OR): <http://www.communitycyclingcenter.org/get-lit/>
- Pop-Up Bike Light Giveaway, BikePGH (Pittsburgh, PA): <http://www.bikepgh.org/2013/09/30/pop-up-bike-light-giveaway/>

## Themed & Targeted Bicycle Rides

Organized bicycle rides offer people a comfortable and fun way to explore Iowa City’s bicycle routes and trails in a group setting. For many, these types of events build participants’ confidence and knowledge of the bicycle network, giving them the tools necessary to choose bicycling for short daily trips. Target audiences for these organized bicycle rides should reflect the diversity of the community and include children, seniors, low-income residents, minority residents, immigrants, and college students.

Smaller group rides with capped attendance can capitalize on cultural assets and amenities like historic monuments and buildings, city parks, business districts, and other unique locations. In St Louis, Missouri, Trailnet’s free weekly Community Rides center around the city’s history and culture, with themes ranging from museums, breweries, jazz, prohibition, greenways, and the Underground Railroad. Many of these rides are organized and led by local historians and civic enthusiasts.

Larger group rides called cruiser rides that offer family-friendly environment have become mainstays in communities across the country. The Denver Cruiser Ride, the Slow Roll in Detroit, and Freewheel in Memphis attract hundreds to thousands of participants, move at a leisurely pace, and welcome people of all ages and abilities.

The City should coordinate with local advocacy organizations and other community partners to explore opportunities to diversify and strengthen organized bicycle ride offerings as an essential tool to encourage bicycling activity in Iowa City.

## Resources

- Trailnet (St Louis, MO) Community Rides: <http://trailnet.org/tag/community-rides/>
- Slow Roll (Detroit, MI): <http://slowroll.bike/>
- Denver Cruiser Ride: <http://denvercruiserride.com/>
- People for Bikes, How to Start a Cruiser Ride: <http://pfb.peopleforbikes.org/take-a-brake/how-to-start-a-cruiser-ride/>



*Figure 34. Iowa City Cycling Club and other partners host numerous rides throughout the year.*

## Bike Mentor Program

For many Iowa City residents, bicycling to work can be a daunting challenge. Timing, route planning, selecting the right clothing for both work and the ride itself, and dozens of other considerations can overwhelm potential commuters, even if it's only a short ride from home to work. A bike mentor program addresses this need by matching new commuters with experienced commuters who can assist with route planning, commute preparation, and other nuances of commuting by bike. The City of Iowa City should coordinate with community partners to establish a network of bike mentors to share their experiences, assist new commuters with helpful tips and resources, and even ride to and from work destinations together. Bike mentor programs can even be established internally by major employers. These opportunities should be explored as well.

## Resources

- Hartford County, MD Bike Mentor Program: <http://www.hartfordcountymd.gov/763/Bike-Mentor-Program>
- Bike New York's Gear Femmes: <http://www.bike.nyc/education/programs/gearfemmes/>
- National Institute for Health Ride Mentors: <http://www.nihbike.com/home/ride-mentors>

## Bike Month and Bike to Work Events

Local agencies and organizations have developed a robust slate of Bike Month activities and events in recent years, having grown out of the shorter Bike to Work Week period, usually the third week of May. A full calendar of activities during the month of May is kept up to date on Bike Iowa and Think Bicycles of Johnson County websites, and local partners and residents can submit events to the calendar. This participatory approach to creating a full calendar of events is modeled after the Pedalpalooza in Portland, which compiles over 100 events during the month of June to encourage bicycling across the city.

In Iowa City and neighboring municipalities in Johnson County, over 30 events were held in Bike Month 2017, including bike rodeos, party rides, slow rolls, farmer's market rides, trail rides, and repair clinics. The City of Iowa City should continue to support its local partners to increase Bike Month's visibility and impact within the community, and also explore opportunities to expand Bike Month's reach to traditionally underserved communities. For bicycling to become accepted and enjoyed by all, it must be accessible to all as well. Bike Month presents a prime opportunity to create inclusive events that serve a diverse audience and build shared support for bicycling.

## Resources

- Think Bicycles Bike Month: <http://www.thinkbicycles.org/bike-month.html>
- Bike Month Iowa City Facebook Page: <https://www.facebook.com/bikemonthiowacity/>
- Bike Iowa Events Calendar: <http://www.bikeiowa.com/Events>



*Figure 35. Iowa City holds many events for Bike Month in May.*





Figure 36. Police officer training should include riding.

### Specialized Bicycle-Focused Training for Law Enforcement Officers

Law enforcement officers receive considerable training annually to effectively enforce local and state laws, but little of that training focuses specifically on bicycle laws and safety. To address this gap in education, the Iowa City Police Department should invest in training opportunities targeting bicycle (and pedestrian) laws, law enforcement, travel behavior, and education tactics in order to better support active transportation. Funding support from local agencies, state departments of transportation, state highway patrols, and non-profit advocacy organizations have helped to bring valuable training and resources to law enforcement agencies across the country.

### Resources

- Bike Cleveland Enforcement Education (Cleveland, OH): <http://www.bikecleveland.org/enforcement/>
- Continuum of Training. We Bike, etc: <http://www.webike.org/services/enforcement/continuum-of-training>

### Targeted Law Enforcement Activity

Targeted enforcement is an effective way of encouraging lawful travel behavior and instilling respect for other road users. Enforcement activities may include deployment of speed reader boards, police “sting” operations at high crash intersections, wrong-way riding enforcement, bike light enforcement, and even distribution of safety literature along corridors with high volumes of bicycle activity. In the City of Chicago, police officers partner with the City’s Bicycling Ambassadors to educate road users.

The Iowa City Police Department should explore opportunities for regularly-scheduled enforcement activities at strategic locations around the community to support bicycling activity and create safer environments for all road users.

### Resources

- City of Chicago Targeted Enforcement (Chicago, IL): <http://chicagocompletestreets.org/safety/targetedenforcement/>



Figure 37. Police can partner with other groups to educate the public during enforcement activities.

## Publicize and Enforce “No Bikes on Sidewalks” and Dismount Zones

Bicycling activity on busy sidewalks can be dangerous and obstructive for bicyclists, pedestrians, and even motor vehicles. Iowa City has a number of sidewalks and pedestrian malls in Downtown and surrounding the University of Iowa campus where bicycling on sidewalks is prohibited. Bicyclists are also required to dismount and walk their bicycles on a numerous pedestrian bridges that lack sufficient width for multi-use activity. In order to create safe spaces for all road users, Iowa City Police Department should combine targeted public messaging and visible enforcement of bicycling prohibitions on sidewalks in these designated areas. The resources below highlight efforts from other cities across North America.

### Resources

- Sidewalks are for Pedestrians, City of Toronto, Canada: <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=94230995bbbc1410VgnVCM10000071d60f89RCRD>

## Iowa City Bicycle Program Web Presence

The City of Iowa City's website provides an ideal platform for the distribution of educational materials, project updates, upcoming events, public meetings, and other relevant information to inform, educate, and encourage residents to travel by bicycle. Iowa City should consolidate and organize bicycle-related information on the City's website to provide a single point of entry for website users to access bicycle information. While the primary focus should be on city-driven initiatives, it should also include resources from and/or links to community partners websites and highlight the importance of these community partners in creating a BFC.

### Resources

- Honolulu Bicycle Program Webpage (Honolulu, HI): <https://www.honolulu.gov/bicycle>

- Bicycling in Minneapolis Webpage (Minneapolis, MN): <http://www.ci.minneapolis.mn.us/bicycles/>
- Seattle DOT Bicycle Program (Seattle, WA): <http://www.seattle.gov/transportation/bikeprogram.htm>

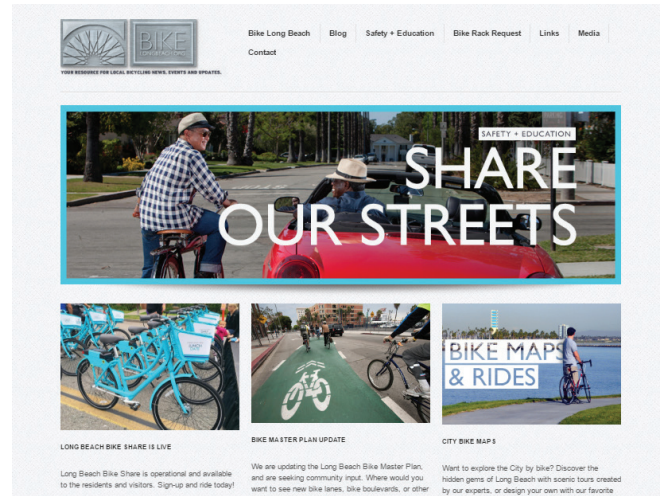


Figure 38. The Bike Long Beach website provides information on bicycling in Long Beach, California.

## Project Outreach

Iowa City has used multi-pronged outreach efforts for many capital projects in order to actively engage and educate residents about changes to public infrastructure. As bicycle facility projects are developed and installed, it will be important to continue these outreach efforts and inform residents along project corridors about how to interact with these new bicycle facilities and the likely increase in bicycle activity that will result. By using online videos, door hangers, neighborhood meetings, and other outlets, Iowa City can build awareness and support for these new facilities as important elements of the transportation system. Examples of project outreach via community meetings and an online presence are listed below.

### Resources

- Seattle DOT Bicycle Program Projects (Seattle, WA): <http://www.seattle.gov/transportation/bikeprojects.htm>



- Cincinnati Bicycle Transportation Plan Current Projects (Cincinnati, OH): <http://www.cincinnati-oh.gov/bikes/bike-projects/>
- Denver City and County Current Projects (Denver, CO): <https://www.denvergov.org/content/denvergov/en/bicycling-in-denver/infrastructure.html>

## Pop-Up Demonstration/Pilot Projects

Many bicycle facility types recommended in this Plan are new to Iowa City residents. Many bicyclists and motor vehicle drivers will be unfamiliar with how to operate their vehicles on, adjacent to, or across these new bikeways. By developing day-long or weekend-long pop-up demonstration projects, Iowa City can introduce these new bikeways to the community in a low-cost and effective way. Pop-up demonstration and pilot projects have proven effective for their ability to build support for new bicycle facility, gain acceptance among skeptical residents, and generate community interest in the City's efforts to build a more bicycle friendly Iowa City. Public health students at the University of Iowa conducted a bicycle boulevard demonstration project in 2015 in collaboration with more than a dozen local partners, generating considerable press and positive feedback from community members. The City should work with community partners and neighborhood groups to use pop-up demonstration and pilot projects when introducing new bikeways to the community and building support for safe, comfortable, low-stress bicycle facilities as an accepted part of the street network.

## Resources

- WALC Institute Pop-Up Demonstration Toolkit: <http://www.walklive.org/popup-demonstration-tool-kit/>
- Iowa City Bike Boulevard Demonstration Project: <https://sustainability.uiowa.edu/news/student-group-tests-iowa-city-bike-boulevard/>
- <https://www.facebook.com/iowacitybikeboulevard>

## Annual Report Card/Bicycle Account

An annual report card that tracks implementation progress is an effective way to communicate the community's efforts to integrate bicycling into the fabric of the community. A report card captures plan successes and highlights the importance of collaboration to achieve shared goals and objectives. The document can be posted on the City's website, shared via social media, and printed for dissemination at public facilities and community events. Depending on the volume of actions completed and the capacity of available staff, the report card can range in size and scope from a brief one-page information sheet to a more detailed report, which can include resident surveys, economic impact analyses, and other tools to communicate the value and benefits of bicycling.

## Resources

- Gateway Bike Plan Report Card, Great Rivers Greenway (St Louis, MO): <http://greatriversgreenway.org/about-us/projects-in-partnership/gateway-bike-plan/>
- Bicycle Account Guidelines, LAB: <http://www.bikeleague.org/content/bicycle-account-guideline-provides-tools-monitor-biking-your-community>
- Auckland, New Zealand Cycling Account: <https://at.govt.nz/cycling-walking/cycling-walking-monitoring/auckland-cycling-account/>

**MONTEREY ROAD COMPLETE STREET PROJECT**

EVALUATION MEASURES		1 EXISTING	2A EXPANDED PEDESTRIAN SPACE	2B DEDICATED BIKE LANE	2C SHARED BIKE LANE	3 SIMPLE
PEDESTRIAN	Accessibility	LOW	HIGH	LOW	LOW	LOW
	Total pedestrian space as percentage of right of way	LOWEST	HIGHEST	LOW	LOW	LOW
	Width of sidewalk	WIDEST	HIGHEST	WIDEST	WIDEST	WIDEST
	Schedule clear zone separation from motor vehicle travel lanes	WIDEST	HIGHEST	WIDEST	WIDEST	WIDEST
	Length of crosswalk	LONGEST	HIGHEST	LONG	LONG	LONGEST
BICYCLE	Bicycle level of service (separation and protection)	WIDEST	HIGHEST	HIGHEST	HIGHEST	HIGHEST
	Bicycle parking availability	LOWEST	HIGHEST	LOW	LOW	HIGHEST
TRANSIT	Effect on transit travel time	WIDEST	HIGHEST	HIGHEST	HIGHEST	HIGHEST
	Space for bus stop shelters	WIDEST	HIGHEST	WIDEST	WIDEST	WIDEST
	Ease of pedestrian access to bus stops	WIDEST	HIGHEST	WIDEST	WIDEST	WIDEST
MOTOR VEHICLES	Effect on average motor vehicle speed	WIDEST	HIGHEST	HIGHEST	HIGHEST	HIGHEST
	Effect on motor vehicle travel time	WIDEST	HIGHEST	HIGHEST	HIGHEST	HIGHEST
	Motor vehicle parking availability	WIDEST	HIGHEST	WIDEST	WIDEST	WIDEST
	Effect on through traffic	WIDEST	HIGHEST	HIGHEST	HIGHEST	HIGHEST
SAFETY	Potential to reduce pedestrian crashes (CRF)	LOWEST	HIGHEST	WIDEST	WIDEST	WIDEST
	Potential to reduce bicycle crashes (CRF)	LOWEST	LOW	HIGHEST	HIGHEST	HIGHEST
	Potential to reduce motor vehicle crashes (CRF)	LOW	HIGHEST	WIDEST	WIDEST	HIGHEST

Figure 39. An annual report card helps track progress on bicycling-related initiatives throughout the city.

## Expanded Bicycle Count Program

Bicycle count programs are valuable mechanisms for tracking bicycle facility usage over time and evaluating the success of infrastructure projects for their ability to increase ridership. MPOJC currently conducts annual counts of trail users using infrared automated counters. Count locations are based on requests from MPO entities and included seven locations in Iowa City in 2015.

The City should investigate expansion of the annual bicycle and pedestrian count program of trail users to include on-street locations along key corridors throughout the city. The same locations should be counted in the same manner annually. This will provide the City with information about the growth of bicycle ridership and pedestrian usage of facilities, determine where improvements need to be made, assess who is using the facilities, and provide a dataset to accompany grant applications. The City should consider additional counts along corridors slated for future bikeway development, like Clinton Street and Madison Street, to evaluate before and after conditions. The installation of several permanent counters can also be used to calibrate annual extrapolations at other count locations to increase data reliability. The National Bicycle and Pedestrian Documentation Project has developed recommended methodology, survey and count forms, and reporting forms for local agency count programs.



Figure 40. Trail counts can be manual or use automatic systems.

## Resources

- National Bicycle & Pedestrian Documentation Project: <http://bikepeddocumentation.org/>
- Innovations in Bicycle and Pedestrian Counts: A Review of Emerging Technologies:
  - <http://altaplanning.com/resources/innovative-counting-technologies/>
- The National Cooperative Highway Research Program (NCHRP) Guidebook on Pedestrian and Bicycle Volume Data Collection: <http://www.trb.org/Publications/Blurbs/171973.aspx>
- Oregon Metro, Portland, OR Count Program: <http://www.oregonmetro.gov/how-metro-works/volunteer-opportunities/trail-counts>

## Crash Monitoring and Evaluation

Crash reports from collisions involving bicyclists can be an invaluable resource for learning about the behavior of motorists, bicyclists, and pedestrians, as well as roadway conditions and characteristics that may lead to collisions. Regular monitoring and evaluation of crash locations can help to identify high-risk areas and develop solutions to minimize crash risk. While total crash volumes each year in Iowa City are relatively low, a 5-year sample size can help identify trends with regard to crash time, contributing factors, crash type, location, and other key details. Iowa City should look at conducting a more detailed analysis of reported bicycle crashes, including a review of individual crash report narratives, every two years. In addition, an online tool on the City's website can allow those biking to report concerns that are not necessarily crashes that can help identify a problem before a crash occurs.

## Resources

- Denver Bicycle Crash Analysis: Understanding and Reducing Bicycle & Motor Vehicle Crashes (Denver, CO): <https://www.denvergov.org/content/dam/denvergov/Portals/705/>



documents/denver-bicycle-motor-vehicle-crash-analysis\_2016.pdf

- University of North Carolina Highway Safety Research Center Pedestrian and Bicycle Crash Analysis Tool (PBCAT): [http://www.pedbikeinfo.org/pbcat\\_us/](http://www.pedbikeinfo.org/pbcat_us/)
- Cambridge Bicycle Crash Fact Sheet (Cambridge, MA): [https://www.cambridgema.gov/~media/Files/CDD/Transportation/Bike/Bicycle-Safety-Facts\\_FINAL\\_20140609.pdf](https://www.cambridgema.gov/~media/Files/CDD/Transportation/Bike/Bicycle-Safety-Facts_FINAL_20140609.pdf)

### Economic Impact of Bicycling Study

Bicycling is more than just a way to get around Iowa City; it's an important part of the local economy. Trail and recreational tourism, annual events that draw thousands of visitors to the area, and permanent jobs are dependent upon the bicycling activity that the community has cultivated over the years. In addition, bicycling also impacts insurance savings, healthcare cost savings, transportation cost savings, and other economic factors. The City of Iowa City and its regional partners should conduct an economic impact study to quantify the value of bicycling on the local economy and to serve as a catalyst for continued investments in bicycle facilities, programs, and events. More than a dozen states have conducted economic analyses of bicycling activity or the bicycling industry, and numerous regions and municipalities have done the same, including the Pikes Peak Region, New York City, the Capital Regional District (Victoria, British Columbia), and Portland, Oregon.

### Resources

- The Economic Impact of Cycling in the Pikes Peak Region, Pikes Peak Area Council of Governments, Trails and Open Space Coalition (Colorado Springs, CO): <http://www.trailsandopenspaces.org/wp-content/uploads/2015/04/Economic-Impact-of-Cycling.pdf>
- The Economic Impact of the Bicycle Industry in Portland, Portland Bureau of Planning and

Sustainability (Portland, OR): <https://www.portlandoregon.gov/bps/article/555482>

- Bikeonomics: A Primer on the Economic Impact of Cycling in the Capital Region, Capital Region District (Victoria, B.C.): [https://www.crd.bc.ca/docs/default-source/regional-planning-pdf/Pedestrian-Cycling-Master-Plan/crd\\_bikesed-booklet-version.pdf?sfvrsn=2](https://www.crd.bc.ca/docs/default-source/regional-planning-pdf/Pedestrian-Cycling-Master-Plan/crd_bikesed-booklet-version.pdf?sfvrsn=2)

### Apply for Gold-Level BFC Status

In its Strategic Plan, the City Council has made clear its commitment to improving bicycling conditions in Iowa City and has targeted application for Gold-Level BFC designation from the LAB in 2017. The achievement of this designation in 2017 would be largely dependent on activities conducted and projects completed prior to the adoption of this Bicycle Master Plan. The current Silver-Level BFC Designation is due to expire in 2017, and the City must therefore reapply in August of 2017 regardless.

### Bicycle Master Plan Updates

Like all plans, this Bicycle Master Plan will lose its efficacy and relevance as the bike network grows, physical development occurs, travel patterns change, and community needs and values evolve. Iowa City should revisit the plan every five years for a comprehensive update, at which point implementation progress can be measured, new goals and targets can be established, and bike network and support systems can be evaluated and updated to reflect current conditions and opportunities. The City should also establish a process whereby changes to the bike network itself can be made to reflect newly identified fatal flaws in project recommendations or route changes that capitalize on unforeseen opportunities during initial plan development.







## SECTION 6 Implementation





## Implementation

The Iowa City Bicycle Master Plan provides a comprehensive set of recommendations and physical improvements intended to weave bicycling into the physical and social fabric of the community. Implementing the Plan will require collective commitment and persistence from Iowa City and its community partners to pursue the opportunities identified in this plan, as well as those that arise in the coming years.

This chapter of the plan sets forth a multi-pronged strategy to implement the bicycle network, programs, and policy recommendations to ultimately achieve the vision of a bicycle-friendly community in which bicycling is a safe, comfortable, convenient, and preferred mode of travel and recreation for people of all ages and abilities. Included in this chapter are immediate actions to transition into plan implementation, capital project prioritization, cost estimates, funding sources, a project phasing strategy, ongoing maintenance recommendations, and evaluation activities.

### Going for Gold: Immediate Actions

The following immediate action steps are designed to initiate plan implementation, sustain momentum built during the planning process, and help Iowa City become a Gold-Level BFC. These action items, which represent a mix of policy, procedures, capital projects, and programs, provide early opportunities expand the bicycle network, engage community partners, and establish strong and lasting relationships on which successful implementation efforts will depend.

#### Adopt the Plan

Adopting the plan is the first step and represents the City's commitment to bicycling. Adopting the plan will also provide guidance for future capital investments and transportation decisions. Iowa City should pursue a formal adoption process to incorporate this plan as a supplemental document supporting the comprehensive plan. This will add

legitimacy to the plan recommendations and open funding opportunities that favor or require potential projects to be part of an adopted plan, as in the case of the State Recreational Trails Program.

#### Establish Bicycle/Active Transportation Advisory Committee

Implementing this plan will require cooperation among city departments, local agencies, advocacy organizations, and other community partners. Through the creation of a bicycle or active transportation advisory committee, Iowa City can increase coordination among those responsible for implementing the plan and ensure that the needs and values of the community are represented and reflected in decision-making processes, provide for delegation of responsibilities, and ensure collection of key data and evaluation metrics. For more information about this committee, see Programs & Policies Memo.

#### Create Bicycle Coordinator Position

Iowa City should establish a Bicycle Coordinator position responsible for overseeing the city's diverse range of bicycling activities to enhance interdepartmental coordination, support interagency coordination, and streamline communications with community residents, stakeholders, and media. For more information about this position, see Programs & Policies Memo.

#### Complete Immediate-Term Bikeway Projects

Initial investments in bicycle facilities to target gap closure, safety improvements, and network connections will serve as visible statements to the community that Iowa City is committed to making bicycling a valued form of transportation and recreation. Immediate-term bikeway projects to be completed within the first two years of plan adoption are identified in the project phasing strategy. The 12.4 miles of immediate-term projects below represent critical additions to the active transportation network and will substantially improve bicycle



safety and connectivity, particularly through the provision of new on-street bicycle facilities.

### **Apply for BFC Designation**

Iowa City's current Silver-Level BFC Designation is due to expire in 2017, and the city must therefore reapply in August of 2017. Failure to do so will result in a revocation of the current Silver-Level designation. The lack of a significant on-street bicycle network, particularly dedicated, protected, or low-stress facilities, may be a limiting factor in the city's search for Gold-Level status; however, adoption of this plan and early plans for implementation of the expanded on-street network will help support the city's application. Regardless of the outcome, Iowa City will receive additional feedback to further refine its bicycle-related projects and programs and identify specific recommendations in this plan that will advance their efforts to achieve Gold.

### **Collect Baseline On-Street Bicycle Counts**

A bicycle count program is a valuable mechanism for tracking bicycle facility usage over time, evaluating the success of infrastructure projects for their ability to increase ridership, and demonstrating impacts on roadway safety. The City should coordinate with the MPOJC's to expand their annual bicycle and pedestrian count program to include on-street locations along key corridors throughout the city. The City should consider additional counts along corridors slated for future bikeway development, like Clinton Street and Madison Street, to evaluate before and after conditions. The installation of several permanent counters can also be used to calibrate annual extrapolations at other count locations to increase data reliability. For more information about this immediate action item, see Programs & Policies Memo.

### **Establish Baseline Performance Measurements and Set Target Benchmarks**

Evaluating plan performance will require measurable objectives and benchmarks that define success. The plan identifies specific metrics that relate to one or more goals and objectives to track implementation efforts over time. Iowa City, in collaboration with the Bicycle/Active Transportation Advisory Committee, will collect baseline measurements and propose targets for each measurement based on available resources and capacities. When proposing targets, it will be important to maintain the plan's aspirational vision for bicycling while also being cognizant of practical limitations such as time, funding, and capacity.

### **Corridor and Project Prioritization**

The City of Iowa City is responsible for the efficient, effective, and values-driven expenditure of taxpayer dollars. Bicycle-related infrastructure projects and programs must compete with other capital improvements and municipal services, as well as with one another, for limited internal and external resources. In order to maximize investment and provide the greatest benefit, Iowa City should use a prioritized approach to invest in bicycle transportation infrastructure and plan implementation. Using the corridor approach to facility development as outlined in the Bicycle Plan chapter, each bicycle corridor and associated project has been assigned a score according to its ability to address specified prioritization criteria. These criteria are based on the plan Goals and Objectives, input from the community, and feedback from the Bicycle Advisory Committee. The prioritization criteria have also been weighted based on their relative importance based on public input at the second plan open house, and on Bicycle Advisory Committee input. The criteria and their relative weights are listed below in Table 7.

**Table 7. Prioritization Criteria**

Gap Closure	25	Degree to which the corridor addresses a gap in the existing bikeway network by providing a facility type of equal or greater level of comfort
Safety	25	Degree to which the corridor increases safety along streets with bicycle-related crashes from the last five years
Demographic Equity	15	Corridor's ability to provide bicycle access to underserved populations, including minorities, low-income households, youth, elderly, and households without access to a vehicle
Connections to Existing Facilities	15	Number of existing facilities to which the corridor connects
Nearby Parks & Schools	10	Number of parks and schools to which the corridor connects
All-Ages Facility	10	Ability of corridor to provide a low-stress, all-ages bicycle facility

Corridors are scored with a total of 100 possible points and then grouped into three categories—high, medium, and low—to reflect corridor value based on the criteria above. The prioritization results for each corridor and associated projects are shown in Map 29 on the following page. Prioritization scores for each recommended project are also shown in the appendix of this plan. While these prioritization scores are a critical factor for project phasing, other important factors like available funding, programmed projects, funding sources, and logical network growth and development inform the phasing schedule for network buildout as well. The phasing plan is described later in this chapter.

### Cost Estimate Assumptions

Cost estimates are an essential planning tool used for programming capital improvements and drafting applications for external funding sources. Cost estimates were developed for each project based on initial planning-level examples of similar constructed projects and industry averages. These costs were then refined with the assistance of local staff based on local experience. All facility designs and associated cost estimates proposed in this plan are conceptual in nature and must undergo final engineering design and review through

coordination between all concerned departments in order to arrive at detailed project costs. These costs are provided in 2017 dollars and include a 20 percent contingency. Inflation should be included in costs in future years when bikeway improvements are programmed.

The cost estimates do not include costs for corridor planning, public engagement, surveying, engineering design, right-of-way acquisition, and other work required to implement a project, since these are planning-level costs. Based on city experiences, these elements can and should be added as these projects are programmed into the CIP. Depending on the type of improvement, these additional costs can generally be estimated at up to 25 percent of the facility construction cost, in the case of a shared use path design or a two-way cycle track. Construction costs will vary based on the ultimate project scope (i.e., combination with other projects) and economic conditions at the time of construction. When combined with larger roadway projects, the city can achieve economies of scale and maximize the value of every dollar spent on transportation infrastructure.

Cost estimates for unfunded recommended projects included in the immediate-, near-, and



# Bikeway Project Prioritization

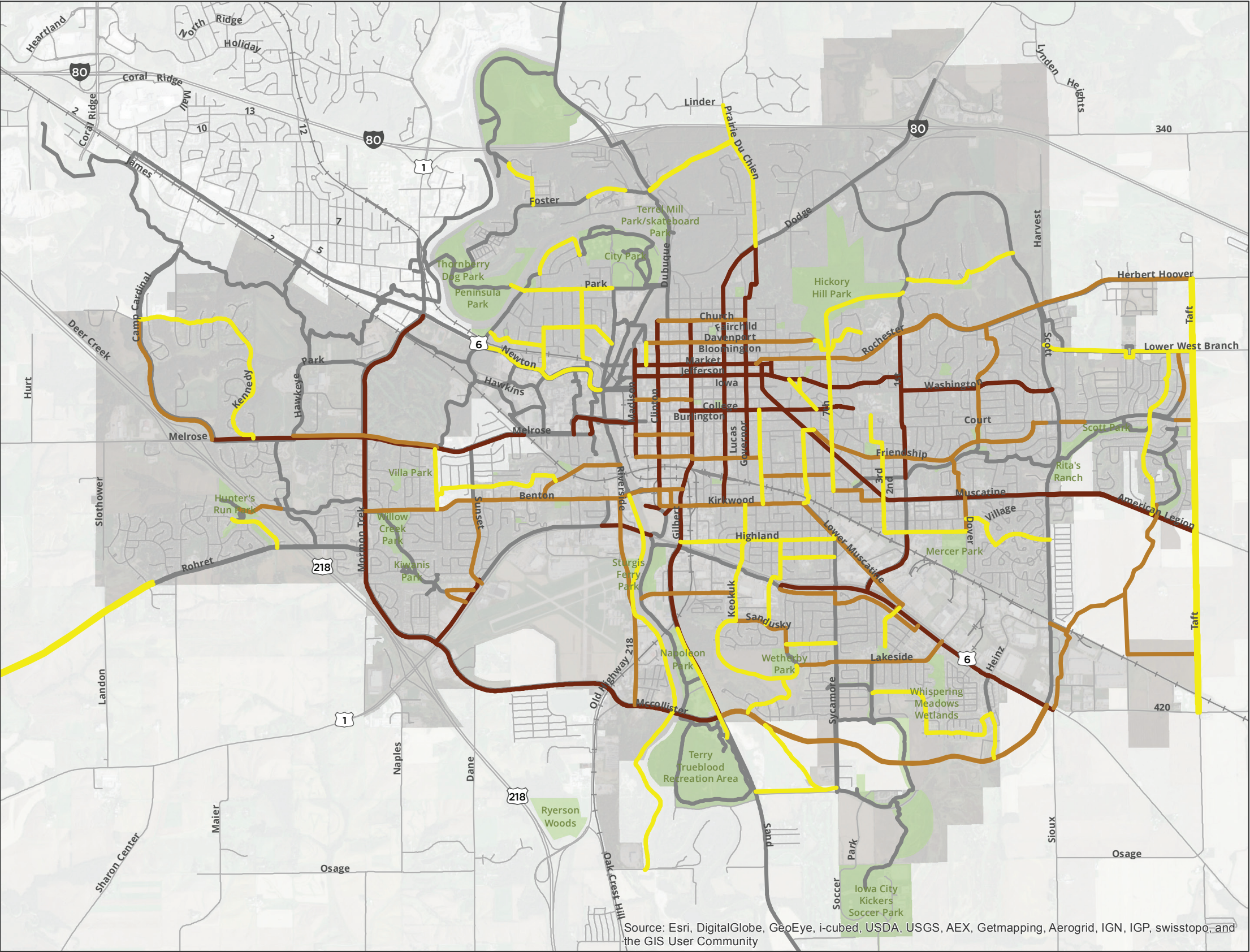
## Legend

### Bikeway Prioritization

- High-Priority Recommendation
- Medium-Priority Recommendation
- Low-Priority Recommendation
- Existing Bikeway

### Other Map Elements

- Interstate
- Principle Arterial
- Minor Arterial
- Collector
- Local Road
- Railroad
- Park
- Iowa City Boundary



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Map 29. Bikeway Project Prioritization



**Table 8. Cost estimates by facility type**

Facility Type	Average Cost Per Mile	Recommended Miles	Total Cost
Shared Use Path	\$1,132,250	6.0	\$6,821,925
Sidepath	\$638,040	5.0	\$3,205,320
Two-Way Cycle Track	\$1,493,500	0.5	\$724,516
Buffered Bike Lanes*	\$64,071	3.2	\$202,674
Standard Bike Lanes	\$102,034	15.7	\$1,604,888
Climbing Lanes	\$55,130	0.2	\$10,598
Bicycle Boulevards	\$80,470	22.7	\$1,828,675
Marked and Signed Routes	\$17,110	9.5	\$162,506
<b>All Recommended Bikeways</b>		<b>66.4</b>	<b>\$14,561,101</b>

\* Majority of these projects are one-way buffered bike lanes, resulting in lower average costs per mile.

long-term implementation phases are listed in Table 8. Bikeways to be developed as part of other programmed projects or as integral components of roadway reconstruction projects according to the city's street design standards are not included in the cost estimates table. A complete list of cost estimates for each individual project can be found in the appendix of this document.

## Project Phasing Strategy

Given the limited resources available to implement the plan, it is necessary to phase recommended projects over time in a manner that best supports the vision and the goals of the plan, addresses safety issues and network gaps, and provides for orderly and logical network expansion.

The City's Annual Complete Streets Improvements and Traffic Calming line items in the FY2018 Capital Projects Fund identifies \$150,000 and \$20,000 per year, respectively, from 2018 through 2021. With opportunity to leverage this line item for external funding at a 50/50 or 80/20 matching level, the City can increase annual investments in bikeway projects

by an additional \$150,000 to \$600,000. In addition, some recommended projects are already identified as separate projects in the FY2018 five-year CIP, and others can be developed in tandem with programmed roadway construction, reconstruction, repaving, and other improvements included in the five-year CIP. For example, new arterial roadways like the McCollister extension from Gilbert to Sycamore, a sidepath and bike lanes will be constructed per design standards. Other projects on existing local roadways may be incorporated into resurfacing projects funded through the Annual Pavement Rehabilitation line item.

Using a combination of project prioritization, cost estimates, programmed capital improvements, available funding in city budget, and other information, recommended projects have been grouped into three distinct project phases: immediate term (2017-2018), near term (2019-2022), and long term (2023-2027). It is important to note that project phasing should not restrict the development of projects outside their identified phasing term should opportunities arise to move a project forward. With over 100 miles of recommended bikeways included



**Table 9. Immediate-term projects (2017-2018)**

Project	Length	Phasing Notes
Clinton Street 4-lane to 3-lane conversion with bike lanes	1.28	Programmed capital improvement scheduled for 2018.
College bicycle boulevard	1.02	Incorporate wayfinding signage and pavement markings. Traffic calming already present.
Camp Cardinal bike lanes	1.11	Add markings and signage to existing wide striped shoulders.
Governor bike lane/protected bike lane from Bowery to Brown	1.10	Project S3942 - Scheduled for resurfacing in 2018.
Dewey/Summit/Brown bicycle boulevard	0.42	Complete in tandem with Governor resurfacing to provide complete connection to Dodge sidepath and Prairie Du Chien.
Prentiss & Bowery bicycle boulevard	0.86	Provide east-west connection extension from Clinton.
Mormon Trek Street 4-lane to 3-lane conversion with bike lanes from Melrose to Westside	1.72	Programmed for road diet in 2018.
Madison Street 4-lane to 3-lane conversion with bike lanes from Market to Court	0.74	Programmed for road diet in 2018. Include signage and markings to extend facility north to the Iowa River Trail.
Myrtle and Riverside intersection and signal improvements with sidewalk access to the Iowa River Trail	N/A	Project S3933 - Programmed for improvements in 2018, including crosswalk improvements and trail access improvements.
Greenwood & Myrtle bicycle boulevard	0.64	Complete in tandem with Myrtle/Riverside intersection improvement project S3933.
Wetherby bicycle boulevard (Lakeside, Sandusky, Taylor, Southgate, Wetherby)	2.22	Increase bicycle access to parks and trails south of Hwy 6. May incorporate phased approach beginning with wayfinding signage and pavement markings.
Keokuk road diet from Hwy 6 to Sandusky	0.37	Increases safety and Hwy 6. Completes link in Southside Bicycle Boulevard.
Highway 1 Sidepath Trail	0.52	Project R4225 - Programmed for construction in 2018.
Willow Creek Rd neighborhood connector	0.18	Gap closure project should be completed in conjunction with Hwy 1 sidepath to enhance connectivity to Willow Creek Trail.
<b>Total Miles of Immediate-Term Projects</b>	<b>12.38</b>	<b>Total Cost for Immediate-Phase Projects: \$786,177</b>

in the plan, full network buildout cannot be accomplished within ten-year timeframe identified in this phasing plan. As the network expands and the plan is revisited phasing strategies will be adjusted to reflect changing priorities, opportunities, and constraints.

The project phasing strategy is shown on Map 30. Immediate and near-term projects are listed below, and all phases are included as an attachment.

**Table 10. Near-term projects (2019-2022)**

Project	Length	Phasing Notes
Dodge bike lane/buffered bike lane from Governor to Kirkwood	1.87	Improve Dodge to provide buffered bike lane/bike lane corridor along with Governor.
Benton bike lanes from Greenwood to Mormon Trek	1.24	Complete following installation of facilities on Greenwood and Myrtle. Provide direct link between Mormon Trek and Iowa River Trail.
Hwy 6 sidepath from Heinz to Hollywood	1.66	Project R4227 – scheduled for completion in 2021. Addresses gap in sidepath network.
Market & Jefferson buffered bike lanes	1.98	Enhances safety and comfort along high-volume, high-priority corridor. Project include Clapp marked and shared route.
Jefferson/Glendale bicycle boulevard	0.97	Extends critical Central Corridor bikeway west to 1st Ave.
Washington	1.07	Extends critical Central Corridor bikeway west to Scott.
Keokuk bike lanes/marked and shared route from Kirkwood to Hwy 6	0.44	Improves north-south access across Hwy 6.
Kirkwood bike lanes from Clinton to Lower Muscatine	1.13	Establishes east-west route south of downtown. Connects to Clinton near-term project.
McCollister bike lanes from Gilbert to Sycamore	0.85	Project S3934 - Programmed for 2018-2019. Incorporated into standard arterial design
McCollister sidepath from Gilbert to Sycamore	0.85	Project S3934 - Programmed for 2018-2019. Incorporated into standard arterial design
Sunset bike lanes from Benton to Hwy 1	0.61	Provide north-south corridor in west Iowa City
Lower Muscatine bike lanes	1.0	Complete east-west corridor from south of downtown to Hwy 6.
Church bicycle boulevard	0.6	East-west connector in north Central District
Dover/Westminster bicycle boulevard	1.48	North-south route through east Iowa City. Includes trail segment connecting to Court Hill Trail.
Emerald bicycle boulevard	0.42	Provide north-south route through west Iowa City.



Project	Length	Phasing Notes
1st Ave sidepath from Rochester to Court Hill Trail	1.02	Critical north-south corridor. Addresses gap in existing sidepath network.
Burlington Street Bridge from Madison to Riverside	0.22	Address critical river crossing.
Grand/Byington bike lanes and marked and shared routes	0.44	Increase connectivity between existing bike lanes on Melrose, Iowa River Trail, and downtown Iowa City.
Evans/Muscatine marked and shared route and bike lanes from Market to 1st Ave	1.45	Key arterial corridor. Bike lanes can be striped and signed with no disturbance to pavement.
American Legion sidepath from Scott to Taft	1.08	Project S3854 - Scheduled for completion in 2021
American Legion bike lanes from Scott to Taft	1.08	Project S3854 - Scheduled for completion in 2021
Court Street sidepath segments between Friendship and Taft	0.39	Sidepath infill projects to address gaps in the corridor
Capitol Street shared connecting route	0.15	Short 2-block segment connecting Iowa River Trail, U of I Campus, and Market & Jefferson couplet.
Total miles of Near-Term Projects	24.53	Total Cost for Near-Term Projects: \$2,388,265

## Funding Sources

Funding bikeway projects and bicycle-related programs will require a diverse and creative approach. While Iowa City sets aside a certain amount of annual funding for complete streets projects, external funding sources will be necessary to implement plan recommendations in a timely manner. When possible, this set-aside should be leveraged as local match for external funding in order to maximize the city's return on investment. In addition, Iowa City must be flexible and spontaneous enough to capitalize on partnerships, in-kind matches, and other non-traditional opportunities to implement the plan recommendations. The following section of this chapter provides an overview of funding sources that can be utilized.

## Federal and State Funding Sources

The federal government has numerous programs and funding mechanisms to support bicycle and pedestrian projects, most of which are allocated by the US DOT to state, regional, and local entities. In many cases, state and regional entities administer these funds to local agencies through competitive grant programs. In order to clearly convey the roles and responsibilities of all agencies in the administration and spending of federal transportation funds, the Iowa DOT has created the Guide to Transportation Funding Programs of Interest to Local Governments and Others (2017, revised edition). This guide is an invaluable resource for funding exploration, project development, and procedural compliance.



# Project Phasing Strategy

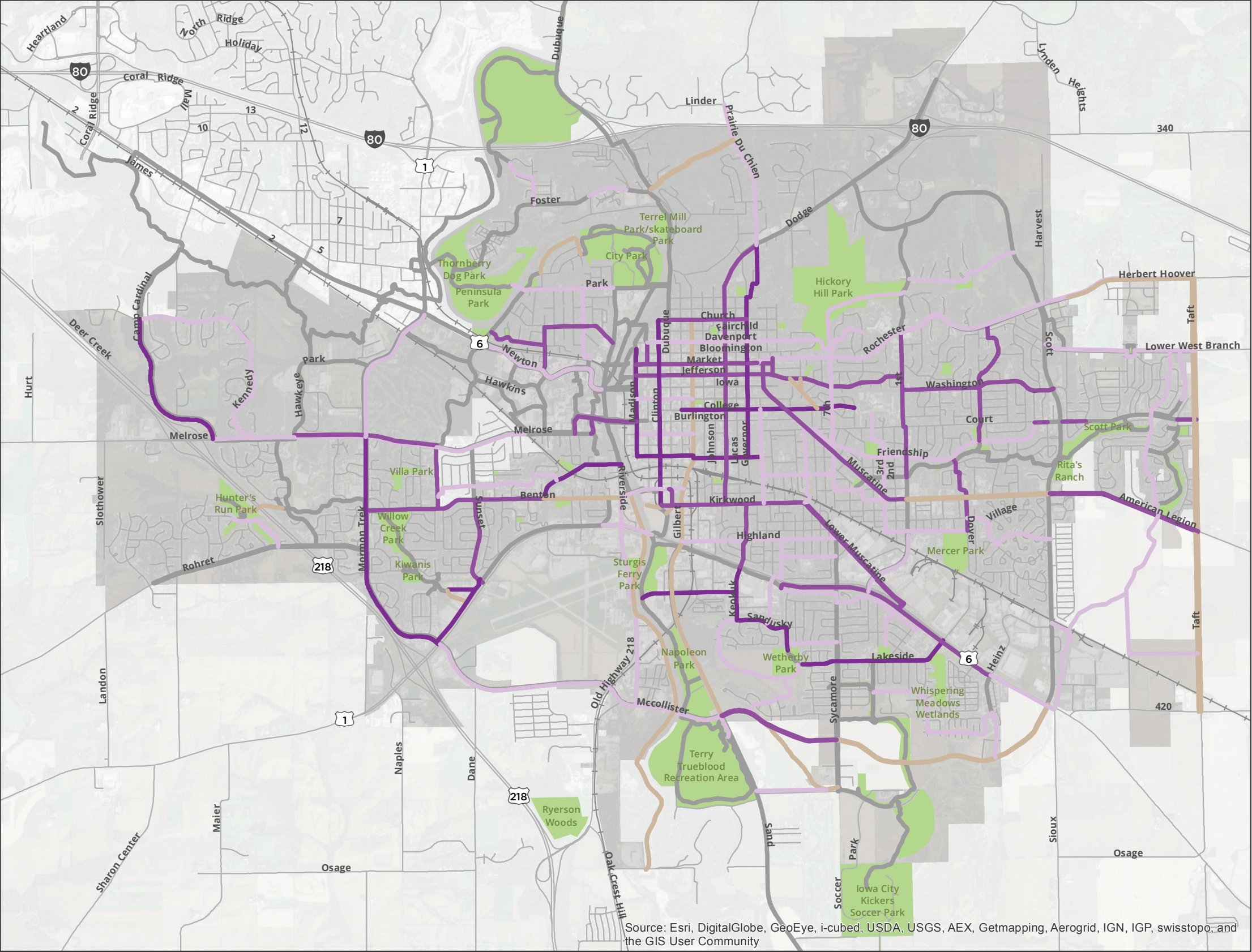
## Legend

### Project Phasing

- Immediate (2017-2018)
- Near (2019-2022)
- Long (2023-2027)
- Unscheduled
- Existing Bikeway

### Other Map Elements

- Interstate
- Principle
- Minor
- Collector
- Local Road
- Railroad
- Park
- Iowa City Boundary



Map 30. Project Phasing Strategy



## Fixing America's Surface Transportation (FAST) Act

In 2015, the FAST Act was signed into law, authorizing \$305 billion in transportation infrastructure planning and investment for a five-year period from 2016-2020. Multiple programs have been carried over from the previous transportation bill, Moving Ahead for Progress in the 21st Century, or MAP-21. Funding for FAST Act programs available to Iowa City is allocated to the MPOJC based on apportionment formulas determined at the federal and state levels. These programs are described below.

### Surface Transportation Block Grant (STBG) Program

The STBG provides funding that may be used by States and localities for projects to preserve and improve the conditions on any Federal-aid highway, bridge and tunnel projects, public road projects, pedestrian and bicycle infrastructure, and transit capital projects. Bicycle and pedestrian infrastructure projects include ADA sidewalk modification, recreational trails, bicycle transportation, on- and off-road trail facilities for non-motorized transportation, and infrastructure projects and systems that will provide safe routes for non-drivers, including children, older adults and individuals with disabilities to access daily needs.

### Transportation Alternatives Program (TAP)

The Transportation Alternatives Program (TAP) was authorized by MAP-21 in 2012 and has been continued by the FAST Act, through federal fiscal year 2020. Eligible project activities for TAP funding include a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, and community improvements such as historic preservation, vegetation management, and some environmental mitigation related to storm water and habitat connectivity. The TAP program replaced multiple pre-MAP-21 programs, including the Transportation Enhancement Program, the Safe Routes to School Program, and the National Scenic Byways Program.

### Iowa Clean Air Attainment Program (ICAAP)/ Congestion Mitigation and Air Quality (CMAQ) Program

This program funds highway/street, transit, bicycle/pedestrian, and other projects or programs which help maintain Iowa's clean air quality by reducing transportation-related emissions. Eligible highway/street projects must be on the federal-aid system, which includes all federal functional class routes except local and rural minor collectors.

- [https://www.fhwa.dot.gov/environment/air\\_quality/cmaq/](https://www.fhwa.dot.gov/environment/air_quality/cmaq/)
- [https://iowadot.gov/systems\\_planning/grant-programs/iowa-clean-air-attainment-program-icaap](https://iowadot.gov/systems_planning/grant-programs/iowa-clean-air-attainment-program-icaap)

### Highway Safety Improvement Program (HSIP)

The Highway Safety Improvement Program (HSIP) is intended to achieve significant reduction in traffic fatalities and serious injuries on all public roads by funding projects, strategies and activities consistent with a state's Strategic Highway Safety Plan (SHSP).

- <https://iowadot.gov/traffic/sections/HSIP>

### Section 402 State and Community Highway Safety Grant Program

Section 402 funds can be used to develop education, enforcement and research programs designed to reduce traffic crashes, deaths, severity of crashes, and property damage. Eligible program areas include reducing impaired driving, reducing speeding, encouraging the use of occupant protection, improving motorcycle safety, and improving bicycle and pedestrian safety. Examples of bicycle and pedestrian safety programs funded by Section 402 are comprehensive school-based pedestrian and bike safety education programs, helmet distribution programs, pedestrian safety programs for older adults, and general community information and awareness programs.

### **TIGER Discretionary Grants Program**

The US Department of Transportation's Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants Program was created as part of the American Recovery and Reinvestment Act of 2009 with the purpose of funding road, rail, transit and port projects that achieve critical national objectives, including livability, economic competitiveness, environmental sustainability, and safety. Forty projects were awarded funding in 2016 for a combined total of nearly \$500M, and fifteen of the forty projects directly benefit bicycling through the provision of dedicated and often protected bicycle facilities. Examples include a \$21M in complete streets projects in Mobile, Alabama, \$22M in bridge reconstruction and rehabilitation in Des Moines, Iowa, and \$40M in roadway reconstruction and multi-modal improvements in Flint, Michigan that will occur in tandem with water transmission line replacement.

- <https://www.transportation.gov/tiger>

### **National Recreational Trails (NRT) Program**

The Iowa DOT maintains and awards federal funding through the National Recreational Trails (NTP) Program. The program was originally established as part of the Inter-modal Surface Transportation Efficiency Act (ISTEA) in 1991 and has been incorporated into all subsequent transportation bills, even if under different titles. Trail projects can include hiking and walking, bicycling, cross-country skiing, snowmobiling, horseback riding, canoeing, and off-highway vehicles.

- [https://iowadot.gov/systems\\_planning/grant-programs/federal-and-state-recreational-trails](https://iowadot.gov/systems_planning/grant-programs/federal-and-state-recreational-trails)

### **State Recreational Trails Program**

Similar in scope and purpose to the NRT Program, the State Recreational Trails Program uses funding collected within the State of Iowa to support local

trail projects. In addition to land acquisition and actual trail construction, other eligible costs include bridge and culvert repair, intersection and crossing improvements, restrooms, trailheads, storm drainage, trail signs, landscaping, and even trail resurfacing and overlays.

- [https://iowadot.gov/systems\\_planning/grant-programs/federal-and-state-recreational-trails](https://iowadot.gov/systems_planning/grant-programs/federal-and-state-recreational-trails)

### **Land and Water Conservation Fund (LWCF)**

The goal of the Land and Water Conservation Fund is the creation and maintenance of high quality recreation resources through the acquisition and development of public outdoor recreation areas and facilities. The program, operated by the Iowa Department of Natural Resources, requires a 50 percent match from the project sponsor. After the funding is awarded and the project is completed, the local agency receives a reimbursement of 50 percent of the actual project costs.

- <http://www.iowadnr.gov/About-DNR/Grants-Other-Funding/Land-Water-Conservation-Fund>

### **Revitalize Iowa's Sound Economy (RISE) Program**

The RISE Program promotes economic development through the establishment, construction, improvement, and maintenance of roads and streets that inject money into the local and state economies and support economic growth. Bicycle projects associated with roadway resurfacing, rehabilitation, modernization, upgrading reconstruction, and initial construction are eligible for funding through the program. Bicycle trails, sidepaths, and wide sidewalks are not eligible for RISE funding except when replacing facilities already in service and affected by or as an integral part of a roadway project.

- [https://iowadot.gov/systems\\_planning/grant-programs/revitalize-iowa-s-sound-economy-rise-program](https://iowadot.gov/systems_planning/grant-programs/revitalize-iowa-s-sound-economy-rise-program)



## Community Attraction & Tourism (CAT)

As part of the IEDA's Enhance Iowa Program, the Community Attraction & Tourism fund assists communities in the development and creation of attraction and tourism facilities, recreational trails, heritage attractions, museums, and recreational centers. Eligible projects include land acquisition, construction, major renovations, site development, and recreational trails. In 2011, Iowa City received \$1.6M in CAT funding for the development of Terry Trueblood Recreation Area.

- <https://www.iowaeconomicdevelopment.com/Enhance>

## Local Funding Sources

While external funding sources for bicycle and pedestrian projects and programs continue to be in short supply and high demand, local funds can often be the most reliable funding source for projects or for development of an encouragement or education program. In addition, local funding is often required as match for external funding sources. With this in mind, it is imperative that Iowa City explore, identify, and pursue one or more of these local funding strategies as a means of implementing the plan.

## Capital Improvement Plan Set-Aside

As with most cities, Iowa City has limited funds with which to implement bicycle projects and programs. The City's current Complete Streets and Traffic Calming set-asides support bicycle-related projects within the larger framework of multi-modal transportation enhancements, but will likely not provide the funds needed to expedite the plan in a timely and impactful manner. By creating a dedicated set-aside in the Capital Improvement Program or increasing the Complete Streets line item, the City can focus, prioritize, and plan for capital expenditures for trails, on-street bikeways, and other projects that improve conditions for bicycling. This set-aside may also be used as a local match for external funding sources, or as contributory towards bicycle elements of larger projects. The City should

also create a dedicated set-aside in the general fund budget for equity-related bicycle programs that target the city's underserved, minority, and low-income residents.

## Local Option Sales Tax

A Local Option Sales Tax is a special-purpose tax implemented and levied at the city or county level. A local option sales tax is often used as a means of raising funds for specific local or area projects, such as improving area streets and roads, or refurbishing a community's downtown area. Special Improvement Districts are often created to define a sales tax area and administer the collection and expenditures of generated tax.

## General Obligation Bond

General obligation bonds offer local agencies the opportunity to acquire necessary finances for capital improvements and remit payment over time. These general obligation bonds are among the most common form of capital project financing and can cover everything from stormwater and sanitary sewers to streets, sidewalks, and trails. General obligation bonds require majority approval of a popular vote for passage.

## Private Funding

### Community Foundations

Community and corporate foundations can play an important role in funding bicycle and pedestrian infrastructure and programs. There is growing evidence highlighting the connection between the built environment and community health outcomes, and health foundations throughout the country have joined environmental foundations to support infrastructure projects that increase opportunities for walking, bicycling and physical activity. National foundations like the Surdna Foundation and the Robert Wood Johnson Foundation have funded initiatives to reduce obesity, increase physical activity, and achieve other positive health-related outcomes. Locally, the Community Foundation of Johnson County has awarded grants to Bicyclists of

Iowa City (2014-2015) for bike rodeo support and to The Children's Charity (2012-2013) for their Bikes for Kids program. In addition to the well-documented health benefits, investments in bicycle facilities and the bicycling economy can generate a significant economic return for the community and its investors.

### **People for Bikes Community Grants Program**

People for Bikes, formerly known as Bikes Belong, is a national organization working to make bicycling better throughout the United States through programs and advocacy work. People for Bikes has funded numerous infrastructure projects and education and encouragement programs since it first launched in 1999, including six projects in the State of Iowa. These include the Iowa Bicycle Coalition's economic impact study of bicycling across the state, paving assistance on the Raccoon River Valley Trail, and trail project in the City of Asbury. While these are small steps to improve bicycling, they are steps in the right direction.

- <http://www.peopleforbikes.org/get-local#state-IA>

### **Private and Corporate Donations**

Private donations and corporate gifts can be accepted by the city to support capital projects and programs. Many individuals and corporations see the value of a bicycle-friendly environment, not just as an asset to the community as a whole, but as an attractive amenity that can support the quality of life for their employees as well.

### **Ongoing Maintenance and Operations**

Bicycle facility maintenance is important to the overall quality and condition of the network and supports safe and comfortable travel. Different facility types require different maintenance activities, from trail sweeping and snow clearance to bike lane restriping and sign replacement. Iowa

City should develop a maintenance schedule and program to delegate maintenance roles and responsibilities, develop funding projections, and provide the budget for long-term sustainability of the system. Maintenance can be separated into two categories: routine maintenance and remedial maintenance.

#### **Routine Maintenance**

Routine maintenance refers to the regularly-scheduled and day-to-day activities to keep the greenways, trails, sidewalks, and on-street bikeways in a functional and orderly condition. These activities, which can be incorporated in normal routine maintenance by operations staff, include trash and debris removal, landscaping, weed and dust control, trail and street sweeping, snow removal, shoulder mowing, and tree and shrub trimming. Spot maintenance such as sealing cracks, spot replacement of small sections of sidewalk, filling potholes, and replacing damaged or worn signs also fall under this category.

#### **Remedial Maintenance**

Remedial maintenance refers to the correcting of significant facility defects and the repairing, replacing and restoring of major facility components. Remedial maintenance activities include periodic repairs like crack sealing or micro surfacing asphalt pavement; restriping of bike lanes; replacement of wayfinding and other signs; repainting, replacement of trail amenities and furnishings (benches, bike racks, lighting, etc.); and more substantial projects like hillside stabilization, bridge replacement, trail or street surface repaving; and trail repairs due to washout and flooding. Pavement markings and striping maintenance will depend on anticipated and actual product lifecycle, which can range from one to ten years, depending on material type. Minor remedial maintenance for trails and greenways can be completed on a five to ten-year cycle, while larger projects should be budgeted on an as-needed or anticipated basis.



### Maintenance Cost Estimates

Maintenance costs vary depending on the quality and durability of materials, expected lifecycle, use and wear, climate, weather, and other external factors. Conservative planning-level maintenance cost estimates are provided below in Table 11 to assist in the development of maintenance budgets and resource allocation. These are conservative estimates based upon the best information available at the time of this plan. They should be used as a guide for allocation of resources and should be refined as Iowa City gains more experience with maintaining various types of bicycle facilities. These costs do not include time and staff. As the city's bikeway network continues to expand, Iowa City should plan to devote additional time and staff labor to support maintenance of trails and on-street facilities.

### Network Stewardship and Enhancement

An important element of on-going maintenance activities is stewardship, which refers to the long-term care and oversight of Iowa City's active transportation network as a resource that adds value to the community and enhances the quality

of life for citizens of the region. The trail and bicycle network will require active stewardship by those who operate the facilities (and those who benefit from it) to ensure this valuable recreation and transportation infrastructure can provide a high level of service and a quality user experience for Iowa City residents and visitors. This will require coordination among all agencies involved in the care and maintenance of the trails, bikeways, sidewalks, and their surroundings; protection of these resources from external factors that may reduce their value and utility; and encouragement of community participation in the upkeep and enhancement of the network as a valuable community asset. Community participation through Adopt-A-Trail and Adopt-A-Street programs, annual trash cleanup events, and educational programming activities along trails and greenways can heighten community awareness of bicycling facilities as valuable community assets. Bicyclists of Iowa City, Think Bicycles of Johnson County, the Johnson County Public Health, and other local agencies and organizations have overlapping missions and audiences likely to engage in stewardship activities.

**Table 11. Planning-level maintenance costs**

Facility Type	Annualized Cost Per Mile	Typical Maintenance Tasks
Shared-Use Path	\$10,000	Sweeping, trash removal, mowing, weed abatement, snow removal, crack seal, sign repair.
Sidepath	\$2,500	Sweeping, trash removal, mowing, weed abatement, snow removal, crack seal, sign repair.
Separated/Protected Bike Lanes	\$4,000	Debris removal/sweeping, repainting stripes and stencils, sign replacement, replacing damaged barriers.
Bike Lane/Advisory Bike Lane	\$2,500	Repainting stripes and stencils, debris removal/sweeping, snow removal, signage replacement as needed.
Bicycle Boulevard	\$1,500	Sign and shared lane marking stencil replacement as needed.
Shared Connecting Route	\$1,000	Sign and shared lane marking stencil replacement as needed.

## Plan Monitoring and Evaluation

It will be critical to periodically monitor and evaluate implementation efforts to document trends and outcomes, identify implementation strengths and weaknesses, and realign annual action plans to maximize the benefit of Iowa City's investment in plan-related projects and programs. Programs like annual bicycle counts, bicycle-related crash analyses, and an annual implementation report card, all of which are described in the previous chapter, will highlight efforts in Iowa City to support bicycling and shed light on areas in need of improvement. Additional metrics relating to the LAB's Building Blocks of a BFC and to the plan's goals and objectives will help Iowa City and its community partners determine the impact of the expanding bicycle network and bicycle-related programming. Baseline data for many of these metrics will be collected as the city applied for BFC designation in August 2017. The table below provides a list of performance measures and associated Gold-Level BFC Targets. Reaching all targets identified below is not necessary to achieve Gold; there is flexibility with the rating system, with importance given to key outcomes supported by a diverse and comprehensive approach.

Additional performance measures that will be useful for implementation evaluation purposes but not essential to achieving Gold include:

- Bicycle counts collected through an annual bicycle count program
- Miles of low-stress bikeways, total and as a percentage of all bikeways
- Network coverage: land area, population, and underserved populations within 1/2 mile of a bicycle facility
- Number of education and encouragement programs, classes, rides, and events
- Number of Bicycle Friendly Businesses
- Number, type, and distribution of bicycle parking facilities/spaces
- Number of bicycle parking facilities/spaces at transit stops and centers
- Percentage of bikeway miles annually inspected for maintenance needs
- Percentage of bikeway miles improved through maintenance activities (striping, pothole filling, etc.)



**Table 12. Implementation performance measures**

Performance Measures	LAB Gold-Level Target
Key Outcomes	
Ridership: people commuting by bicycle	5.5%
Crashes per 10k daily commuters	100
Fatalities per 10k daily commuters	0.6
Engineering	
Bike access to public transportation	Very good
Total bicycle network mileage to total road mileage	30%
Arterial streets with bike lanes	65%
Education	
Public education outreach	Very good
Annual offering of adult bicycling skills classes	At least two
Percent of primary and secondary schools offering bicycle education	50%
Encouragement	
Active bike clubs & signature events	Yes
Bike month and bike to work events	Very good
Active bicycle advisory committee	Yes
Active advocacy group	Yes
Recreational facilities like bike parks and velodromes	Very likely
Enforcement	
Law enforcement/bicycling liaison	yes
Bicycle-friendly laws/ordinances in place	yes
Evaluation	
Bike program staff per population	1 staff person per 32,000
Bike plan is current and being implemented	yes







# APPENDIX A

## BFC Feedback Report





**BICYCLE FRIENDLY  
COMMUNITY**

# BICYCLE FRIENDLY COMMUNITY FEEDBACK REPORT

Spring 2013



Photo: Trek

Iowa City, IA



The League of American Bicyclists has designated **Iowa City** as a Bicycle Friendly Community at the **Silver** level, because Iowa City exhibits a strong commitment to cycling. The reviewers felt that notable steps are being taken to address the needs of current bicyclists and to encourage other residents to become regular cyclists as well.

Particular **highlights** were the Think Bicycles Coalition, the large shared-use path network, the Light the Night Program, the thriving local bicycle culture, and Bike to Work Week.

Reviewers were very pleased to see the current efforts and dedication to make Iowa City a great place for cyclists.

Below, reviewers provided key recommendations to further promote bicycling in Iowa City and a menu of additional pro-cycling measures that can be implemented in the short and long term. We strongly encourage you to use this feedback to build on your momentum and improve your community for bicyclists. There may also be initiatives, programs, and facilities that are not mentioned here that would benefit your bicycling culture, so please continue to try new things to increase your ridership, safety, and awareness!

To learn more about what funds are available for bicycle projects, use Advocacy Advance's interactive [Find it. Fund it tool](#) to search for eligible **funding** programs by bike/ped project type or review the same information as a PDF [here](#).

## The key measures Iowa City should take to improve cycling:

- Have your Bicycle Advisory Committee meet monthly to build public support for bicycle improvements and to support the implementation of the recommendations below.
- Since arterial and collector roads are the backbone of every transportation network, it is essential to provide designated bicycle facilities along these roads and calm traffic speeds to allow bicyclists of all skill levels to reach their destinations quickly and safely. Particularly Gilbert Street and Burlington Street are in need of safe and comfortable bicycle facilities, especially the Burlington Street bridge. On roads with posted speed limits of more than 35 mph, it is recommended to provide protected bicycle infrastructure, such as [cycle tracks](#) or [buffered bike lanes](#).
- It is essential to make both motorists and cyclists aware of their rights and responsibilities on the road. Continue to expand your public education campaign promoting the share the road message. Take advantage of your local bicycle groups for content development and manpower. See the excellent "[Look](#)" campaign in New York City or the "[Don't be a Road Hog](#)" campaign in Colorado.
- Ask police officers to use targeted information and enforcement to encourage motorists and cyclists to

# Benefits of Further Improving Iowa City for Cycling

share the road safely. This could be in the form of a brochure or tip card explaining each user's rights and responsibilities. Have information material available in Spanish, if applicable.

- Continue to encourage the University of Iowa to promote cycling and to educate students on safe cycling practices. Many colleges and universities have embraced the growing enthusiasm for more bicycle-friendly campuses by incorporating bike share programs, bike co-ops, bicycling education classes and policies to promote bicycling as a preferred means of transportation. The community could potentially profit as well: Communities near a Bicycle Friendly University such as Stanford or University of California at Davis have a very high number of regular bicyclists (as many students bike to campus, shops and restaurants), less congestion around campus, safer streets and university-hosted public bicycle events, programs and classes.

- Invite a police officer to become an active member of the Bicycle Advisory Committee and appoint a law-enforcement point person to interact with the cyclists. This will actively facilitate stronger connections between bicycle advocates, the wider bicycling community and law enforcement, which will improve road safety for all users, and improve fair enforcement of motorist and cyclist infractions.

Further increasing bicycle use can improve the environment by reducing the impact on residents of pollution and noise, limiting greenhouse gases, and improving the quality of public spaces; **Reduce congestion** by shifting short trips (the majority of trips in cities) out of cars. This will also make cities more accessible for public transport, walking, essential car travel, emergency services, and deliveries; **Save lives** by creating safer conditions for bicyclists and as a direct consequence improve the safety of all other road users. Research shows that increasing the number of bicyclists on the street improves bicycle safety; **Increase opportunities** for residents of all ages to participate socially and economically in the community, regardless of income or ability.

Greater choice of travel modes also increases independence, especially among seniors and children; **Boost the economy** by creating a community that is an attractive destination for new residents, tourists and businesses; **Enhance recreational opportunities**, especially for children, and further contribute to the quality of life in the community; **Save city funds** by increasing the efficient use of public space, reducing the need for costly new road infrastructure, preventing crashes, improving the health of the community, and increasing the use of public transport; **Enhance public safety and security** by increasing the number of “eyes on the street” and providing more options for movement in the event of emergencies, natural disasters, and major public events; **Improve the health and well being** of the population by promoting routine physical activity.



## Menu of additional recommendations to further promote bicycling:

### Engineering

#### Low hanging fruit and fast results

- Develop and implement streetscape design guidelines that foster a pleasant and comfortable environment for pedestrians and cyclists. Beautiful streetscaping has also shown to increase community livability and pride, reduce crime and increase property values.
- Offer more [ongoing training](#) opportunities on accommodating bicyclists for engineering and planning staff.
- Consider passing an ordinance or policy that would require larger employers to provide shower facilities and other end-of-trip amenities.
- Increase the amount of [high quality bicycle parking](#) at popular destinations such as major transit stops. Also consider adding some [artistic bike racks](#) to enhance the sense of place of your community.
- Paint a center stripe on popular shared-use paths to mitigate conflicts between pedestrians and cyclists.

- Join NACTO and participate in the Cities for Cycling project. Cities for Cycling aims to catalog, promote and implement the world's best bicycle transportation practices in American municipalities.

#### Long Term Goals

- Consider a form-based code to allow for flexible land uses and to provide a comfortable and convenient built environment for pedestrians and cyclists.
- Develop solutions to physical barriers in order to provide convenient bicycle access to all parts of the community.
- Continue to expand the bike network and to increase network connectivity through the use of different types of [bike lanes](#), [cycle tracks](#) and [shared lane arrows](#). On-street improvements coupled with the expansion of the off-street system [will encourage more people to cycle](#) and will improve safety. Ensure smooth transitions for bicyclists between the trail network and the street network. These improvements will also increase the effectiveness of encouragement efforts by providing a broader range of facility choices for users of various abilities and comfort levels.
- Ensure that all bicycle facilities conform to current best practices and guidelines – such as the [NACTO Urban Bikeway Design Guide](#), 2012 [AASHTO Guide for the](#)

[Development of Bicycle Facilities](#) and your DOT's own guidelines.

- Develop a system of bicycle boulevards, utilizing quiet neighborhood streets, that creates an attractive, convenient, and comfortable cycling environment welcoming to cyclists of all ages and skill levels. Learn how to do it at <http://www.ibpi.usp.pdx.edu/guidebook.php>. Use the [Bicycle Boulevards](#) section of the NACTO Urban Bikeway Design Guide for design guidelines.

- Make intersections safer and more comfortable for cyclists. Include elements such as color, signage, medians, signal detection, and pavement markings. The level of treatment required for bicyclists at an intersection will depend on the bicycle facility type used, whether bicycle facilities are intersecting, the adjacent street function and land use. See the [NACTO design guidelines](#) and the 2012 [AASHTO Guide for the Development of Bicycle Facilities](#) for recommended intersection treatments.

## **Education**

Low hanging fruit and fast results

- Consider creating a Bicycle Ambassador program. Have Ambassadors attend community and private events year-round to talk to residents and visitors of all ages about bicycling and to give bicycle safety

demonstrations. They can also offer bike commuting presentations for area businesses.

- Offer Cycling Skills classes, Traffic Skills 101 classes and bike commuter classes frequently or encourage a local bicycle advocacy group or shop to do so. Ideally, the instruction should incorporate a classroom portion as well as on-road training. The classroom portion of Traffic Skills 101 is now available [online](#) as well. For more information visit: [www.bikeleague.org/programs/education/](http://www.bikeleague.org/programs/education/)

- Host a Traffic Skills 101 or bike commuter course for engineers and planners to better understand cyclists' needs. For more information visit:

[www.bikeleague.org/programs/education/](http://www.bikeleague.org/programs/education/)

## **Long Term Goals**

- Bicycle-safety education should be a routine part of public education, and schools and the surrounding neighborhoods should be particularly safe and convenient for biking. Work with your Bicycle Advisory Committee, local bicycle groups or interested parents to develop and implement a Safe Routes to School or equivalent program that emphasize bicycling for all middle schools, and expand the existing programs to all elementary schools and high schools. For more information, see the [National Highway Traffic Safety Administration's Safe Routes To School Toolkit](#) or visit [www.saferoutesinfo.org](http://www.saferoutesinfo.org).



- Start a bicyclist ticket diversion program. Road users given a citation are offered an opportunity to waive fees for violations by attending a bicycling education course. This course should include a classroom and on-road component. See what [Pima County](#) and [San Diego County](#) have done.
- Expand the education program for professional drivers to include City staff, taxi cab drivers and school bus operators. See San Francisco's [Frequent Driver Education](#).
- Increase your efforts to ensure your bicycle education programs reach traditionally underserved populations, particularly seniors, women, minorities, adult non-English speakers and the disabled.

## **Encouragement**

Low hanging fruit and fast results

- Host, sponsor and/or encourage a greater variety of social and family-friendly bicycle-themed community events year-round, such as a bike movie festival, a 4<sup>th</sup> of July bike parade, an "increase-your-appetite" Thanksgiving community ride, a dress-like-Santa community ride before Christmas, a Halloween bike decoration competition, a bike to the arts event, etc. Work closely with local bicycle groups, bike shops and schools. Provide appropriate safety measures such as road closures or police escorts.

- Consider offering a 'Summer Streets' type event, closing off a major corridor to auto traffic and offering the space to cyclists, pedestrians and group exercise events.
- Encourage more local public agencies, businesses and organizations to promote cycling to the workplace and to seek recognition through the free [Bicycle Friendly Business program](#). Businesses will profit from a [healthier, happier and more productive workforce](#) while the community would profit from less congestion, better air quality, public bike parking in prime locations provided by businesses, new and powerful partners in advocating for bike infrastructure and programs on the local, state and federal level, and business-sponsored public bike events or classes. Your community's government should be the model employer for the rest of the community.

Long Term Goals

- Recreational bicycling can be promoted through bicycle amenities such as a mountain bike park, a cyclocross course or a pump track. Ensure that the facilities are accessible by bicycle, so that there is no need to drive to ride.
- Develop a series of short (2-5 mi.) (themed) loop rides around the community and provide appropriate way-finding signage. Integrate these rides into local bike maps.

- Consider launching a bike share system that is open to the public. Bike sharing is a convenient, cost effective, and healthy way of encouraging locals and visitors to make short trips by bike and to bridge the “last mile” between public transit and destinations. See what is being done across the country at <http://nacto.org/bikeshare/>

## **Enforcement**

Low hanging fruit and fast results

- Have police officers distribute helmets and bike locks (or coupons to the local bike shop for each item) in addition to lights to encourage all types of cyclists to ride more safely, discourage bike theft and remove the barriers to attaining these essential bike accessories.
- Ask police officers to target both motorist and cyclist infractions to ensure that laws are being followed by all road users. Ensure that bicycle/car crashes are investigated thoroughly and that citations are given fairly.
- Enforcement practices could also include positive enforcement ticketing. Police officers could team up with local stores to reward safe cycling practices by handing out gift certificates to cyclists who are “caught” following the law.

- Increase the number of officers that patrol streets on bikes, as it gives officers a better understanding of the conditions for cyclists. Also ensure that secluded off road paths are regularly patrolled to improve personal safety and encourage more people to take advantage of this amenity.
- Pass more laws that protect cyclists, e.g., implement penalties for motor vehicle users that ‘door’ cyclists, ban cell phone use while driving, specifically protect all vulnerable road users, and formalize a legal passing distance of 3 feet.

## **Evaluation/Planning**

Low hanging fruit and fast results

- Ensure that there is dedicated funding for the implementation of the bicycle master plan.
- Routinely conduct pre/post evaluations of bicycle-related projects that study the change in use, car speed and crash numbers. This data will be valuable to build public and political support for future bicycle-related projects.
- Adopt a target level of bicycle use (e.g. percent of trips) to be achieved within a specific timeframe, and ensure data collection necessary to monitor progress.



- Expand efforts to evaluate bicycle crash statistics and produce a specific plan to reduce the number of crashes in the community. Available tools include [\*Intersection Magic\*](#) and the [\*Pedestrian and Bicyclist Crash Analysis Tool\*](#). See the report [\*Bicyclist Fatalities and Serious Injuries in New York City 1996-2005\*](#)

- Consider measuring the Bicycle Level of Service (BLOS) on community roads and at intersections, to be able to identify the most appropriate routes for inclusion in the community bicycle network, determine weak links and hazards, prioritize sites needing improvement, and evaluate alternate treatments for improving bike-friendliness of a roadway or intersection: <http://www.bikelib.org/bike-planning/bicycle-level-of-service/> (roads) and <http://www.bicyclinginfo.org/library/details.cfm?id=4425> (intersections).

- Consider individualized marketing to identify and support current and potential bike commuters in your community. See what Bellingham, WA is doing: [www.whatcomsmartrips.org](http://www.whatcomsmartrips.org)
- Consider conducting an economic impact study on bicycling in your community. [Read about](#) what Portland, OR has done.
- Establish a mechanism that ensures that bicycle facilities and programs are implemented in traditionally underserved neighborhoods.

**For more ideas and best practices please visit the [Bicycle Friendly Community Resource Page](#).**







## **APPENDIX B**

# **Prioritization and Cost Estimates**





**Table 1. Corridor Prioritization**

Corridor	Priority Level	Priority Score	Gap Closure	Safety	Demographic Equity	Connections to Existing Facilities	Nearby Parks and Schools	All-Ages Facility
Gilbert Corridor	High	90	25	25	15	12	8	5
Central Corridor	High	89	25	25	12	12	9	6
Campus / Melrose Corridor	High	86	17	25	15	15	6	8
Hwy 6 Corridor	High	78	25	15	9	12	7	10
Clinton Corridor	High	73	17	20	15	12	5	4
College Corridor	High	72	25	15	12	6	6	8
Governor Corridor	High	66	17	10	15	12	6	6
Iowa River Trail Corridor	High	65	0	15	15	15	10	10
Mormon Trek Corridor	High	64	8	15	12	15	6	8
1st Avenue Corridor	High	62	25	5	6	9	9	8
Madison Corridor	High	61	17	20	6	12	2	4
Hwy 1 Sidepath	High	60	25	10	6	6	5	8
Muscatine Corridor	High	58	17	15	6	6	10	4
Dodge Corridor	High	57	17	0	15	12	7	6
Kirkwood Corridor	Medium	57	25	5	6	9	8	4
Greenwood/Myrtle Corridor	Medium	57	17	15	6	9	6	4
Melrose Sidepath	Medium	56	17	10	9	9	3	8
Hollywood Corridor	Medium	55	17	10	9	6	5	8
Benton Corridor	Medium	54	17	15	3	9	4	6
South Crosstown Corridor	Medium	54	8	10	15	6	7	8
Washington Bikeway	Medium	54	17	15	9	6	1	6
McCollister Corridor	Medium	52	25	0	3	12	4	8
Westminster / Dover Corridor	Medium	52	17	10	3	9	5	8
Wetherby Corridor	Medium	50	8	10	9	9	6	8



Corridor	Priority Level	Priority Score	Gap Closure	Safety	Demographic Equity	Connections to Existing Facilities	Nearby Parks and Schools	All-Ages Facility
Willow Creek Trail Corridor	Medium	50	8	10	9	9	4	10
Church Corridor	Medium	49	17	5	9	6	4	8
Riverside Drive Sidepath	Medium	49	17	10	3	6	5	8
East Court Sidepath	Medium	48	17	10	3	6	4	8
Davenport Corridor	Medium	47	8	10	9	6	6	8
Normandy Sidepath	Medium	46	25	0	3	6	4	8
Court Corridor	Medium	44	8	10	12	3	3	8
Rochester Corridor	Medium	41	17	0	6	6	8	4
Huntington Trail Extension	Medium	39	17	0	3	6	3	10
Ridgewood / Friendship Corridor	Medium	38	8	5	6	3	8	8
Windsor Ridge Trail Extension	Medium	37	17	0	3	6	1	10
Sunset Corridor	Medium	36	17	0	6	6	3	4
7th Avenue Corridor	Low	35	8	10	3	0	6	8
Court Hill Trail	Low	35	0	5	3	9	8	10
River to River Corridor	Low	35	8	0	6	9	4	8
Gilbert Sidepath	Low	34	17	0	0	6	3	8
Foster Sidepath	Low	33	17	0	0	6	2	8
Newton Road Corridor	Low	33	8	5	3	9	3	5
Rohret Corridor	Low	33	8	0	12	6	3	4
Iowa River Trail West Extension, Phase 1	Low	31	8	0	3	6	4	10
Clear Creek Trail	Low	30	0	0	6	12	2	10
Emerald Corridor	Low	30	8	5	3	3	3	8
Ridge / Broadway Corridor	Low	30	8	0	9	3	2	8
Southeast Corridor	Low	30	8	0	3	6	5	8
Highland Corridor	Low	29	8	5	0	3	5	8

Corridor	Priority Level	Priority Score	Gap Closure	Safety	Demographic Equity	Connections to Existing Facilities	Nearby Parks and Schools	All-Ages Facility
Summit Corridor	Low	29	8	0	6	3	4	8
Arlington Corridor	Low	28	8	0	3	6	3	8
Park Road Corridor	Low	28	8	0	3	9	4	4
Taft Corridor	Low	28	8	0	3	6	3	8
Orchard Sidepath	Low	27	0	10	3	3	3	8
Foster Corridor	Low	26	8	0	6	3	1	8
Hickory Hill Corridor	Low	26	8	0	0	6	4	8
Camp Cardinal Corridor	Low	25	8	0	6	6	1	4
Sycamore - Sand Connector	Low	23	8	0	0	6	1	8
Oakcrest Corridor	Low	22	0	0	6	3	5	8
Whispering Meadow / Pinto Connector Route	Low	22	8	0	6	6	2	0
Kennedy Neighborhood Connector	Low	21	8	0	6	6	1	0
Prairie Du Chien Corridor Corridor	Low	21	8	0	6	6	1	0
Keokuk Corridor	Low	20	8	0	0	3	5	4
McCollister to Sycamore Greenway Trail	Low	19	0	0	0	6	3	10
Duck Creek Neighborhood Connector	Low	18	8	0	6	3	1	0
Iowa River Trail West Extension, Phase 2	Low	18	0	0	0	6	2	10
College - Jefferson Link	Low	17	0	0	3	0	4	10
3rd Avenue Corridor	Low	16	0	0	0	3	5	8
Mackinaw / Manitou Neighborhood Connector	Low	15	8	0	0	6	1	0
Union / Fairmeadows Neighborhood Connector	Low	15	0	5	6	0	4	0
Windsor Ridge Trail	Low	15	0	0	3	0	2	10
Lower West Branch Corridor	Low	15	0	0	3	6	2	4



Corridor	Priority Level	Priority Score	Gap Closure	Safety	Demographic Equity	Connections to Existing Facilities	Nearby Parks and Schools	All-Ages Facility
Burns Neighborhood Connector	Low	14	0	0	9	3	2	0
Wetherby Park Trail Extension	Low	14	0	0	0	0	4	10
Heinz Corridor	Low	12	0	0	0	3	1	8
Capitol Neighborhood Connector	Low	10	0	0	6	3	1	0
Longfellow Neighborhood Connector	Low	7	0	0	3	0	4	0
Sandusky Neighborhood Connector	Low	7	0	0	0	0	3	4
Covered Wagon Neighborhood Connector	Low	6	0	0	0	3	3	0
Ferson Neighborhood Connector	Low	5	0	0	3	0	2	0
Deforest Neighborhood Connector	Low	3	0	0	0	0	3	0

**Table 2. Principal Bikeway Cost Estimates and Phasing**

Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>Benton Corridor</b>					
Myrtle Bicycle Boulevard	Riverside to Greenwood		0.25	\$20,180	Imm.
Greenwood Bicycle Boulevard	Myrtle to Benton		0.39	\$31,225	Imm.
Benton Bike Lanes	Greenwood to Sunset		0.47	\$44,019	Near
Benton Bike Lanes	Sunset to Mormon Trek		0.77	\$71,858	Near
<b>Benton Crossing Corridor</b>					
Benton Bike Lanes	Orchard to Greenwood	Widen road with new construction to meet city street standards	0.46		Unsch.
Benton Bike Lane (One Way)	Gilbert to Dubuque		0.08	\$4,386	Long
Benton Bike Lane (One Way)	Dubuque to Clinton		0.08	\$8,333	Long
Benton Bike Lanes	Clinton to Capitol		0.08	\$12,212	Long
Benton Bike Lanes	Capitol to Riverside		0.21	\$22,229	Long
Benton Bike Lane (One Way)	Riverside to Orchard	Widen road with new construction to meet city street standards	0.07		Unsch.
<b>Camp Cardinal Corridor</b>					
Camp Cardinal Bike Lanes	Melrose to Kennedy	Wide shoulders in place. Add markings and signs.	1.11	\$19,036	Imm.
<b>Campus / Melrose Corridor</b>					
Burlington Cycle Track	Madison to Iowa River Bridge		0.10	\$142,026	Near
Burlington St Bridge Buffered Bike Lanes	East end of bridge to Riverside Drive	Road diet, remove outermost lanes	0.12	\$18,329	Near
Grand Climbing Lane	Riverside to Roundabout	Lane diet for WB climbing lane	0.19	\$10,598	Near
Byington Bike Lane (One Way)	Grand to Melrose	Lane diet on one-way road	0.12	\$6,445	Near
Grand Shared Connecting Route	Melrose to Roundabout		0.13	\$2,163	Near
Melrose Bike Lanes	Olive to Sunset		0.37	\$34,805	Long
Melrose Bike Lanes	Sunset to Emerald		0.26	\$24,014	Long



Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
Melrose Bike Lanes	Emerald to Hawkeye Park Rd	Lane diet	0.99	\$149,839	Long
Melrose Bike Lanes	Hawkeye Park Rd to Camp Cardinal		0.56	\$52,431	Long
<b>Central Corridor</b>					
Market Bike Lanes	Clapp to Union		0.11	\$9,789	Near
Clapp Shared Connecting Route	Rochester to Jefferson		0.13	\$2,162	Near
Jefferson Buffered Bike Lane (One Way)	Clinton to Madison		0.16	\$9,673	Near
Jefferson Buffered Bike Lane (One Way)	Clapp to Madison		0.75	\$45,300	Near
Market Buffered Bike Lane (One Way)	Clapp to Governor		0.07	\$4,247	Near
Market Buffered Bike Lane (One Way)	Governor to Gilbert		0.38	\$23,008	Near
Market Buffered Bike Lane (One Way)	Gilbert to Madison		0.39	\$23,572	Near
Jefferson / Glendale / Heather path Bicycle Boulevard	Hwy 1 to Clapp	Right-of-way likely required for Heather path	0.97	\$77,897	Near
Washington Bicycle Boulevard	Scott to Hwy 1		1.07	\$86,112	Near
<b>Clinton Corridor</b>					
Clinton Bike Lanes	Benton to Kirkwood	Programmed with road diet	0.11		Imm.
Clinton Bike Lanes	Church to Jefferson	Programmed with road diet	0.39		Imm.
Clinton Bike Lanes	Jefferson to Burlington	Programmed with road diet	0.32		Imm.
Clinton Bike Lanes	Burlington to Court	Programmed with road diet	0.09		Imm.
Clinton Bike Lanes	Church to Harrison	Programmed with road diet	0.08		Imm.
Clinton Bike Lanes	Harrison to RR S/O Wright	Programmed with road diet	0.15		Imm.
Clinton Bike Lanes	RR to Benton	Programmed with road diet, parking removal required	0.15		Imm.

Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>Dodge Corridor</b>					
Dodge Buffered Bike Lane (One Way)	Summit to Burlington		1.30	\$78,546	Near
Dodge Bike Lanes	Burlington to Bowery	Parking removal required	0.26	\$27,067	Near
Dodge Bike Lanes	Bowery to Kirkwood	Road diet	0.32	\$48,993	Near
<b>Foster Corridor</b>					
Foster Bike Lanes	Prairie Du Chien to Dubuque	New road to city standards	0.67		Unsch.
<b>Governor Corridor</b>					
Governor Bike Lanes	Burlington to Bowery	Programmed project, parking removal required	0.26		Imm.
Governor Buffered Bike Lane (One Way)	Brown to Burlington	Programmed project	0.85		Imm.
Dewey / Summit / Brown Bicycle Boulevard	Dodge to Dodge		0.42	\$33,716	Imm.
<b>Keokuk Corridor</b>					
Keokuk Bike Lanes	Kirkwood to Highland	Parking removal required	0.24	\$22,742	Near
Keokuk Shared Connecting Route	Highland to Hwy 6		0.20	\$3,408	Near
Keokuk Bike Lanes	Hwy 6 to Sandusky		0.37	\$56,730	Imm.
<b>Kirkwood / Lower Muscatine Corridor</b>					
Dubuque Shared Connecting Route	Benton to Kirkwood		0.14	\$2,475	Near
Lower Muscatine Shared Connecting Route	Fairmeadows to 1st Ave		0.31	\$5,363	Near
Kirkwood Bike Lanes	Dubuque to Clinton	Road diet	0.08	\$11,424	Near
Kirkwood Bike Lanes	Lower Muscatine to Clinton		0.91	\$84,302	Near
Lower Muscatine Bike Lanes	Sycamore to Kirkwood		0.26	\$24,180	Near
Lower Muscatine Bike Lanes	1st Ave to Friendly	Lane diet	0.45	\$47,172	Near
<b>Longfellow Underpass</b>					
Court / Grant / Longfellow Shared Connecting Route	Ridgewood to Railroad Underpass Trail		0.52	\$8,918	Long



Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
Longfellow Tunnel Trail Shared Use Path	Longfellow to Lower Muscatine	Improvements to visibililty and wayfinding	0.10	\$113,240	Long
<b>Madison Corridor</b>					
Madison Bike Lanes	Iowa River Trail to Market		0.11	\$34,074	Imm.
Madison Bike Lanes	Market to Court	Programmed project	0.48		Imm.
Madison Bike Lanes	Court to Prentiss		0.15	\$14,114	Imm.
<b>McCollister Corridor</b>					
McCollister Protected Bike Lanes	Gilbert to Sycamore	New road to city standards	0.85		Near
McCollister Protected Bike Lanes	Hwy 6 to Gilbert	New road to city standards	1.68		Unsch.
McCollister Bike Lanes	Gilbert to Old Highway 218	Lane diet	0.85	\$90,390	Long
<b>Mormon Trek Corridor</b>					
Mormon Trek Bike Lanes	Melrose to Hwy 1	Road diet	1.72		Imm.
Mormon Trek Bike Lanes	Hwy 1 to Old Highway 218	Lane diet	1.31	\$139,070	Long
Mormon Trek Bike Lanes	Hwy 6 to Melrose	Lane diet	1.02	\$155,496	Long
<b>Muscatine Corridor</b>					
Evans Shared Connecting Route	Iowa to Market		0.16	\$2,668	Near
Muscatine Bike Lanes	1st Ave to Iowa		1.29	\$120,413	Near
Muscatine Bike Lanes	Scott to 1st Ave		0.58	\$53,637	Unsch.
Muscatine Bike Lanes	Scott to 1st Ave	Widen road with new construction to meet city street standards	0.41		Unsch.
American Legion Bike Lanes	Taft to Scott	Widen road with new construction to meet city street standards	1.07		Near

Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>Park Road Corridor</b>					
Park Road Bike Lanes	Rocky Short to Riverside	Widen road with new construction to meet city street standards	0.61		Long
Iowa River Trail Bridge Shared Use Path	Park / Rocky Shore to Peninsula Park		0.10	\$110,229	Long
<b>Rochester Corridor</b>					
Prairie Du Chien Shared Connecting Route	Linder to Dodge		1.02	\$17,387	Long
<b>Rochester Corridor</b>					
Rochester Bike Lanes	1st Ave to Mt Vernon	Widen road with new construction to meet city street standards	0.39		Long
Rochester Bike Lanes	Mt Vernon to Scott		0.65	\$60,532.10	Long
Rochester Bike Lanes	Rochester Ct to Market	Widen road with new construction to meet city street standards	0.56		Long
Rochester Bike Lanes	1st Ave to Rochester Ct	Widen road with new construction to meet city street standards	0.51		Long
Herbert Hoover Bike Lanes	Scott to Taft	Widen road with new construction to meet city street standards	1.10		Long
<b>Rohret Road Corridor</b>					
Rohret Bike Lanes	Lake Shore to Kansas	Widen road with new construction to meet city street standards	2.10		Unsch.
<b>Taft Corridor</b>					
Taft Bike Lanes	Herbert Hoover to 420	Widen road with new construction to meet city street standards	3.00		Unsch.

Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>Washington Corridor</b>					
Washington Cycle Track	Gilbert to Madison		0.39	\$582,490	Long
<b>Wetherby Bicycle Boulevard Corridor</b>					
Southgate - Iowa River Trail Connector Shared Use Path	Gilbert to Iowa River Trail		0.21	\$241,562	Imm.
Southgate Bike Lanes	Keokuk to Gilbert		0.44	\$41,413	Imm.
Sandusky / Taylor Bicycle Boulevard	Burns to Keokuk		0.52	\$42,100	Imm.
Wetherby Bicycle Boulevard	Hwy 6 to Wetherby Park Trail		0.24	\$19,457	Imm.
Lakeside Bicycle Boulevard	Hwy 6 to Wetherby Park Trail		0.80	\$64,122	Imm.

**Table 3. Secondary Bikeway Cost Estimates and Phasing**

Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>3rd Avenue Bicycle Boulevard</b>					
3rd Bicycle Boulevard	G to J		0.22	\$17,854	Long
3rd Bicycle Boulevard	A to G		0.40	\$31,935	Long
A St Bicycle Boulevard	3rd to 4th		0.07	\$5,990	Long
4th Ave Bicycle Boulevard	City High to A		0.18	\$14,389	Long
<b>7th Avenue Bicycle Boulevard</b>					
7th Bicycle Boulevard	Rochester to F		0.92	\$74,036	Long
<b>Arlington Bicycle Boulevard</b>					
Chadwick Bicycle Boulevard	Lower West Branch to American Legion		0.20	\$16,128	Long
Arlington Bicycle Boulevard	Lower West Branch to Court		0.29	\$23,624	Long
Arlington Bike Lanes	Court to American Legion		0.71	\$66,592	Long
<b>Church Bicycle Boulevard</b>					
Church Bicycle Boulevard	Governor to Clinton		0.60	\$48,398	Near
<b>College Bicycle Boulevard</b>					
College Bicycle Boulevard	Morningside to Linn		1.20	\$96,221	Imm.
<b>Court Bicycle Boulevard</b>					



Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
Court Bicycle Boulevard	Gilbert to Madison		0.39	\$31,379	Long
<b>Davenport Bicycle Boulevard</b>					
Davenport Bicycle Boulevard	Bloomington to Capitol		1.16	\$93,648	Long
<b>Emerald Bicycle Boulevard</b>					
Emerald Bicycle Boulevard	Melrose to Benton		0.42	\$33,554	Near
<b>Highland Bicycle Boulevard</b>					
Highland Bicycle Boulevard	Keokuk to Gilbert		0.45	\$35,833	Long
Highland Bicycle Boulevard	Sycamore/Lower Muscatine to Keokuk		0.63	\$50,841	Long
<b>Hollywood Bicycle Boulevard</b>					
Hollywood Bicycle Boulevard	Hwy 6 to W/O Taylor		1.12	\$90,355	Long
<b>Lower Branch Bike Lanes</b>					
Lower West Branch Bike Lanes	Taft to Scott		1.12	\$104,202	Long
<b>Oakcrest Bicycle Boulevard</b>					
Woodside / Oakcrest / Koser Bicycle Boulevard	Greenwood to Emerald Connector Trail		0.90	\$72,769	Long
Koser-Emerald Connector Shared Use Path	Koser to Emerald		0.05	\$54,079	Long
<b>Ridge/Broadway Bicycle Boulevard</b>					
Ridge Road Bicycle Boulevard	Highland to Brookwood		0.27	\$21,378	Long
Ridge-Hwy 6 Connector Shared Use Path	Ridge to Hwy 6		0.07	\$80,794	Long
Broadway Bicycle Boulevard	Hwy 6 to Sandusky		0.32	\$25,621	Long
<b>Ridgewood/Friendship Bicycle Boulevard</b>					
Friendship / Ridgewood Bicycle Boulevard	Court to Court		1.71	\$137,678	Long
Court St Sidepath	Ridgewood to Muscatine		0.05	\$30,019	Long
<b>River to River Bicycle Boulevard</b>					
River St Bicycle Boulevard	Riverside to Woolf		0.52	\$41,888	Near
Woolf Ave Bicycle Boulevard	River to Newton		0.30	\$24,425	Near
Rider / Dill / Black Springs Bicycle Boulevard	Woolf to Rocky Shore		0.41	\$32,934	Near
<b>Sandusky Secondary Bikeway</b>					

Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
Sandusky Bikeway	Keokuk to Future Wetherby Park Trail Connector		0.28	\$4,842	Long
<b>South Crosstown Bicycle Boulevard</b>					
Prentiss Bicycle Boulevard	Gilbert to Madison		0.39	\$31,319	Imm.
Bowery Bicycle Boulevard	Summit to Gilbert		0.47	\$37,773	Imm.
Sheridan Bicycle Boulevard	7th Ave to Summit		0.49	\$39,664	Long
F / 5th / G Bicycle Boulevard	7th Ave to 3rd Ave		0.42	\$33,903	Long
<b>Southeast Bicycle Boulevard</b>					
J St Bicycle Boulevard	3rd Ave to 1st Ave		0.15	\$11,909	Long
Bradford Bicycle Boulevard	1st Ave to Dover		0.42	\$33,664	Long
Wayne / Village / Wellington Bicycle Boulevard	Wellington to Dover		0.33	\$26,257	Long
Wellington Bicycle Boulevard	Scott to Dover		0.40	\$32,463	Long
<b>Summit Bicycle Boulevard</b>					
Summit Bicycle Boulevard	College to Kirkwood		0.65	\$52,386	Long
<b>Sunset Bikeway</b>					
Sunset Bike Lanes	Benton to Hwy 1		0.61	\$57,119	Near
<b>Westminster/Dover Bicycle Boulevard</b>					
Westminster / Teton Bicycle Boulevard	Rochester to Court Hill Trail		0.79	\$63,604	Near
Court Hill Trail Extension Shared Use Path	Westminster to Friendship		0.12	\$134,342	Near
Dover / Meadow Bicycle Boulevard	Friendship to Bradford		0.57	\$45,574	Near

**Table 4. Neighborhood Connector Bikeway Cost Estimates and Phasing**

Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>7th / Winston Neighborhood Connector</b>					
7th / Winston Neighborhood Connector	Woodridge to Rochester		0.36	\$6,229	Long
<b>Burns Neighborhood Connector</b>					
Burns Neighborhood Connector	Sycamore to Taylor		0.34	\$5,889	Long
<b>Capitol Neighborhood Connector</b>					
Capitol Neighborhood Connector	Davenport to Market		0.15	\$2,605	Near
<b>Covered Wagon Neighborhood Connector</b>					
Covered Wagon Neighborhood Connector	Future Wetherby Park Trail Connector to McCollister		0.24	\$4,133	Long
<b>Deforest Neighborhood Connector</b>					
Deforest Neighborhood Connector	Sycamore to Ridge		0.37	\$6,370	Long
<b>Duck Creek Neighborhood Connector</b>					
Duck Creek Neighborhood Connector	Hunter's Run Park Trail to Rohret		0.41	\$7,069	Long
<b>Ferson Shared Neighborhood Connector</b>					
Ferson Shared Neighborhood Connector	Park to Hwy 6		0.52	\$8,891	Long
<b>Hickory Neighborhood Connector</b>					
Hickory Neighborhood Connector	Tamarack to 1st Ave		0.46	\$7,951	Long
<b>Kennedy Neighborhood Connector</b>					
Kennedy Neighborhood Connector	Camp Cardinal to Melrose		1.65	\$28,299	Long
<b>Mackinaw / Manitou Neighborhood Connector</b>					
Mackinaw / Manitou Neighborhood Connector	Existing Trail to Foster		0.39	\$6,635	Long
<b>Union / Fairmeadows Neighborhood Connector</b>					
Union / Fairmeadows Neighborhood Connector	Hwy 6 to Fairmeadows Park		0.31	\$5,346	Long



Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>Whispering Meadow / Pinto / Paddock Neighborhood Connector</b>					
Whispering Meadow / Pinto / Paddock Neighborhood Connector	Heinz to Sycamore Greenway Trail		1.20	\$20,568	Long
<b>Willow Creek Dr Neighborhood Connector</b>					
Willow Creek Dr Neighborhood Connector	Hwy 1 to Willow Creek Park		0.18	\$3,136	Imm.

**Table 5. Multi-Use Trail Project Cost Estimates and Phasing**

Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>Hickory Hill Corridor</b>					
Hickory Hill Park Trail Shared Use Path	1st Ave to Bloomington		0.94	\$1,069,250	Long
Hickory Trail Connector Shared Use Path	Scott to Hickory		0.34	\$387,068	Long
<b>Iowa River Trail Corridor</b>					
Kirkwood - River Trail Link 1 Shared Use Path	to		0.07	\$84,505	Unsch.
Kirkwood - River Trail Link 2 Shared Use Path	to		0.09	\$103,491	Unsch.
<b>Iowa River Trail West Extension, Phase 1</b>					
Iowa River Trail West Extension, Phase 1 Shared Use Path	Benton to McCollister		1.62	\$1,833,670	Unsch.
<b>Iowa River Trail West Extension, Phase 2</b>					
Iowa River Trail West Extension, Phase 2 Shared Use Path	McCollister to Izaak Walton		1.26	\$1,427,710	Unsch.
<b>Willow Creek Trail Corridor</b>					
Willow Creek Trail Extension Shared Use Path	West Terminus of Willow Creek Trail to Hunter's Run Park trail		0.30	\$2,900,000	Unsch.
Willow Creek Trail Extension Shared Use Path	South Willow Creek Trail Terminus to Hwy 1		0.16	\$184,512	Unsch.
<b>Windsor Ridge Trail Corridor</b>					
Windsor Ridge Trail Extension Shared Use Path	American Legion to Hwy 6		1.94	\$2,201,320	Long
<b>College - Jefferson Link</b>					
College - Jefferson Link Shared Use Path	Jefferson to College		0.37	\$416,586	Unsch.
<b>Huntington Trail Corridor</b>					
Huntington Trail Extension Shared Use Path	Lower West Branch to Huntington Trail		0.34	\$389,924	Long

Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>McCollister to Alexander Elementary Diagonal Connector</b>					
McCollister to Alexander Elementary Diagonal Connector Trail	Sycamore Greenway Southwestern Terminus to McCollister Extension		0.71	\$800,170	Unsch.
<b>Wetherby Park Trail Extension</b>					
Wetherby Park - Covered Wagon Connector Trail Shared Use Path	Covered Wagon to Wetherby Park Trail		0.22	\$249,037	Long
<b>Windsor Ridge Trail Corridor</b>					
Windsor Ridge Trail Extension Shared Use Path	American Legion to Hwy 6		0.89	\$1,010,010	Long

**Table 6. Sidepath Project Cost Estimates and Phasing**

Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>1st Avenue Sidepath</b>					
1st Sidepath	S/O Bradford to Hwy 6		0.53		Long
1st Sidepath	Rochester to Court Hill Trail		1.02	\$648,752	Near
<b>Court Sidepath</b>					
Court Sidepath	Lindemann to Scott		0.16		Near
Court Sidepath	Lindenmann to Peterson		0.09		Near
Court Sidepath	Taft to Huntington Trail		0.13		Near
<b>Foster Sidepath</b>					
Foster Sidepath	Laura to Calibria	Incorporated into future design project	0.27		Long
Foster / Bjaysville Sidepath	Prairie Du Chien to Dubuque		0.67		Unsch.
<b>Gilbert Sidepath</b>					
Gilbert Sidepath	Existing Sidepath @ Napoleon Park to Trueblood Trail		0.83	\$530,422	Long



Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>Heinz Sidepath</b>					
Heinz Sidepath	Paddock to McCollister Extension	New construction to meet city street standards	0.32		Long
<b>Hwy 1 Sidepath</b>					
Hwy 1 Sidepath	Sunset to Mormon Trek	Programmed project	0.52		Imm.
Hwy 1 Sidepath	Iowa River Trail to Orchard		0.29	\$183,483	Long
<b>Hwy 6 Sidepath</b>					
Hwy 6 Bridge Sidepath	Iowa River Trail to Orchard		0.06	\$39,873	Long
Hwy 6 Sidepath	Heinz to Hollywood	Programmed project	1.66		Near
Hwy 6 Sidepath	Sioux to Heinz		0.50	\$319,217	Long
<b>Kirkwood Sidepath</b>					
Lower Muscatine / Fairmeadows Sidepath	1st Ave to Hwy 6		0.31	\$199,122	Near
<b>McCollister Corridor</b>					
McCollister Extension Sidepath	Gilbert to Sycamore	New construction to meet city street standards	0.84		Near
McCollister Extension Sidepath	Gilbert to Hwy 6	New construction to meet city street standards	1.68		Unsch.
<b>Melrose Sidepath</b>					
Melrose Sidepath	Emerald to Hawkeye Park	New construction to meet city street standards	1.00		Near
<b>American Legion Sidepath</b>					
American Legion Sidepath	Taft to Scott	New construction to meet city street standards	1.08		Near
<b>Riverside Drive Sidepath</b>					
Riverside / Old Highway 218 Sidepath	Benton to McCollister		1.44	\$916,735	Long

Corridor & Project	Project Limits	Notes	Project Length	Cost Estimate	Project Phasing
<b>Rochester Sidepath</b>					
Rochester Sidepath	Mt Vernon to 1st Ave	New construction to meet city street standards	0.42		Long
<b>Rohret Sidepath</b>					
Rohret Sidepath	Lake Shore to Kansas	New construction to meet city street standards	2.02		Unsch.
<b>Sycamore Sidepath</b>					
Sycamore Sidepath	Sycamore Greenway Extension to Sand	New construction to meet city street standards	0.48		Long
<b>Taft Sidepath</b>					
Taft Sidepath	Herbert Hoover to 420	New construction to meet city street standards	3.00		Unsch.
<b>Normandy Sidepath</b>					
Normandy Sidepath	Park Trail to Park Trail		0.49		Unsch

