

HIKE & BIKE WC

BICYCLE, PEDESTRIAN, & TRAILS MASTER PLAN

WEBSTER COUNTY & FORT DODGE, IOWA



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 **SNYDER**
& ASSOCIATES
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TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

Benefits of Biking and Walking	1
Purpose of the Plan	2
The Five E's of Bicycling	3
Plan Goals	4
Planning Process	5
Existing Studies and Plans	8

CHAPTER 2: DISCOVERY REPORT

Physical Setting	12
Demographics	13
Transportation Data	13
Existing Conditions	15
Strengths and Weaknesses	20

CHAPTER 3: ENGINEERING: THE BICYCLE AND TRAILS NETWORK

Proposed Network	24
Trail Facility Types and Recommendations	27
On-Street Bikeway Facility Types and Recommendations	32
Intersection Treatments	34
Amenities	44
Prioritization	47

CHAPTER 4: MARKETING, EDUCATION, AND ENCOURAGEMENT

Marketing Objectives	52
User Groups	53
Education and Encouragement	55
Implementation	63

CHAPTER 5: ENFORCEMENT AND EVALUATION

Enforcement Guidance	68
Evaluation Techniques	69

CHAPTER 6: ORDINANCES AND POLICIES

Complete Streets	72
Snow Removal	73
Bike Parking	75
Emergency Plan	76
Bicycle Ordinance	77
Sidewalk Ordinance	86
Other Power-Driven Mobility Devices	87
Webster County Trail Entrance Permits	88

CHAPTER 7: IMPLEMENTATION

City and County Staff	90
Trails Advisory Board	90
Plan Goals and Actions	91
Funding Opportunities	95
Maintenance Guidelines	99

APPENDICES

Appendix A - PMT Meeting 1 Presentation & Minutes	i
Appendix B - PMT Meeting 2 Presentation & Minutes	vii
Appendix C - PMT Meeting 3 Presentation & Minutes	xv
Appendix D - PMT Meeting 4 Presentation & Minutes	xxii
Appendix E - Hike & Bike WC Public Survey Questions	xxix
Appendix F - Hike & Bike WC Public Survey Results	xxxv
Appendix G - Hike & Bike WC Survey Analysis	li
Appendix H - Bicycle Lane Recommendations	lvii
Appendix I - Types of Bicyclists Analysis	lxiii
Appendix J - Local Complete Streets Sample Policy	lxv
Appendix K - Cost Opinion Workbook	lxvii

1

INTRODUCTION

Benefits of Biking and Walking

Purpose of the Plan

The Five E's of Bicycling

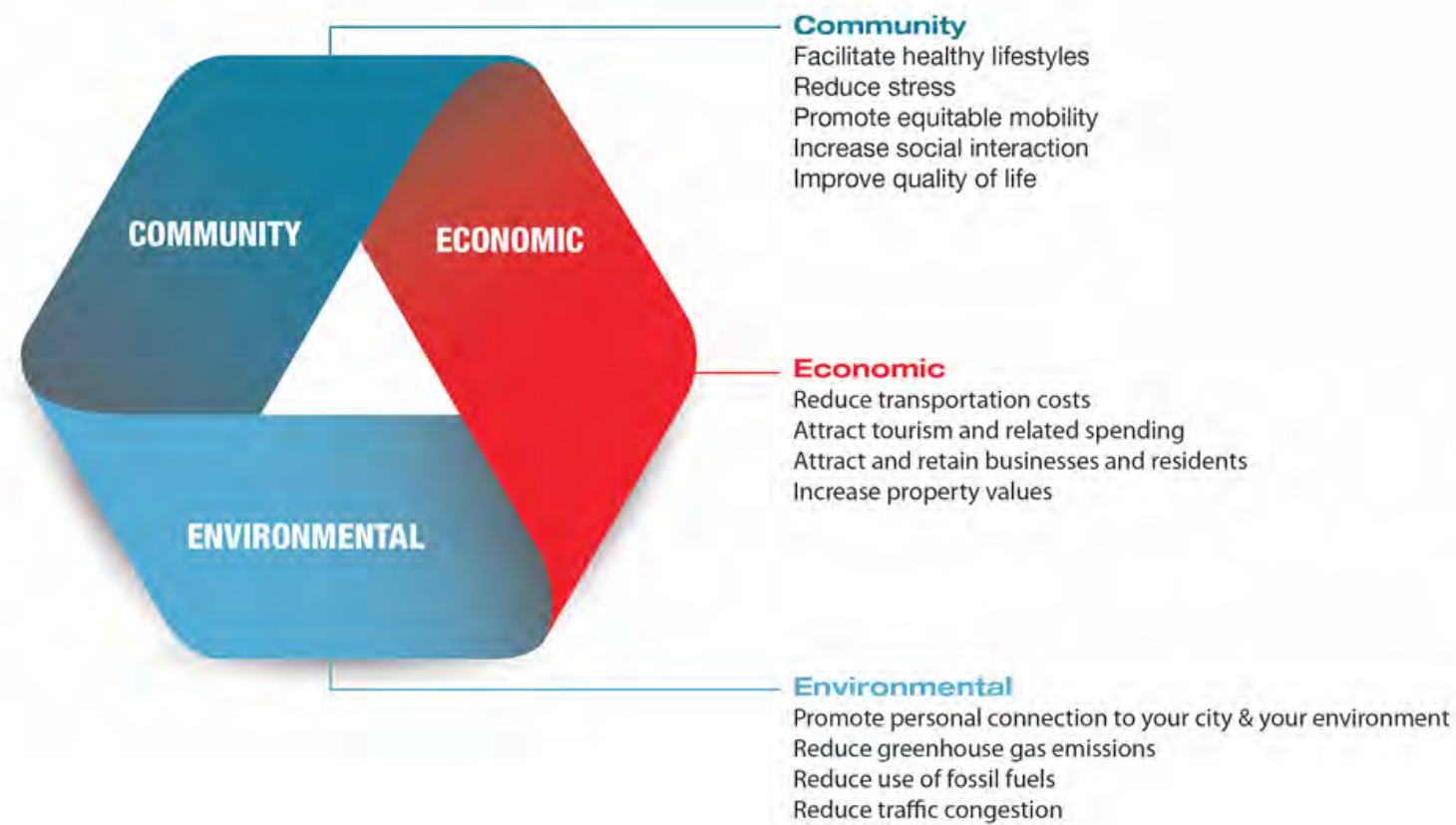
Plan Goals

Planning Process

- Meetings Summary
- Public Open House
- Additional Meetings and Engagement Activities

Existing Studies and Plans

BENEFITS OF BIKING AND WALKING



Communities that support biking and walking for transportation and recreation are also supporting happiness, health, and high quality of life for their residents. Biking and walking provide numerous benefits to both the individual who engages in the activity and to the community in general.

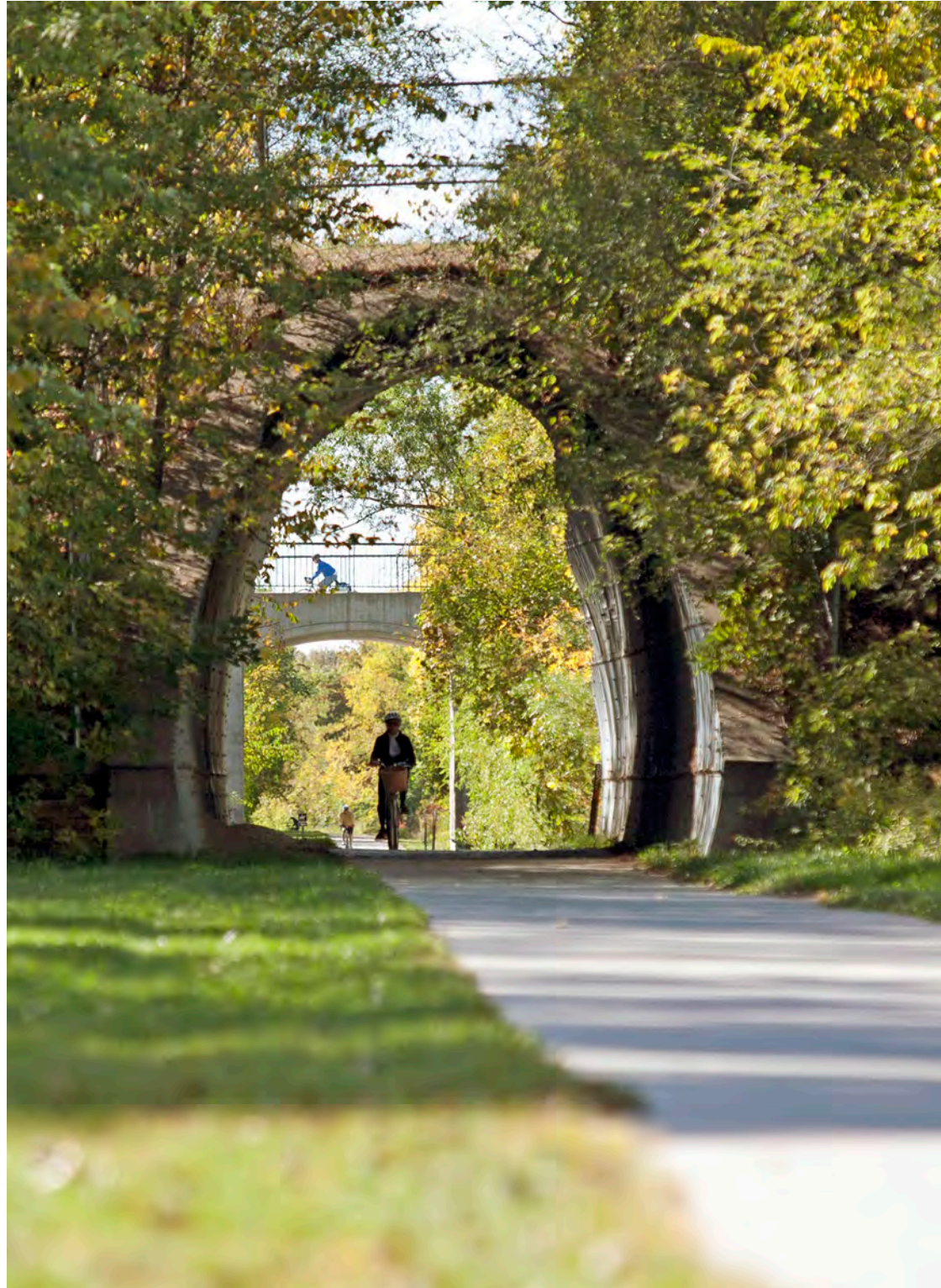
The provision of on-street bicycle facilities and sidewalks throughout a community results in equitable mobility in which all individuals can meet their daily transportation needs, regardless of their ability or desire to own or drive a car. Further, biking and walking offer low-cost, non-polluting, sustainable and healthy forms of transportation. When trails create a connected recreational network that is beautiful and inviting, then walking, running, and biking become an easy and enjoyable option for fun and fitness as well. Individuals who bike and walk benefit from improved health, reduced stress, lower transportation costs, and increased social interaction.

When more people walk or bike for transportation, the community benefits from reduced traffic congestion and associated vehicle emissions, which improves air quality. The intimate nature between people walking and biking and the land around them allows them to experience both beauty and blight, and to care more about the natural and built environment.

Individuals also become better connected to each other, as they wave hello in passing, comment on rare trail occurrences like the presence of a spotted fawn, or warn each other of upcoming hazards like broken glass or a fallen tree. These seemingly insignificant encounters strengthen community cohesion and can deter crime by increasing positive social interactions and recognition of friendly faces throughout a neighborhood.

Communities that have robust trail networks attract tourists who want to bike, walk, or run for recreation or fitness. This leads to bars, restaurants, and bike shops opening along or near the trails. Walkable and bikeable downtown areas are also popular among tourists who want to shop, dine, and be entertained without the burden of driving and parking.

Tourists are not the only ones attracted by these amenities, new residents and businesses are also allured by trails, bike facilities, and walkable neighborhoods. Residents like the ability to walk their dogs and teach their kids to ride bikes right outside their front doors. Businesses that support employees' efforts to walk or bike to work, benefit from increased productivity and decreased absenteeism.



High Trestle Trail

PURPOSE OF THE PLAN

The purpose of this plan is to offer a guide for Fort Dodge and Webster County to create a community where biking and walking is both a safe and viable mode of transportation for many trips and a fun and enjoyable option for fitness and recreation.

This plan presents a 20-year vision for a fully-developed trail and bikeway system throughout Webster County that connects local and regional destinations. Approval and adoption of this document as a component of the City's and County's comprehensive plan indicates that the proposed bikeway system (engineering), the marketing plan (education and encouragement), the policies and regulations (enforcement), and the measurement metrics (evaluation) are generally accepted as the best practice standard for improving biking and walking in the City and County. The City and County will make staff-level and appointed or elected body-level decisions in support of the goals, strategies, and recommendations set forth herein.

However, this document should be implemented as a guide and not a prescript. As new engineering techniques develop or additional marketing tools become available, for example, those may be considered to the extent that they support the goals and intent of this plan. Minor modifications to the plan as adopted may be made without a formal amendment. For example, if the map included herein calls for shared lane markings, and upon engineering design or review it becomes apparent that bike lanes are more appropriate, then such modification may be made upon staff review and recommendation. Modifications to the plan must continue to promote the overall goal to integrate bicycling as a viable mode of the transportation system.

Implementation of the facilities proposed in this plan may be subject to approval by appropriate governmental departments, public committees, or the City Council, County Conservation Board, or County Board of Supervisors, as applicable.

BIKING & WALKING

TRANSPORTATION

RECREATION

SAFE

VIABLE

FUN

ATTRACTIVE



Source: ragbrai.com/category/photo-galleries

THE FIVE E'S OF BICYCLING

This plan addresses the Five E's of Bicycling: Engineering, Education, Encouragement, Enforcement, and Evaluation. The City and County may take the lead on each of these elements, but there are ample opportunities for others to get involved. For example, Education and Encouragement initiatives can be undertaken by local volunteer groups and non-profit organizations. Citizen feedback and volunteerism can aid the City's and County's evaluation of the network. Enforcement is primarily the work of the police department, but cyclists must do their part by learning and following the bicycling laws and regulations, and reporting hazardous conditions or behavior. Engineering efforts are likely to be part of the City's and County's capital improvement program, which is the only one of the five E's that is generally primarily a local government endeavor.

Evaluation

Assessing the effectiveness of the bicycling network, programs, and policies and planning for changes and improvements. This includes a status report on the goals and objectives set forth in this Bicycle and Trail Master Plan.

Enforcement

Ensuring that roads are safe for all users through laws and regulations. Bicyclists should be treated fairly and equitably to ensure public safety.



Engineering

Designing and constructing safe and practical infrastructure which allows people of all skill levels the opportunity to bike for transportation and recreation. This includes connectivity of the bicycling network and secure and functional bicycle parking.

Education

Providing educational opportunities for people to learn and improve bicycling skills and to understand their rights and responsibilities on the road. Education is also important for motorists to learn to properly share road space with bicyclists.

Encouragement

Creating a community which celebrates bicycling for recreation, transportation, and fitness purposes. This includes special events, incentives, and anything that makes bicycling fun and easy.

PLAN GOALS

Goal 1

Provide a complete bicycle and pedestrian system with connections to various destinations

Using public engagement results and suggestions from staff, this plan identifies key destinations within Fort Dodge and throughout Webster County, as well as appropriate facilities and routes to connect these places.

Goal 2

Increase biking and walking trips for health, recreation, and transportation

This plan recommends amendments to local ordinances and policies related to biking and walking, with the intent of creating both a physical environment and a management practice that is conducive to people biking and walking.

Goal 3

Ensure safety for all when biking and walking

Through engineering expertise, vigilant maintenance practices, and thorough educational components, the City and County can implement a biking and walking network that is safe for and accommodating of all ages and abilities.

Goal 4

Develop a marketing plan to promote the Prairie Rivers Trail System

This plan suggests that targeted marketing and communication techniques along with strong educational and encouragement efforts to build awareness, usage, and support of the Prairie Rivers Trail System.

This master plan should be considered an extension of the Fort Dodge comprehensive plan, Re-Envision 2030, and the Webster County Comprehensive Development Plan.

Goal 13 of the Fort Dodge Comprehensive Plan is to:

Create a community-wide, fully accessible system of sidewalks and trails that provides access between residential neighborhoods and Downtown Fort Dodge, the Des Moines River, the Harlan Rogers Sports Complex, Iowa Central College, and other destinations throughout the City.

Goal 12 of the Webster County Comprehensive Plan is to:

...continue to provide new recreational opportunities and enhance existing facilities for the residents of Webster County, visitors, and all of Iowa.

This master plan fits squarely within those goals, and the recommendations put forth are best approached as objectives toward reaching each respective comprehensive plan goal.

PLANNING PROCESS

The planning process relied upon prior public engagement efforts for numerous other plans and projects, including a 2015 survey conducted by the Mid-Iowa Development Association (MIDAS) Council of Governments. Through these other projects, the City and County solicited public input regarding bicycling and pedestrian conditions, obstacles to biking and walking, desired connections and destinations, and preferred types of facilities. The relevant sections of these plans were analyzed and incorporated into this plan to maintain continuity.

The planning process included a Project Management Team (PMT) and Trails Advisory Board (TAB).

The TAB is an existing committee that has been meeting since 2006 to discuss trail development in Fort Dodge and Webster County. The PMT was created as an ad hoc committee for this planning process. The PMT was comprised of City and County staff, elected officials, school officials, Greater Fort Dodge Growth Alliance, user groups, and members of the Trails Advisory Board. The committee was tasked with ensuring that all public services will continue to be fulfilled, and that state and regional plans and regulations are followed during the development of new trails and bikeways.

The PMT was involved in all key decisions including goals, routes, identifying preferred facility types, and prioritizing implementation efforts. This committee met a total of four times during the planning process. Presentations were also provided to the TAB on two occasions through the process as well.

Project Management Team

NAME	TITLE	ORGANIZATION
David Fierke	City Manager	City of Fort Dodge
Carissa Harvey	Senior Planner	City of Fort Dodge
Maggie Carlin	Associate Planner	City of Fort Dodge
Chad Schaeffer	City Engineer	City of Fort Dodge
Lori Branderhorst	Director of Parks, Recreation, & Forestry	City of Fort Dodge
Jeff Halter	Council Member	Fort Dodge City Council
Matt Cosgrove	Director	Webster County Conservation
Randy Will	Engineer	Webster County Engineering
Jamie Johll	Assistant Engineer	Webster County Engineering
Mark Campbell	Supervisor	Webster County Board of Supervisors
Keith Dencklau	Supervisor	Webster County Board of Supervisors
Doug Van Zyl	Superintendent	Ford Dodge Community School District
Dennis Plautz	CEO	Greater Fort Dodge Growth Alliance
Randy Kuhlman	CEO/Chair	Fort Dodge Community Foundation / Trails Advisory Board
Kevin Doty	Chief of Police	Fort Dodge Police Department
Ryan Gruenberg	Sergeant	Fort Dodge Police Department
Kent Hulett	Fire Chief	Fort Dodge Fire Department
Lenny Sanders	Assistant Fire Chief	Fort Dodge Fire Department
Ron Jacobson	Member	Mountain Bikers
Sean Alstott	Member	Mountain Bikers
Laura Ludgate	Member	Dodger Cyclists
Kari Prescott	Director	Webster County Health Department and Environmental Health
Shirley Helgevold	Local Assistance Manager	MIDAS Council of Governments
Mike Clayton	District 1 Planner	Iowa DOT

Trails Advisory Board

NAME	TITLE	ORGANIZATION
David Fierke	City Manager	City of Fort Dodge
Carissa Harvey	Senior Planner	City of Fort Dodge
Chad Schaeffer	City Engineer	City of Fort Dodge
Lori Branderhorst	Director of Parks, Recreation, & Forestry	City of Fort Dodge
Matt Cosgrove	Director	Webster County Conservation
Jamie Johll	Assistant Engineer	Webster County Engineering
Randy Kuhlman	CEO/Chair	Fort Dodge Community Foundation
Joe Kuhlman	Operations Manager	Fort Dodge Community Foundation
Doug Breyfogle	Board Member	Dodger Cyclists
Nick Salmon	Board Member	Dodger Cyclists
Shirley Helgevold	Local Assistance Manager	MIDAS Council of Governments
Dennis Plautz	Executive Director	Greater Fort Dodge Growth Alliance
Jill Nelson	Community Development Director	Greater Fort Dodge Growth Alliance
John Taets	President	Northwest Bank
David Sergeant	Owner/Partner	Sergeant Law Firm
Tony Recker	Technician Specialist	Frontier Communications
Jeff Walters	Environmental Scientist	Snyder & Associates, Inc.

MEETINGS SUMMARY

PMT Meeting #1 – Project Kick Off, March 6, 2017

The agenda for the first PMT meeting included the following:

- A presentation on the scope of work, project objectives, master plan components, and anticipated project schedule
- An overview of existing plans and public input
- A discussion on public survey questions, strengths and weaknesses of the existing facilities, and local and regional needs

The PMT meeting #1 minutes and presentation are located in Appendix A.

PMT Meeting #2 & TAB Meeting #1 – April 27, 2017

The agenda for the second PMT meeting and first TAB meeting included the following:

- Citizen survey results
- Network review and design guidelines

The PMT meeting #2 minutes and presentation are located in Appendix B.

PMT Meeting #3 & TAB Meeting #2 – July 6, 2017

The third PMT meeting was a joint meeting with the TAB. The agenda included the following:

- Review of Plan Goals
- Marketing, including two E's
- Education
- Encouragement
- Enforcement
- Evaluation

The PMT meeting #3 minutes and presentation are located in Appendix C.

PMT meeting #4 & TAB Meeting #3- March 29, 2018

The fourth and final PMT meeting was a joint session with the TAB and included a presentation and discussion of the following plan elements:

- Engineering the Bicycle and Trails Network
- Implementing the Plan

The meeting also included a discussion of the final plan and layout.

The PMT meeting #4 minutes and presentation are located in Appendix D.

PUBLIC OPEN HOUSE

Oleson Park Prairie Rivers Trail Event – September 19, 2017

This special event consisted of health screenings, an adult bike ride put on by the Dodger Cyclists, a bicycle maintenance station, a kids' bike scavenger hunt, and refreshments. Staff from Snyder & Associates, Inc. was present to discuss the Hike & Bike WC Master Plan. Maps were presented displaying the proposed routes through Fort Dodge and Webster County, along with the overall goals of the plan. Attendees were given the chance ask questions and comment on the proposed routes and facilities. Some of the primary feedback from the event included:

- Priority should be given to the extension of 15th Street Trail across the bridge
- Trails should be developed on the southern half of the City of Fort Dodge. This area is not well served by existing facilities.
- Attendees were very excited and glad that the City is working hard to provide new trails and bicycle facilities.



PMT meeting #1



Prairie Rivers Trail Event

ADDITIONAL MEETINGS AND ENGAGEMENT ACTIVITIES

Public Opinion Survey - March 2017

An online survey was created to gather public input regarding existing and future bicycle and pedestrian facility planning efforts. Questions were asked regarding demographics, frequency of trail and/or bicycle facility use, trail user activities and abilities, comfort level with various facilities, respondent opinions and priorities, and an open-ended question about preferred connections or any other relevant information. The survey analysis and results can be found in the appendices.

Tour of Facilities - March 6, 2017; April 27, 2017

On March 6, Fort Dodge and Webster County staff provided a tour of facilities to Snyder staff and informally discussed future plans, issues, and concerns.

On April 27, Snyder staff bicycled around town to experience both riding on trails and on-streets.

Staff Meeting - July 6, 2017

City and County staff met with the representatives from Snyder & Associates to review existing policies and ordinances that affect biking and walking in Fort Dodge and Webster County. The group reviewed policies relating to complete streets, bicycling, snow removal, bicycle parking, emergency plans, sidewalks, street trees, and Other Power-Driven Mobility Devices. The consultants made recommendations for changes and improvements to existing policies.

Public Hearing and Adoption - April 2018

The Fort Dodge City Council and the Webster County Conservation Board approved the plan in April 2018.



Contra-flow bike lane, Iowa State University: Ames, Iowa



Kids biking on sidewalk, Fort Dodge, Iowa

As noted in Chapter 2, the City of Fort Dodge and Webster County have undertaken several planning efforts in which they have assessed needs and opinions regarding the bikeways and trail network in Webster County. Therefore, to incorporate recent public input into this trails master plan, workshop data, surveys, and comments from past planning efforts were reviewed to identify key themes and priorities for residents of Webster County.

EXISTING STUDIES AND PLANS

Re-Envision 2030 - A Comprehensive Plan for the City of Fort Dodge (2016)

The plan lays out a vision for the future of Fort Dodge and identifies several goals, objectives, and policies for achieving that vision. Trails are a part of that vision, with discussion of “The city-wide multi-modal trail system” as linking “all areas of Fort Dodge.” This includes linkages to “various park and waterfronts including the Des Moines Riverfront, Lizard Creek and Soldier Creek; local schools; and the Library from neighborhoods throughout Fort Dodge.” Objectives identified in the comprehensive plan that are relevant to this study include:

1. Strengthen the City’s Complete Streets policy and implement it through design standards and zoning and subdivision regulations.
2. Require all new residential subdivisions to provide dedicated trails or designated bike lanes that connect to the community-wide trail network.
3. Ensure that all signalized intersections include appropriate amenities and technologies to support pedestrian crossing movements.
4. Establish a sidewalk improvement program that prioritizes investment near common pedestrian destinations and pedestrian routes with the potential for high pedestrian traffic counts.
5. Designate and mark a network of on-street bike lanes that would complement the system of dedicated trails.
6. Ensure that the bicycles and trail network includes amenities that enhance rider safety, comfort, and usability by doing the following:
 - a. Enhance pedestrian crossings along collectors and arterials located between parks and neighborhoods in their respective service areas;
 - b. Designate local bike lanes on local streets connecting regional trails to parks;
 - c. Amend subdivision regulations to require designated trails or bike lanes between the edges of a subdivision and parks and open spaces within the new development area;
 - d. Establish standards for on-street bike lane signage and striping;
 - e. Upgrade existing trail facilities with wayfinding signs and mileage markers, benches, lighting, and water fountains, among others; and,
 - f. Continue to partner with Webster County Conservation Board (WCCB) for trails maintenance and the creation of a trail management plan.
7. Make the Fort Dodge trail network a destination.

Des Moines River and Lizard Creek Water Trails and Corridor Plan Draft (2017)

The plan focuses on the water trails system in Fort Dodge and Webster County. The plan includes objectives in the Des Moines River area to provide safe bicycle and pedestrian access between Coalville, Otho, and Lehigh, and overall expansion of conservation and recreational areas. Suggestions include working with the Iowa DOT to design a roadway alignment that can accommodate non-motorized transportation, creating a trail alignment that follows the Dragoon Trail, and exploring the potential for a trail corridor in Dolliver State Park.

Northwest River District Neighborhood Revitalization Plan (2016)

The plan focused on redevelopment and revitalization of the 3rd Avenue NW/Hawkeye Avenue Corridor and the surrounding area. The area consists of the neighborhood directly north of the confluence of Lizard Creek and the Des Moines River and identifies development opportunities and improvements. Included in the plan are recommendations for trail development in the study area in addition to trailheads, gateway features, intersection and streetscape treatments, and amenities such as Wi-Fi access and information hubs.

Webster County Comprehensive Plan (2008)

As a part of this plan, Webster County looked at many different factors contributing to quality of life, including recreational facilities, transportation, and trails. During this process, there were several town hall meetings held throughout the county where residents identified what the positive and negative aspects of the county were, the 20-year vision for the county, and what needed to be done to accomplish that vision. Trails made the top of the list for “improvements needed” in Webster County, showing that there is consensus regarding the need to expand and improve upon the current system.

Boone Forks – Tri-County Regional Plan (2017)

The Tri-County plan is a regional planning document for Boone, Hamilton, and Webster Counties aimed at “achieving economic, social, and natural resources balance and improvements.” The vision statement which guided the development of the plan is “Lands and communities fulfilling dreams” – connecting people to the scenic rail lines, agriculture, natural resources, and historic communities. The guiding mission is, “People and places work and grow together” – bridging the geographic and political divides to create a cohesive planning model for the region. The plan suggests creating a system of hubs, where visitors could rent a bicycle or other equipment on the spot and make use of restrooms and drinking water. There is also opportunity for a rails-with-trails corridor linking Fort Dodge to Duncombe to Webster City, which would celebrate Iowa’s agricultural heritage.

Webster County Trail Plan (2009)

This plan is a brief outline of the goals for trail planning in the County as identified by a Trails Task Force that was put together around the year 2006. The vision identified in the plan was to “create a welcoming community through people, parks, trails, and open spaces.” To accomplish this vision, the County identified the following mission statements that will inform the activities of the County Trail and Park System:

1. Strengthen community image and sense of place. Support economic development by providing jobs, attracting tourists and generating income for the County and local businesses.
2. Strengthen safety & security by designing facilities, programs, and services to reduce criminal activity.
3. Promote health and wellness through parks, trails, facilities, and programs that improve physical and emotional health.
4. Foster human development through encouragement of social, intellectual, physical, and emotional development
5. Increase environmental awareness and cultural unity through experiences that promote environmental and cultural understanding and celebration of diversity.
6. Protect natural resources by acquiring and protecting valuable natural resources such as open space, rivers, streams, greenways, forests, prairies, wetlands and other natural areas and critical habitats for diverse species.
7. Provide quality outdoor recreational experiences through programmed and self-guided outdoor recreation and low-cost entertainment for people of all ages and social classes.

In this plan the task force identified four goals for trail development in the County.

Coordinate, facilitate and develop one comprehensive and distinct trail plan for Webster County and Fort Dodge, working in concert with the County and the City.

1. Become the focal point for promoting the importance of having an engaging trail system that links state, county and city parks in Webster County and Fort Dodge.
2. Serve as the coordinating entity for advocating and building political capital, public support and financial backing for the trail system.
3. Develop strategic partnerships with the other five counties in Region V for linking trails, utilizing the Region V trails plan.

The plan also identified three different phases of trail development, one of which has been completed since the plan was adopted (Fort Dodge Nature Trail to Kennedy Memorial Park), and two of which have not been completed. The two that have not been completed include a connection following the Des Moines River on the south side of Fort Dodge and a connection to the Brushy Creek State Recreational Area.

Region V Long Range Transportation Plan, 2012-2032 (2012)

The Region V Long Range Transportation Plan is a federally required plan that sets the goals and vision for the network, assesses the existing transportation network, and identifies necessary improvements and development based on growth and need over the next 20 years. The transportation network identified in this plan includes multi-modal needs including bicycle and pedestrian needs and infrastructure. The plan identifies goals related to bicycle, pedestrian and trail planning in the region including the addition of trails near parks, lakes, and wooded areas; linking major “hot spots” such as schools, malls, and sporting facilities, and linking communities in the region with trails. The plan identifies an ambitious network for the region and for Webster County. For Webster County, trail routes are proposed along the Des Moines River Valley, connecting natural areas, and connecting communities to the larger trail network.

MIDAS Pedestrian/Trails Survey (2015)

In preparation for an update to the Region V Long Range Transportation Plan, the MIDAS Council of Governments prepared a pedestrian and trail survey for the region. They received 604 total responses, with 188 from Webster and 247 from Wright County.

- 92.2% of respondents felt it was important to link communities to existing trails.
- 57.4% of respondents used trails while on vacation and 27.2% didn't.
- When asked why people walked/biked, 67% responded that they did for recreation/exercise, nearly 27% responded that they walked/biked for transportation purposes (Visiting family, getting to work, school, etc.).
- When asked where should the funds to build/maintain trail facilities come from, respondents preferred donations at 41.5%, with taxes following after at 36.5% and user fees at 18.8%.
- For which types of trails respondents felt were lacking, 76.5% responded that paved trails were lacking, 37% responded that they were lacking unpaved trails, 38% responded that bicycle-friendly roads, 30.8% responded that paved shoulders and Bicycle lanes on city streets were lacking,
- When asked what prevents them from using area trails, 10% indicated that they were too far to get where you want to go, 9% indicated lack of access points, 7% included lack of knowledge of trail locations.

Des Moines Recreational River and Greenbelt

Phase I of this plan was completed in 2011. This consisted of the following elements:

- Completion of the Sunkissed Meadows Loop
- Trail connection between Central River District and Sunkissed Meadows Loop
- Trail connection between Sunkissed Meadows Loop and Kenyon Road
- Trail development from Sunkissed Meadows Loop to little dam
- Parking lot development at the little dam
- Trailhead development at the northeast corner of Sunkissed Meadows with amenities of trail kiosk, benches, trash receptacles, and bike racks

Phase II of this plan is planned to be completed in 2018. This consists of the following elements:

- Enhanced boat ramp
- Two trailhead developments
- Connect the trail located at the little dam south to the city limits
- Additional amenities and landscaping



2 DISCOVERY REPORT

Physical Setting

- Webster County
- Fort Dodge

Demographics

Transportation Data

- Transportation Preferences
- Bicycle and Pedestrian Involved Crashes

Existing Conditions

- Trails and Bicycle Facilities
- Regional Trails

Strengths and Weaknesses

PHYSICAL SETTING

WEBSTER COUNTY

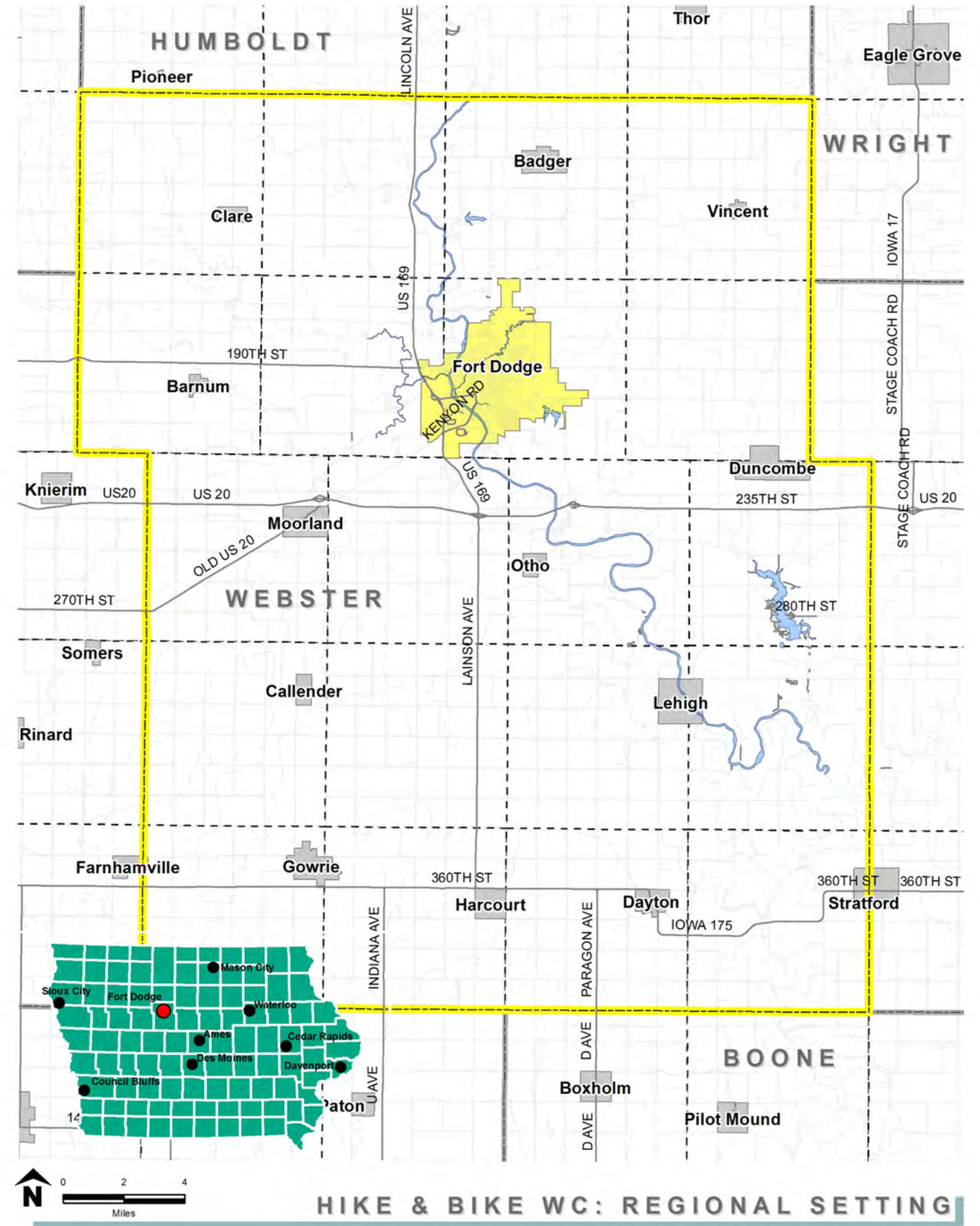
Webster County is located in the northwestern portion of the State. As of 2015, the population of Webster County was 37,071 people. The county includes fifteen cities, with only the largest city, Fort Dodge, having a population over 10,000. The county is home to several natural amenities and local attractions, including the Des Moines River, which bisects the county from the north to the south, Dolliver State Park, Brushy Creek State Recreation Area, Gypsum City OHV Park, and the Kennedy and Veterans Memorial Parks at Badger Lake. These amenities and features offer opportunities to create unique trail systems and scenic vistas by leveraging the county's existing natural areas.

FORT DODGE

Fort Dodge is conveniently located at the intersection of US Highway 20 and US Highway 169. The Des Moines metropolitan area is situated approximately 90 miles southeast of the city, while the Waterloo/Cedar Falls metropolitan area is approximately 100 miles directly east on Highway 20.

There are two distinct retail areas in Fort Dodge: the centrally located downtown district, and the Eastside Commercial District area in the southeast part of town. The downtown has smaller, densely populated retailers, entertainment establishments and restaurants, and personal and professional services. The Eastside Commercial District area has big-box retailers, department and specialty retail stores, grocery stores, and chain restaurants, and is best suited for vehicular transportation; however, sidepath trails have been added along 5th Avenue South to encourage pedestrian traffic.

Fort Dodge has potential to achieve its vision of becoming a bicycle- and pedestrian-friendly community. Its grid street pattern, manageable size, natural features, and open spaces make it an ideal place to travel by foot or bicycle.



DEMOGRAPHICS

Fort Dodge has experienced relatively stable population totals since 2000. The population grew from 25,136 to 25,206 between 2000 and 2010; however, the 2015 American Community Survey five-year estimates a population of 24,789. The median age is 37.1 years. This is slightly younger than the median age of Webster County (39.7) and the State of Iowa (38.1). An estimated 22.2 percent of the population is under the age of 18, and 16.3 percent are over the age of 65—which is roughly equal to Webster County and slightly less than for the state of Iowa. Both of these groups are important to note as older and younger populations tend to be more dependent upon walking and biking for transportation purposes.

TRANSPORTATION DATA

TRANSPORTATION PREFERENCES

The following tables show the preferred modes of travel and estimated travels times for commuters within Fort Dodge and Webster County based on the 2015 ACS 5-year estimates. “Car, Truck, or Van” is by far the most-preferred mode, with over three-quarters of those commuters driving alone and a usual travel time to work of less than 15 minutes. This pattern puts significant stress on infrastructure and maintenance resources, and can create issues with traffic congestion during peak travel times.

The data is publicly available through the U.S. Census Bureau’s American FactFinder website, and can be utilized as a time-series evaluation metric. A year-by-year analysis of the data before and after trail, sidewalk, and bicycle facilities improvements will show whether transportation preferences have changed. An increase in travel time could be correlated to increased non-motorized transportation.

In 2013, Webster County and Fort Dodge partnered with the Greater Fort Dodge Growth Alliance and the Iowa Workforce Development Center to develop the Fort Dodge and Webster County Laborshed Analysis. Approximately 1,424 people living in Fort Dodge work in other communities, or an estimated 15.4 percent of out-commuters at the time of the report.

A 2016 Retail Trade Analysis performed by the Iowa State University Extension estimated a total of 3,987 out-commuters using 2014 data, or 40.7% of the workforce leaving Fort Dodge (corresponding to 59.3% of local jobholders living and working in Fort Dodge).¹ This correlates to Fort Dodge as a job center for those who live there,² indicating the potential for increased intra-city alternative transportation.

¹http://www.icip.iastate.edu/sites/default/files/retail/retail_1928515.pdf
²<http://www.midiowagrowth.com/wp-content/uploads/2014/09/Laborshed-Report-Webster.pdf>

Means of Transportation		
Mode of Travel	Fort Dodge	Webster County
Car, Truck, or Van	93%	91%
Drove Alone	85%	84%
Carpooled	8%	7%
Walked	2%	0%
Bicycle	1%	1%

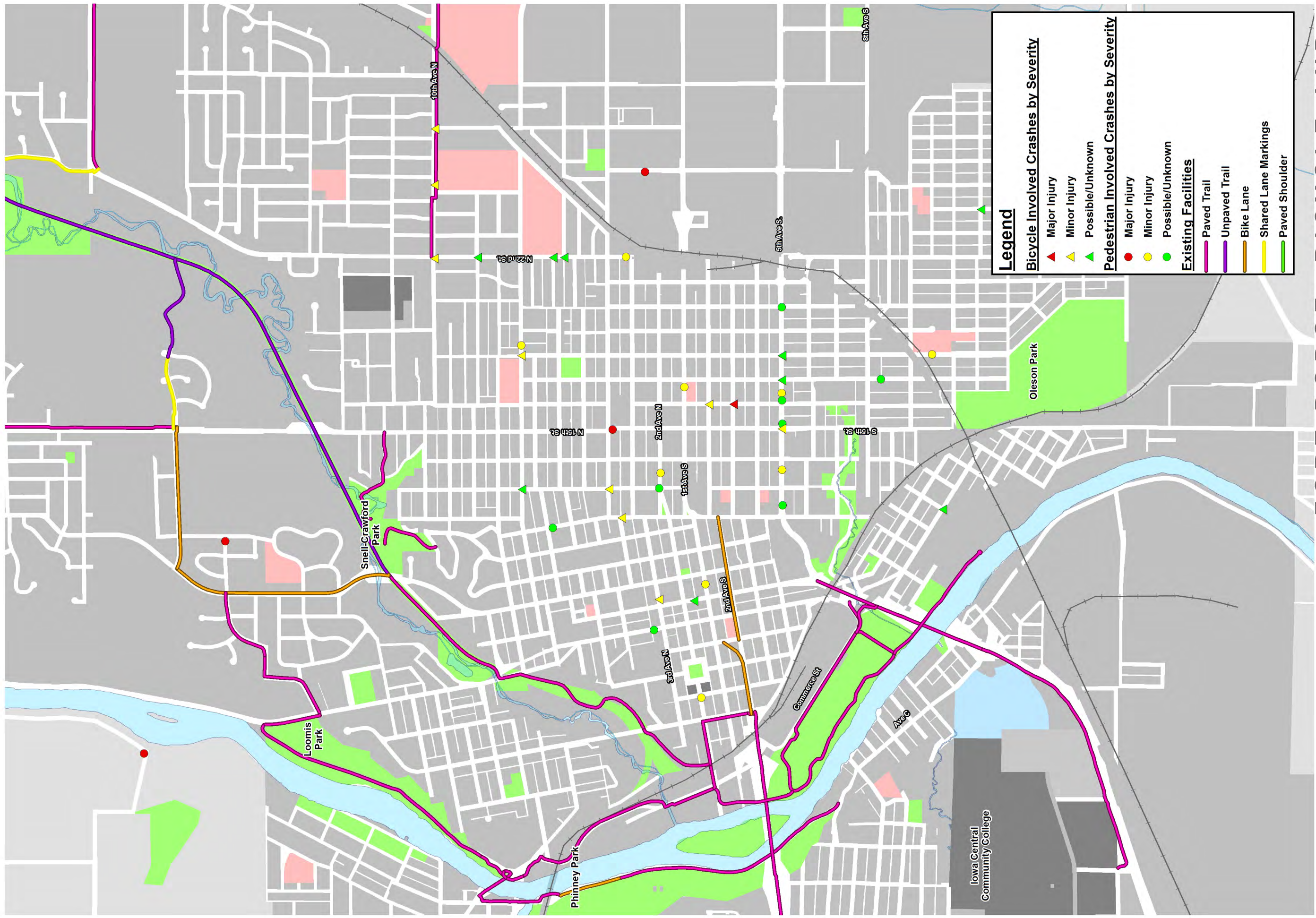
Travel Time to Work		
Time	Fort Dodge	Webster County
Less than 10 minutes	38%	31%
10-14 minutes	31%	26%
15-19 minutes	13%	15%
20-30 minutes	8%	14%
30 minutes or more	10%	15%

BICYCLE-AND-PEDESTRIAN-INVOLVED CRASHES

The Iowa DOT Office of Traffic and Safety provides city-level and county-level crash data. The following maps show crash data for 2012-2016. The only bicycle-involved crashes in Webster County occurred within the corporate limits of Fort Dodge, and only five pedestrian-involved crashes happened outside of Fort Dodge (in Barnum, Callender, and east of Dayton). The areas with the highest number of crashes happen at intersections, which is important to note as intersection improvements will likely be needed to improve safety for all users. No fatalities were reported in Fort Dodge or Webster County; however, major bicycle-related injuries were reported during this time period at the intersection of 3rd Avenue S and S 16th Street, and at 5th Avenue South near Gypsum Creek.

City, County, and State Crash Types					
	Total Vehicle Crashes	Pedestrian Crashes	Pedestrian % of Total Crashes	Bicycle Crashes	Bicycle % of Total Crashes
Fort Dodge	2,876	26	0.90	23	0.80
Webster County	4,009	31	0.77	23	0.57
State of Iowa	260,271	2321	0.89	1914	0.73

Source: Iowa DOT



FORT DODGE: BICYCLE AND PEDESTRIAN CRASHES: 2012-2016



EXISTING CONDITIONS

TRAILS AND BICYCLE FACILITIES

The first trail completed in Fort Dodge was the Soldier Creek Nature Trail in 1986. It was a 2.75-mile cinder-surfaced trail constructed on an abandoned railroad right-of-way. The trail started on Williams Drive at Snell-Crawford Park in the center city and ran northeast to the city boundary line at D-14/170th Street.

In 1994, the Phinney Park Trail was completed which was a 0.70-mile asphalt trail that ran along the scenic Des Moines River through the park.

In 1999, the next phase of trail development extended the Soldier Creek Nature Trail southwest, nearly a mile, as an asphalt paved trail connection from Williams Drive to the North 3rd Street Bridge.

Through the planning efforts of a trails task force, more trails and connectors throughout the city and county rapidly developed. According to the Fort Dodge Community Foundation, “In 2006, the board of the Development Corporation of Fort Dodge and Webster County (now the Greater Fort Dodge Growth Alliance) established a task force to develop a comprehensive trail system plan for the community and identify resources and funding opportunities to bring the plan to fruition. With this vision in mind, the Trails Advisory Board was created, forming a cross-sector partnership of public, philanthropic, business, and community members working together to improve the quality of life for all citizens of Fort Dodge and Webster County.”³

The Prairie Rivers Trails network now consists of paved, unpaved, soft, and on-street bikeways. It totals over 30 miles connecting neighborhoods, schools, business districts and facilities between Fort Dodge and Kennedy Park.

EXISTING PAVED TRAILS -- 20.79 MILES				
Facility Name	Material	Length (mi)	Year Built	Jurisdiction
Snell-Crawford Park – North 15 th Street Connector	HMA	0.31	1993	Fort Dodge
Phinney Park Trail	HMA	0.70	1994	Fort Dodge
Soldier Creek Nature Trail	HMA	0.94	1999	Fort Dodge
Central River District Trail	PCC	0.72	2008	Fort Dodge
Loomis – Central River District Connector	PCC	0.06	2008	Fort Dodge
Loomis Park Trail	HMA	0.76	2008	Fort Dodge
Soldier Creek Nature Trail	HMA	0.24	2008	Fort Dodge
Loomis – Central River District Connector	PCC	0.02	2009	Fort Dodge
Loomis – Phinney Park Connector	PCC	0.39	2009	Fort Dodge
North 32 nd Street Trail	PCC	2.07	2009	Fort Dodge
South 32 nd Street Trail	PCC	0.14	2009	Fort Dodge
Rosedale Rapids Loop	PCC	0.31	2010	Fort Dodge
South 32 nd Street Trail	PCC	0.14	2010	Fort Dodge
Loomis Park Waywood Connector	HMA	0.16	2011	Fort Dodge
North 15 th Street Trail	PCC	1.88	2011	Fort Dodge
North 15 th Street Trail	PCC	0.60	2011	Webster County
Rosedale Rapids Loop	PCC	0.16	2011	Fort Dodge
Waywood Drive Trail	PCC	0.52	2011	Fort Dodge
Kenyon Road Trail	PCC	1.33	2012	Fort Dodge
Loomis Park Trail	HMA	0.10	2012	Fort Dodge
North 15 th Street Trail	PCC	2.76	2012	Webster County
South 32 nd Street Trail	PCC	0.14	2012	Fort Dodge
25th Avenue North Trail	PCC	0.74	2012	Fort Dodge
Central River District – Sunkissed Connector	HMA	0.26	2013	Fort Dodge
Decker Trail	PCC	0.28	2013	Fort Dodge
Karl King – Central River District Connector	PCC	0.03	2013	Fort Dodge
Karl King – Freedom Rock Connector	PCC	0.16	2013	Fort Dodge
Karl King Trail	PCC	0.76	2013	Fort Dodge
Little Dam Trail	HMA	0.40	2013	Fort Dodge
Sunkissed Meadows Loop	HMA	1.18	2013	Fort Dodge
10th Avenue North Trail	PCC	0.96	2013	Fort Dodge
Sunkissed Meadows – Mason Drive Connector	PCC	0.09	2015	Fort Dodge
Karl King – Central River District Connector	PCC	0.25	2015	Fort Dodge
Sunkissed – Kenyon Road Connector	PCC	0.12	2015	Fort Dodge
Freedom Rock Loop	PCC	0.06	2016	Fort Dodge
2nd Avenue	PCC	0.07	2017	Fort Dodge
Cross Town Industrial	PCC	0.78	2017	Fort Dodge
Snell-Crawford Park – Summit Avenue Connector	HMA	0.20	2017	Fort Dodge

EXISTING UNPAVED TRAILS – 6.57 MILES				
Facility Name	Material	Length (mi)	Year Built	Jurisdiction
John F. Kennedy Park	Rock	3.50		Webster County
Soldier Creek Nature Trail	Rock	2.75	1986	Fort Dodge
Orchard Glenn Trail	Rock	0.32	2015	Fort Dodge

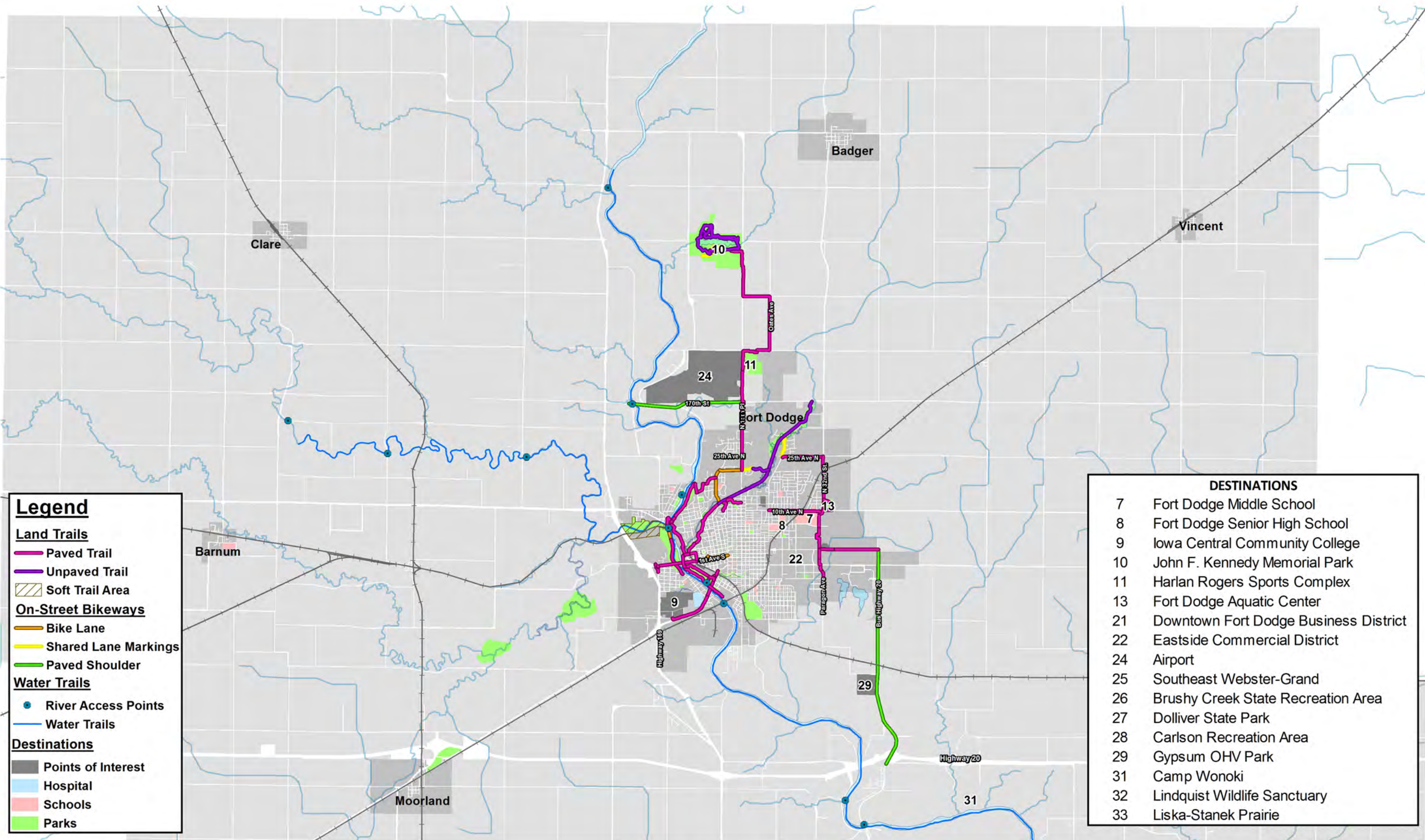
EXISTING SOFT TRAILS – 53.40 MILES				
Facility Name	Material	Length (mi)	Year Built	Jurisdiction
Brushy Creek State Recreation Area	Soft	40.56		Iowa DNR
Dolliver State Park	Soft	5.36		Iowa DNR
Northwest River District	Soft	7.48		Fort Dodge

EXISTING BIKE LANES -- 1.83 MILES				
Facility Name	Material	Length (mi)	Year Built	Jurisdiction
Phinney Park Connector	PCC	0.18	2009	Fort Dodge
20 th Avenue North	PCC	0.41	2012	Fort Dodge
Williams Drive	PCC	0.65	2012	Fort Dodge
Cross Town	PCC	0.23	2016	Fort Dodge
2nd Avenue South (Oak Hill)	PCC	0.36	2016	Fort Dodge

EXISTING SHARED LANE MARKINGS -- 0.62 MILES				
Facility Name	Material	Length (mi)	Year Built	Jurisdiction
Woodlands	PCC	0.41	2012	Fort Dodge
Orchard Glen	PCC	0.21	2015	Fort Dodge

EXISTING PAVED SHOULDERS -- 6.15 MILES				
Facility Name	Material	Length (mi)	Year Built	Jurisdiction
Quail Avenue	PCC	4.06	2013	Webster County
170th Street	PCC	2.09		Webster County

³<http://www.fd-foundation.org/cms-view-page.php?page=fort-dodge-webster-county-trails>



Legend

Land Trails

- Paved Trail
- Unpaved Trail
- Soft Trail Area

On-Street Bikeways

- Bike Lane
- Shared Lane Markings
- Paved Shoulder

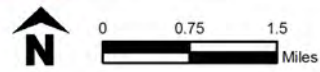
Water Trails

- River Access Points
- Water Trails

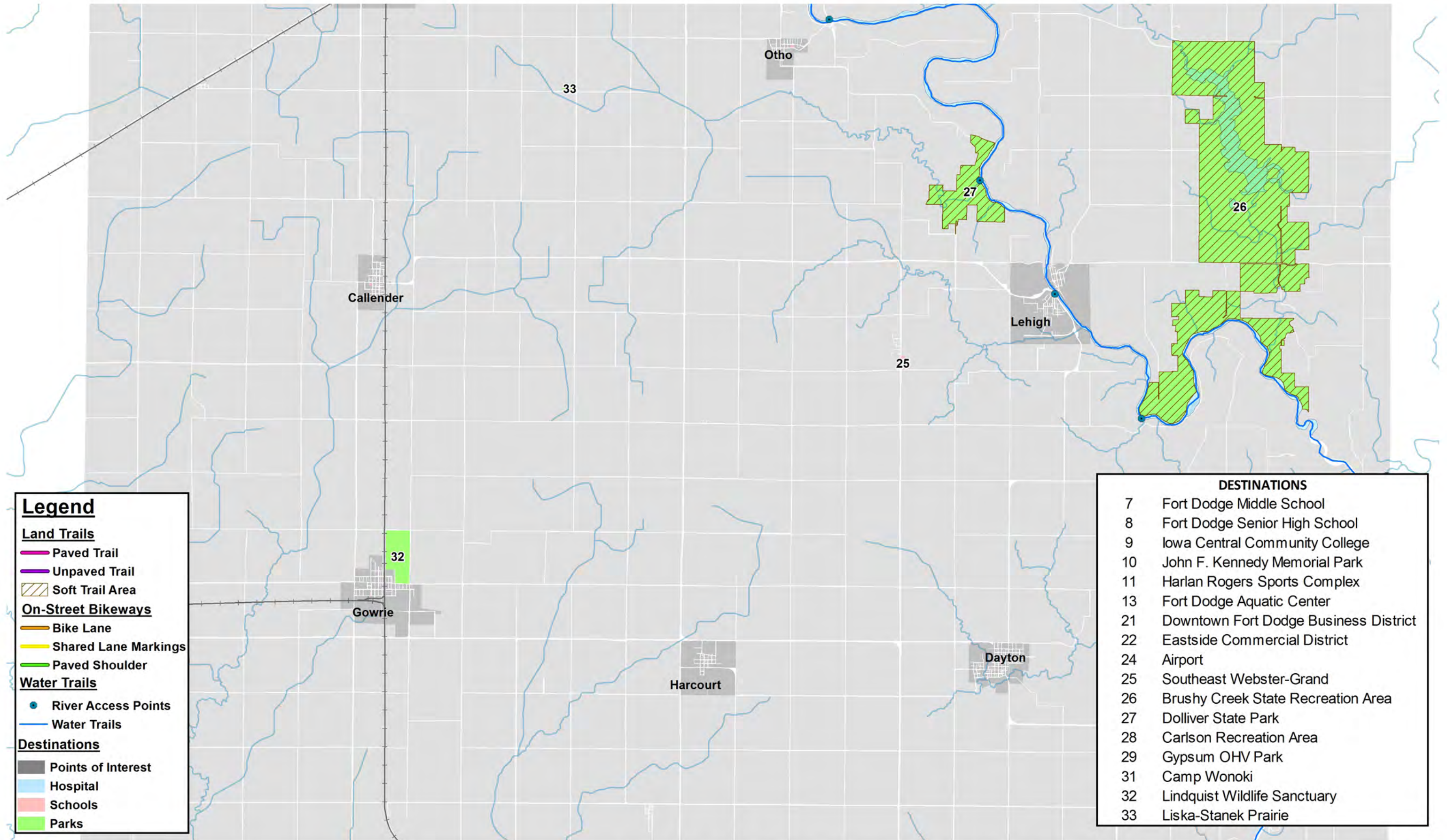
Destinations

- Points of Interest
- Hospital
- Schools
- Parks

DESTINATIONS	
7	Fort Dodge Middle School
8	Fort Dodge Senior High School
9	Iowa Central Community College
10	John F. Kennedy Memorial Park
11	Harlan Rogers Sports Complex
13	Fort Dodge Aquatic Center
21	Downtown Fort Dodge Business District
22	Eastside Commercial District
24	Airport
25	Southeast Webster-Grand
26	Brushy Creek State Recreation Area
27	Dolliver State Park
28	Carlson Recreation Area
29	Gypsum OHV Park
31	Camp Wonoki
32	Lindquist Wildlife Sanctuary
33	Liska-Stanek Prairie



WEBSTER COUNTY: EXISTING CONDITIONS



Legend

Land Trails

- Paved Trail
- Unpaved Trail
- Soft Trail Area

On-Street Bikeways

- Bike Lane
- Shared Lane Markings
- Paved Shoulder

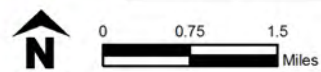
Water Trails

- River Access Points
- Water Trails

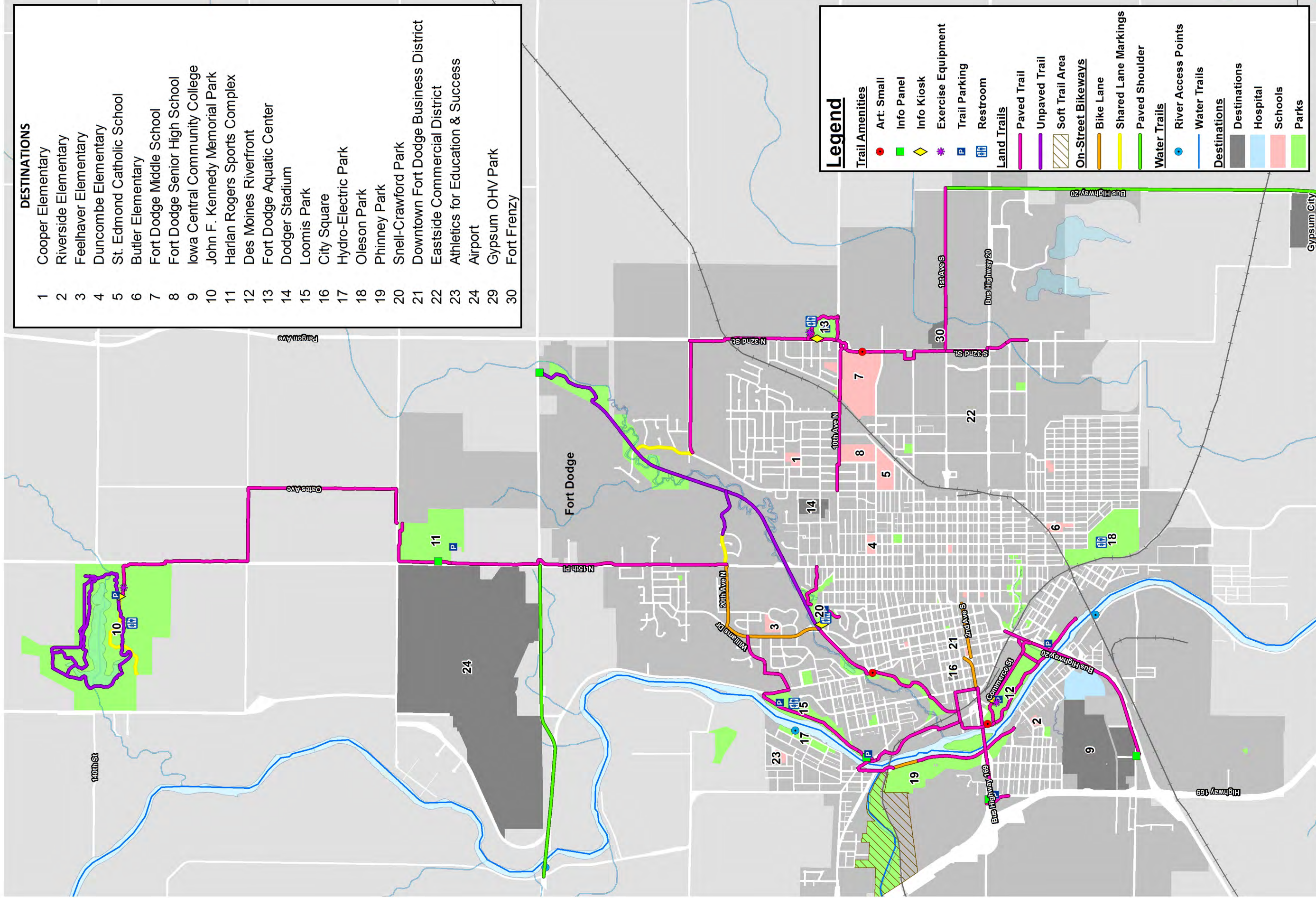
Destinations

- Points of Interest
- Hospital
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7	Fort Dodge Middle School
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33	Liska-Stanek Prairie



WEBSTER COUNTY: EXISTING CONDITIONS



DESTINATIONS

- 1 Cooper Elementary
- 2 Riverside Elementary
- 3 Feelhaver Elementary
- 4 Duncombe Elementary
- 5 St. Edmund Catholic School
- 6 Butler Elementary
- 7 Fort Dodge Middle School
- 8 Fort Dodge Senior High School
- 9 Iowa Central Community College
- 10 John F. Kennedy Memorial Park
- 11 Harlan Rogers Sports Complex
- 12 Des Moines Riverfront
- 13 Fort Dodge Aquatic Center
- 14 Dodger Stadium
- 15 Loomis Park
- 16 City Square
- 17 Hydro-Electric Park
- 18 Oleson Park
- 19 Phinney Park
- 20 Snell-Crawford Park
- 21 Downtown Fort Dodge Business District
- 22 Eastside Commercial District
- 23 Athletics for Education & Success
- 24 Airport
- 29 Gypsum OHV Park
- 30 Fort Frenzy

Legend

- Trail Amenities**
 - Art: Small
 - Info Panel
 - ◆ Info Kiosk
 - ✳ Exercise Equipment
 - Ⓟ Trail Parking
 - Ⓡ Restroom
- Land Trails**
 - Paved Trail
 - Unpaved Trail
 - ▨ Soft Trail Area
- On-Street Bikeways**
 - Bike Lane
 - Shared Lane Markings
 - Paved Shoulder
- Water Trails**
 - River Access Points
 - Water Trails
- Destinations**
 - Destinations
 - Hospital
 - Schools
 - Parks



FORT DODGE: EXISTING CONDITIONS

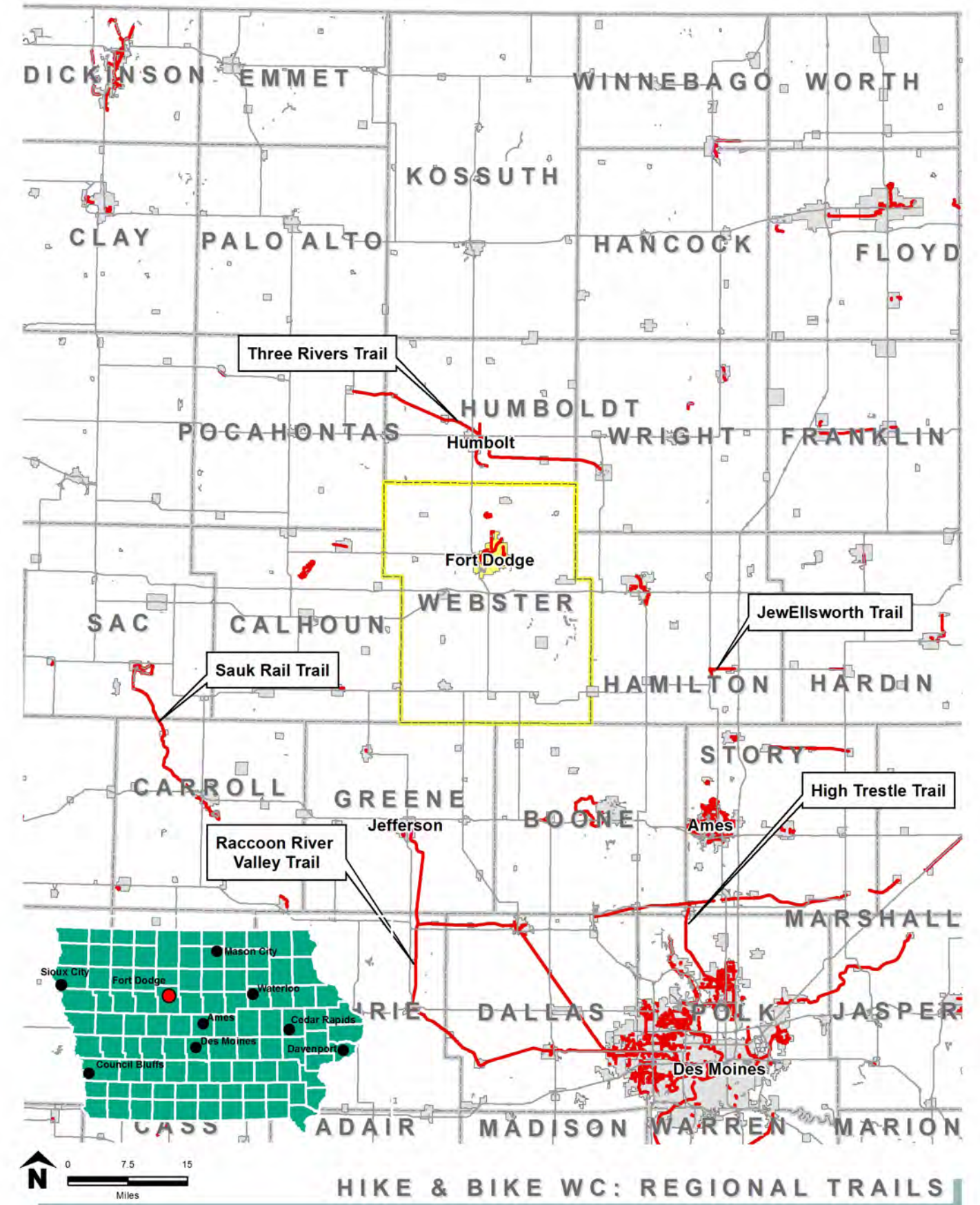
Gypsum City

REGIONAL TRAILS

Fort Dodge and Webster County are approximately an hour-long drive from four major trails in the region.

- The Three Rivers Trail is located north of Webster County and stretches from Pocahontas County, through Humboldt County, and into Wright County.
- The Raccoon River Valley Trail is located 38 miles southwest of Fort Dodge in Jefferson.
- A 58-mile drive from Fort Dodge brings trail users to Woodward, which is the current home of the westernmost trailhead for the High Trestle Trail, and a short, 3-mile trail distance to the famous High Trestle Trail Bridge.
- The Sauk Rail Trail, which connects the Black Hawk and Swan Lake State Parks, is a 55-mile drive away to the trailhead in Lake View.

Further, the Raccoon River Valley Trail and the High Trestle Trail each connect into the Des Moines metro area and the Central Iowa Trail System. Regional trails such as these draw many people away from Webster County, with 60% of survey respondents indicating they have left the area specifically to visit another trail system.



STRENGTHS AND WEAKNESSES

Identifying strengths and weaknesses regarding the conditions for trails and biking facilities helps pinpoint potential barriers to accommodating and encouraging walking and biking, and distinguishes opportunities for improvement. These were determined through visual inspection, past planning efforts, survey responses, and discussions with the Project Management Team and the Trails Advisory Board.

Strengths

The following strengths were identified for the Prairie Rivers Trail System:

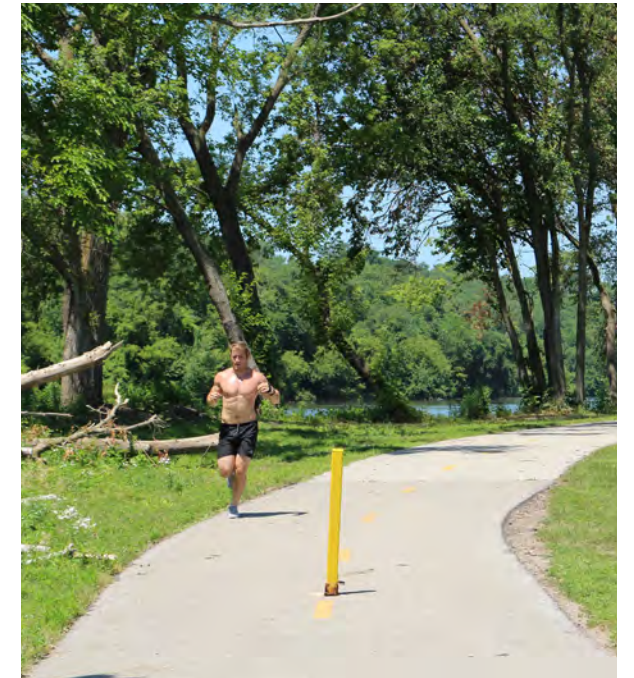
- **Geography:** Aside from the land surrounding the Des Moines River and a few residential neighborhoods on steep hills, much of Webster County's topography is relatively flat. The current trail system in Fort Dodge offers varying degrees of difficulty based upon topographical features, but is in good condition for all users. The area offers scenic views of the Des Moines River, picturesque state parks, and many local destinations that create an enticing environment for tourism and expanded local use.
- **High Use:** Strong evidence shows demand for expanded walking and biking opportunities throughout Webster County. The Hike & Bike WC survey indicated that 62% of respondents use a trail and/or bicycle facility at least a few times per month. One-quarter of respondents use the facilities a few times per week, and 11% enjoy the system on a daily basis. In the past two years, nearly half of respondents traveled outside of Webster County to visit other trail systems—indicating a need for more facilities close to home, and a potential avenue for increased tourism. The survey showed strong support for “some” or “substantial” improvement and/or expansion of trails and facilities in Fort Dodge and throughout Webster County. These results are detailed in the appendices.
- **Planning Momentum:** Fort Dodge and Webster County have undertaken significant local and regional planning and public input initiatives recently, which indicate the need for additional walking and biking facilities. These plans include:

- Re-Envision 2030: A Comprehensive Plan for the City of Fort Dodge
- Des Moines River and Lizard Creek Water Trails and Corridor Plan
- Northwest River District Neighborhood Revitalization Plan
- Webster County Comprehensive Plan
- Webster County Trail Plan
- Boone Forks Tri-County Regional Plan
- Region V Long Range Transportation Plan
- 2015 MIDAS Trails/Pedestrian Survey
- U.S. Army Corps of Engineers Des Moines River Recreation and Greenbelt Plan

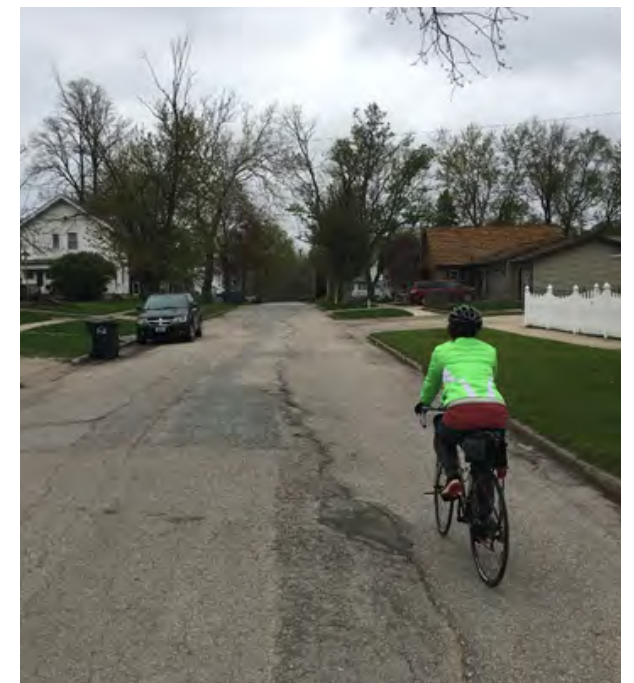
The results of these plans (which are described in Chapter 1) provide the planning momentum needed to achieve the Hike & Bike WC goals and objectives.

- A variety of existing walking and biking facilities are found throughout Fort Dodge and Webster County. The existing variety of bicycle facilities means many residents are already familiar with using or driving near many of the types of facilities proposed in Chapter 3. Some year-round use is available as the City of Fort Dodge plows 5.7 miles of their existing trail network after winter weather events.
- **Bike Friendly Streets:** Residential areas generally offer an environment that is favorable for expanding walking and biking opportunities. The low traffic volume and speed provide safe and pleasant settings for non-motorized transportation and recreation. Wider sidewalks, sidepath trails, and on-street bicycle facilities such as shared lane markings, bicycle signage, and traffic calming measures are options for enhancing walking and biking friendliness, as well as the livable qualities of neighborhoods.
- **Trails Advisory Board:** The City of Fort Dodge and Webster County have an active and dedicated board committed to trails expansion throughout the county. Having such a strong group supporting departmental staff and continuing to be enthusiastically involved is a tremendous asset to implementing a comprehensive bike, pedestrian, and trails network.
- **Opportunities to Better Utilize Existing Roadway Space:** Fort Dodge has a number of streets that were designed for a higher vehicle capacity than is needed or anticipated, which could be redesigned to accommodate bike lanes or other on-street facilities. County-wide, paved shoulders and shared lane markings could be considered as part of reconstruction and resurfacing projects in the future.

Three bridges cross the Des Moines River in Fort Dodge. Hawkeye Avenue has a protected sidepath trail along one side of the bridge. The bridges for 2nd Avenue South and East Kenyon Road both have protected sidewalks, but the sidewalks are not wide enough to accommodate bikes. The bridges may be wide enough that a redesign of the cross section lanes may allow sidepath trail or bicycle lanes. Doing so would minimize the need to construct new trail bridges across the river to facilitate the movement of people biking.



Existing trail along riverfront



Low-speed and low-volume roadways make excellent bicycle routes. When accompanied by continuous sidewalks, all ages and abilities can be safely accommodated.

- Trail Amenities: The Fort Dodge trail system has an impressive trail amenity inventory. Currently the system has five metal art markings located along the trail, as well as proposed locations for art-themed segments throughout the city, which are described in Chapter 3.

Trailheads and parking are located at John F. Kennedy Memorial Park, Harlan Rogers Sports Complex, Phinney Park, Westside Trailhead, Loomis Park, Sunkissed Meadows and the Des Moines Riverfront, Snell-Crawford Park, and Rosedale Rapids Aquatic Center.

Trailhead kiosks include wayfinding signage such as destination and distance charts, trail etiquette and rules, along with an overall system map. They are located at Sunkissed Meadows and the Des Moines Riverfront, Snell-Crawford Park, Rosedale Rapids Aquatic Center, and John F. Kennedy Memorial Park.

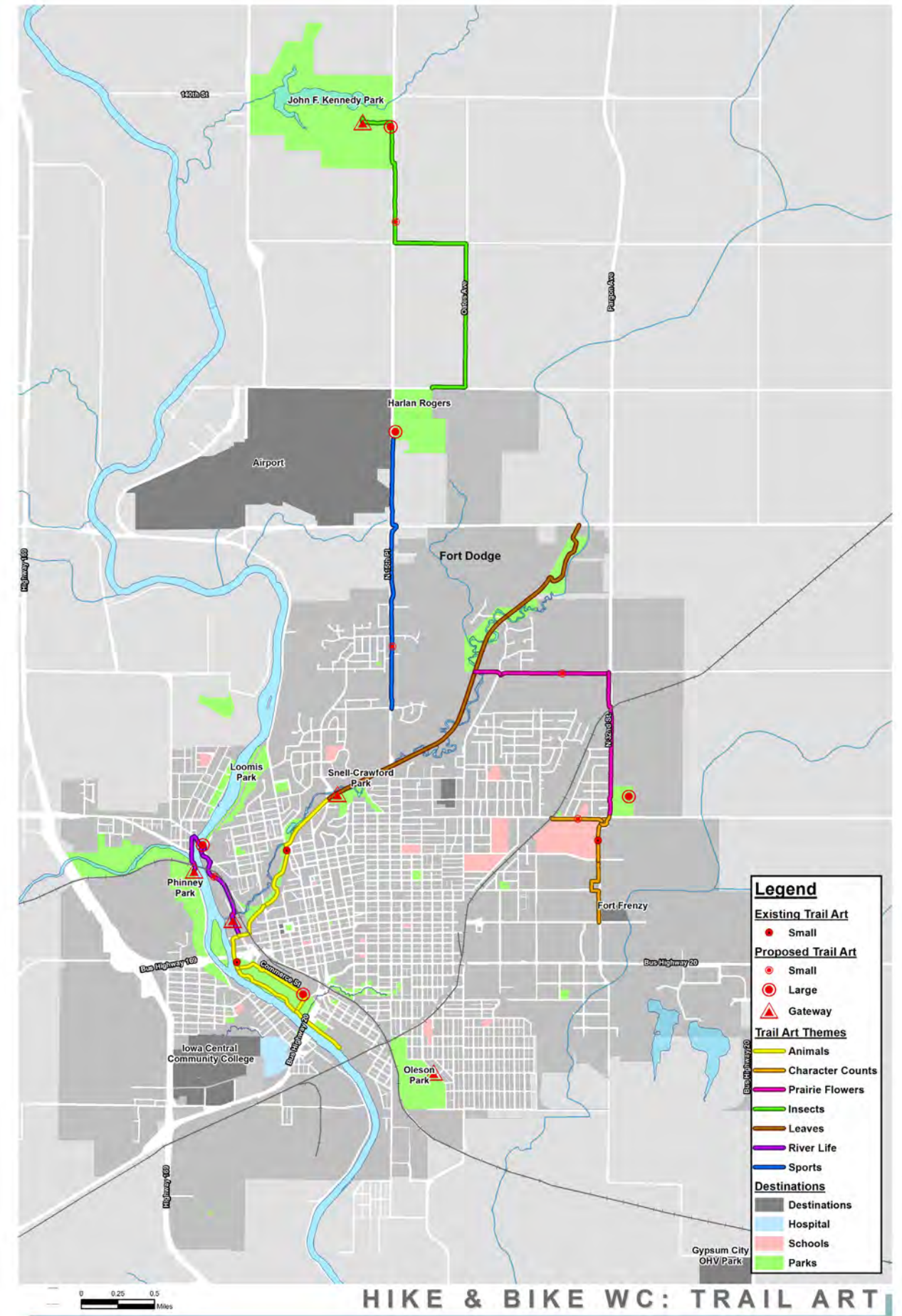
Informational panels consisting of historical information about a specific area or park and park amenities are also scattered throughout the trail system. The info panels can be found at the Westside Trailhead, Iowa Central Community College, Loomis Park, Harlan Rogers Sports Complex, and at South 9th Street and Central Avenue.



Kiosk located at Rosedale Rapids Aquatic Center



Loomis Park info panel



Weaknesses

The following are the identified weaknesses, and strategies for overcoming or lessening them:

- **Major Roads:** Regardless of the collective level of experience a community has with walking and biking for transportation and recreation, safety is always a significant concern. In an area with multiple major roadways with high volume and/or high speeds, many people feel uncomfortable and unsafe during traffic interactions on-street or at crosswalks. The Hike & Bike WC survey indicated that heavily trafficked streets are a barrier to walking and biking without safe, dedicated facilities.

Fort Dodge is bordered to the west by Iowa Highway 169, and on the south by U.S. Highway 20. Business 169 and Business 20 both bisect the city, making traveling by bike or foot a challenge in these areas of the community. Additional high-traffic roadways and DOT reported bicycle and pedestrian related crashes include:

- 15th Street (3 crashes)
- 10th Avenue North (3 crashes)
- 2nd Avenue North (4 crashes)
- 1st Avenue South (2 crashes)
- North 32nd Street (5 crashes)
- Hawkeye Avenue (0 crashes)
- North 3rd Street (0 crashes)
- South 22nd Street (1 crash)

These roadways contain a combination of frequent semi-truck traffic, tight roadways, and high speeds. Hawkeye Avenue, North 32nd Street, and 10th Avenue North already have sidepath trails to improve bike and pedestrian mobility around the community, but the safety of these facilities for non-motorized traffic should be monitored and adjusted as needed.

- **Major Waterways:** The Des Moines River bisects Fort Dodge on the west side of the city. Some of the areas surrounding the river throughout Fort Dodge and Webster County have steep slopes and difficult terrain that are not as conducive to paved trail construction as other developed areas of the city. The combination of the Des Moines River and Lizard Creek nearly isolate the Northwest River District from the rest of Fort Dodge, with Hawkeye Avenue as the only connection to the main areas of town.

- **Railroads:** The Canadian National Railway bisects the City of Fort Dodge and Webster County from east to west. In Webster County, the railroad serves the cities of Duncombe, Fort Dodge, and Barnum. The Union Pacific Railroad also runs through Webster County from north to south, serving the cities of Clare, Moorland, Callender, Gowrie, Fort Dodge, and Vincent. A total of 19 at-grade crossings are located throughout Fort Dodge, with two at-grade trail crossings and 80 at-grade crossings throughout Webster County. Any additional crossings must be designed for people riding bikes to cross perpendicular to the tracks and have a clear view of oncoming trains.
- **Maintenance:** Smooth riding conditions are a necessary precursor to developing effective on-street facilities and trails. Cracks and holes of any size can be hazardous to people on bikes. They create a fall risk, or may force the rider to swerve in traffic—increasing the risk of negative vehicle-bike interactions.



Roadway provides sidewalks, but no bicycle facility.

3 ENGINEERING: THE BICYCLE AND TRAILS NETWORK

Proposed Network

- Destinations

Trail Facility Types and Recommendations

- Paved Trails (Shared Use Paths)
- Soft Trails

On-Street Bikeway Facility Types and Recommendations

- Signed Bike Routes
- Shared Lane Markings (SLM's or Sharrows)
- Bicycle Lanes
- Paved Shoulders

Intersection Treatments

- Signal Detection for Bicyclists
- Active Warning Beacons
- Bike Signal Heads
- Pavement Markings Through Intersections
- Raised Crosswalks/Raised Intersections

Amenities

- Wayfinding Signage
- Trail Art
- Trail Memorial Benches

Prioritization

PROPOSED NETWORK

The recommended on-street and trails network is for a comprehensive expansion and diversification of bicycle and trail facilities to meet the needs of beginner, intermediate, and advanced bicyclists. In total, five different bikeway types are included: Paved Trails (Shared Use Paths), Soft Trails, Signed Bike Routes, Shared Lane Markings (sharrows), Bicycle Lanes, and Paved Shoulders. There are existing Unpaved Trails as well, but no additional Unpaved Trails are recommended in this section.

The network should take into account the Engineering element of the Five E's, which strives to create a bicycle friendly community through safe and efficient bicycling facilities. This element also encourages communities to consult with design guidelines and requirements when designing off-street trails and on-street bicycle facilities. Following these guidelines helps communities develop safe and functional bicycle facilities that reflect the most recent research and practices.

Design Guidelines

Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)
- U.S. Department of Transportation, Federal Highway Administration (FHWA)

Guide for the Development of Bicycle Facilities
- American Association of State Highway and Transportation Officials (AASHTO)

Urban Bikeway Design Guide
- National Association of City Transportation Officials (NACTO)

Urban Street Design Guide
- National Association of City Transportation Officials (NACTO)

Iowa Statewide Urban Design and Specifications (SUDAS)
- Institute for Transportation, Iowa State University

The Essentials of Bike Parking
- Association of Pedestrian and Bicycle Professionals

Separated Bike Lane Planning and Design Guide
- U.S. Department of Transportation, Federal Highway Administration (FHWA)

Small Town and Rural Multimodal Networks
- U.S. Department of Transportation, Federal Highway Administration (FHWA)

America's Rails-with-Trails
- Rails to Trails Conservancy

Rails-with-Trails: Lessons Learned
- U.S. Department of Transportation, Federal Highway Administration (FHWA), Federal Railroad Administration, National Highway Traffic Safety Administration, Federal Transit Administration

DESTINATIONS

The planning process included considerations for connecting to major regional trails such as the Three Rivers Trail, High Trestle Trail, and the Raccoon River Valley Trail. These existing trails are a significant distance from Fort Dodge—some may be a day's bicycle ride—so the PMT decided that these connections were best suited as part of a long-term vision for regional connections. Further, the connections to the south will require coordination with Greene and/or Boone Counties in order to be built.

The public opinion survey indicated that a popular connection would be between Fort Dodge and the Three Rivers Trail in Humboldt County. This is the closest of the three regional trails considered. As such, the portion of this route within Webster County, which would lead to Badger and continue further north along Paragon Avenue, is included in the proposed network maps.

Identifying popular local destinations for people walking and biking is important when developing a trail and bicycle facility network. Providing access to these areas will increase trail user trips, improve overall quality of life throughout Webster County, and encourage tourism. The Hike & Bike WC survey conducted for this planning process identified that 53 percent of respondents would like to see trail connections completed within and around Fort Dodge as their top priority. Connecting small towns and rural destinations to Fort Dodge came in second with 22 percent of respondents choosing this as their top priority.

Some of the top destinations in Webster County identified through past planning efforts and the Hike & Bike WC survey include:

Educational Facilities

Elementary Schools – Cooper, Riverside, Feelhaver, Duncombe, Community Christian, and Southeast Webster-Grand, St. Edmond Catholic School, St. Paul Lutheran, Butler Elementary,

Middle Schools – Fort Dodge Middle School, St. Edmond Middle School

High Schools – Fort Dodge Senior High School, Southeast Valley High School, St. Edmond High School

Post-Secondary – Iowa Central Community College

Parks and Recreation Areas

State – Brushy Creek State Recreation Area, Dolliver State Park

County – John F. Kennedy Memorial Park, Camp WaNoki

Local – Harlan Rogers Sports Complex, Riverfront, Rosedale Rapids Aquatics Center, Dodger Stadium, Gypsum OHV Park, Loomis Park, City Square

Business Districts

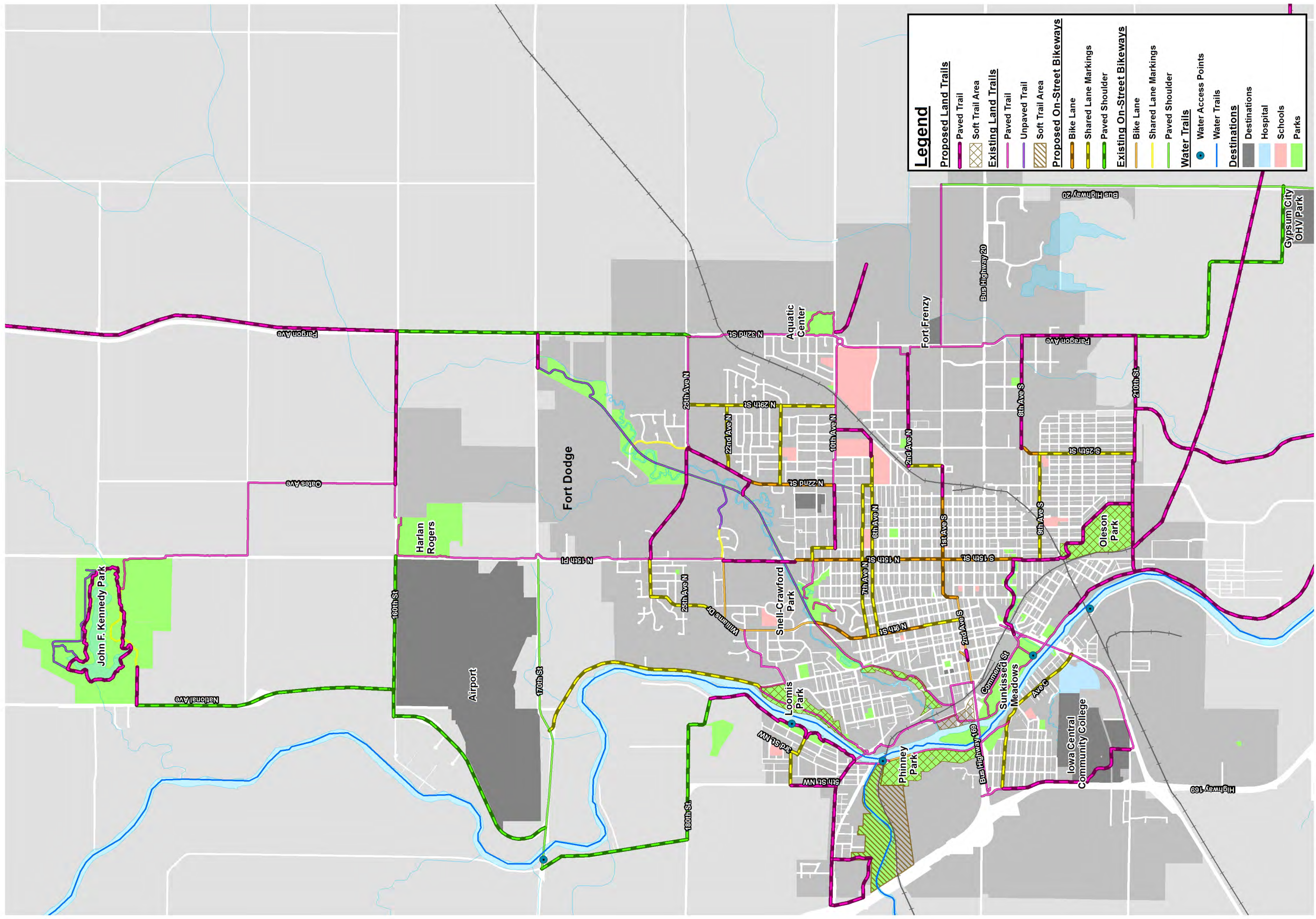
Downtown Fort Dodge, Eastside Commercial District, Eastside Commercial District (between 1st Ave S and 5th Ave S), and Northwest River District

Webster County Communities

Fort Dodge, Badger, Clare, Moorland, Callender, Lehigh, Dayton, Harcourt, Gowrie, Duncombe, Vincent

The Community Orchard

Soldier Creek Winery



Legend

Proposed Land Trails

- Paved Trail
- Soft Trail Area

Existing Land Trails

- Paved Trail
- Unpaved Trail
- Soft Trail Area

Proposed On-Street Bikeways

- Bike Lane
- Shared Lane Markings
- Paved Shoulder

Existing On-Street Bikeways

- Bike Lane
- Shared Lane Markings
- Paved Shoulder

Water Trails

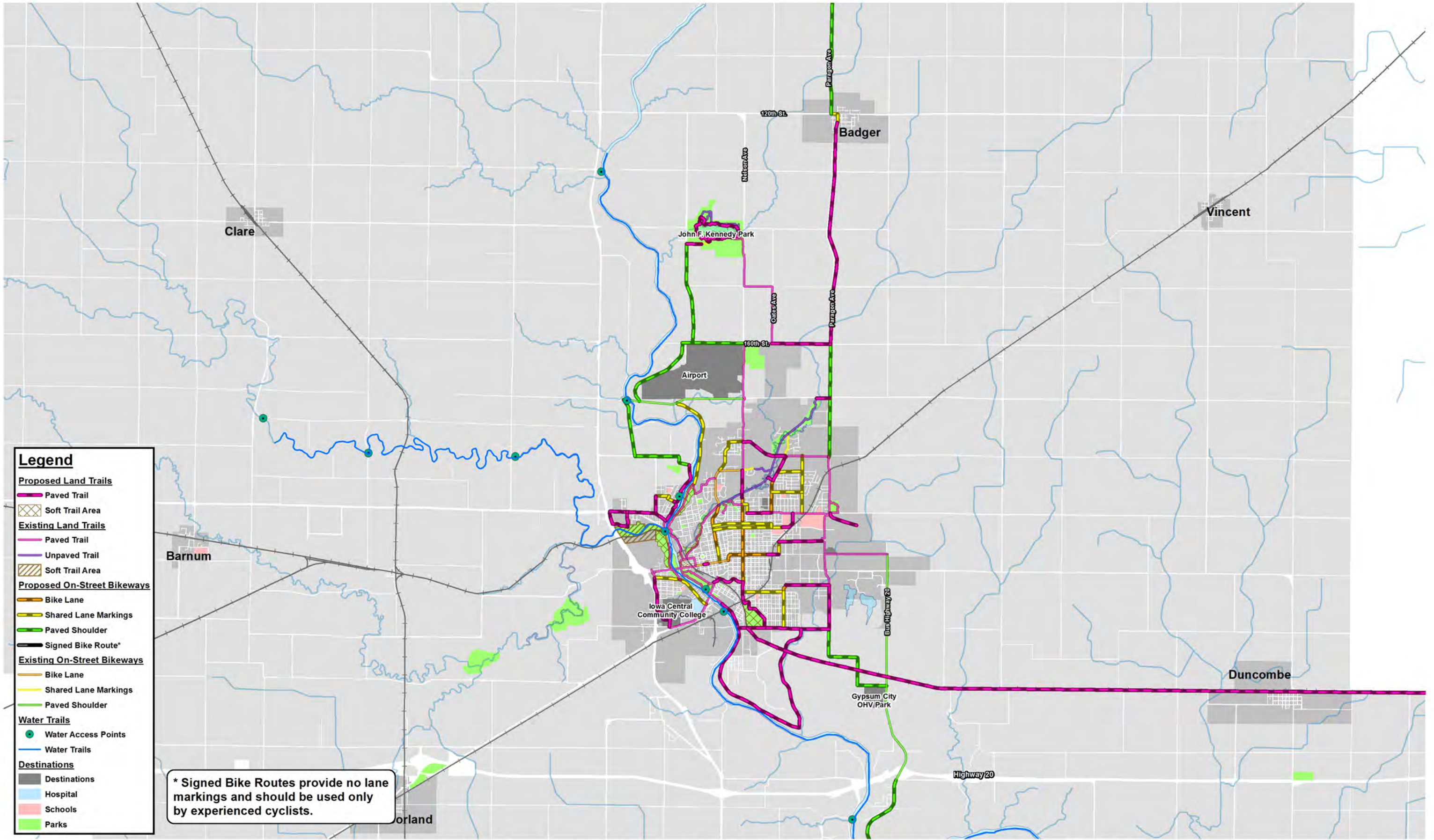
- Water Access Points
- Water Trails

Destinations

- Destinations
- Hospital
- Schools
- Parks



HIKE & BIKE WC: EXISTING AND PROPOSED FACILITIES



Legend

Proposed Land Trails

- Paved Trail
- Soft Trail Area

Existing Land Trails

- Paved Trail
- Unpaved Trail
- Soft Trail Area

Proposed On-Street Bikeways

- Bike Lane
- Shared Lane Markings
- Paved Shoulder
- Signed Bike Route*

Existing On-Street Bikeways

- Bike Lane
- Shared Lane Markings
- Paved Shoulder

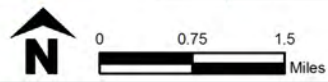
Water Trails

- Water Access Points
- Water Trails

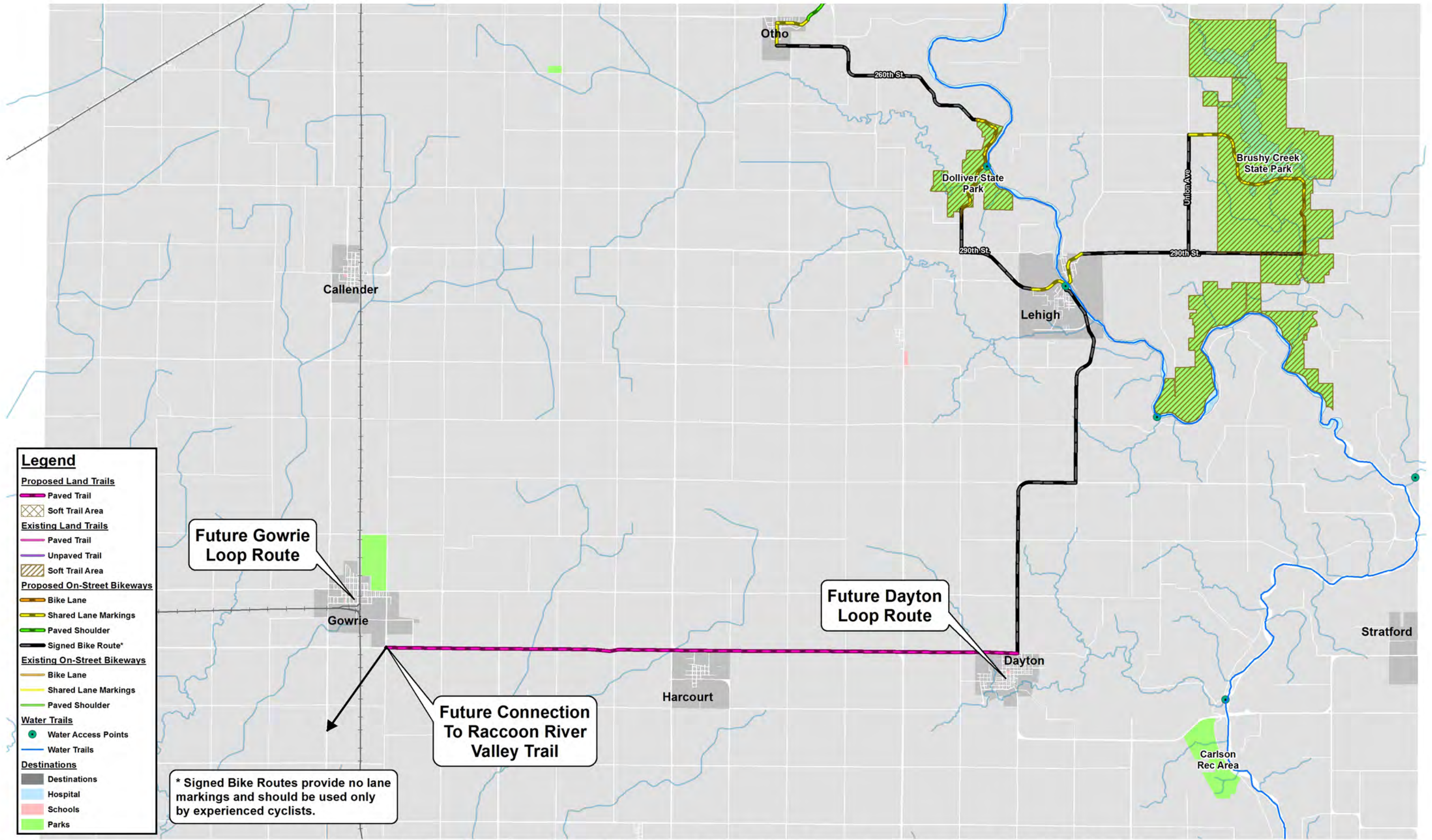
Destinations

- Destinations
- Hospital
- Schools
- Parks

* Signed Bike Routes provide no lane markings and should be used only by experienced cyclists.



HIKE & BIKE WC: EXISTING AND PROPOSED FACILITIES



HIKE & BIKE WC: EXISTING AND PROPOSED FACILITIES

TRAIL FACILITY TYPES AND RECOMMENDATIONS

PAVED TRAILS (SHARED USE PATHS)

Trails are designed for people walking, running, biking, skating, or just enjoying the outdoors. Trails accommodate two-way bicycle and pedestrian traffic flow and are physically separated from motorized vehicle traffic. Trails should be at least 10 feet wide, with 8 feet allowed only in constrained circumstances. Some communities prefer 12-foot wide trails because the extra width allows bicyclists and pedestrians to travel side-by-side without obstructing oncoming users, and allows for easier passing of slower trail users.

The preferred location for a trail is in an area that is completely removed from vehicular traffic, but with various locations to connect into a sidewalk and on-street bike facility network. Trails located in an independent right-of-way often follow waterways (greenways), utility corridors, or former railroad lines.

Proposed Trails - Webster County			
Facility Name	From-To	Length (mi)	Phase
Paragon Avenue Trail (Badger Connection)	Soldier Creek Winery - Badger	3.88	Medium
John F. Kennedy Park Paving	Existing Trail	2.3	Medium
Scenic Drive Trail	Hydro Electric Park – Scenic Drive	0.51	Low
Canadian National Rail Trail	Parallel to existing Railroad ROW East to county line	12.66	Low
Dayton to Gowrie Trail	Dayton - Gowrie	10.96	Low
Total		30.31	



Greenway Trail (Fort Dodge, Iowa)

The proposed continuation of the existing trail network in Fort Dodge and Webster County will help address existing gaps and barriers in the transportation system and make local connections.

Proposed Trails - Fort Dodge			
Facility Name	From-To	Length (mi)	Phase
2nd Ave Trail	Bike Lane – Bike Lane	0.07	High
15th Avenue S	Railroad – Oleson Park Ave.	0.46	High
25th Avenue N Connection	N 15th St. – 25th Ave N	0.82	Low
32nd Street Connection	Soldier Creek Nature Trail – N 32nd St.	0.22	Medium
160th Street	Oates Ave – Soldier Creek Winery	1.02	Medium
Elanco Connection	Loomis Park connector – 6th Ave NW	0.49	Medium
Butler Elementary Connection	S 25th St. – S 32nd St.	0.75	High
Iowa Central Community College	Avenue C – Kenyon Road Trail	1.01	High
Cross Town Connector	S 2nd St. – N 32nd Street Trail	0.94	Medium
Dodger Stadium Connection	N 16th St. – N 22nd St.	0.42	Medium
Gypsum Creek Crossing Trail	Aquatic Center – Gypsum Creek	0.52	High
High School Connection	10th Ave N. Trail – 6th Ave N.	0.37	Medium
North 22nd Street Connection	Soldier Creek Nature Trail – N 22nd St.	0.11	High
Northwest River District System	5th St. NW – Highway 69 – Lizard View Park	2.25	Low/Medium
North 15th Street	20th Ave N – Floral Ave	0.48	High
North 22nd Street	N 22nd St. Connection – 25th Ave N Trail	0.47	High
Oleson Park Loop	S 17th St – 210th St– Paragon Ave–8th Ave S	2.93	High
Oleson Park Trail	Oleson Park N Entrance – 12th Ave S	0.31	High
South River Loop	Little Dam Trail- south along river, north to 210th St.	5.09	High
S 15th Street Trail	Mason Memorial Park Drive – Oleson Park	0.30	High
Total		19.03	

Sidepath Trails

Sidepath trails are located along the side of a road, typically sharing street right-of-way and essentially functioning as a wide sidewalk.

While sidepath trails may be one of the simplest ways to accommodate both bicyclists and pedestrians, they are often not the best way to accommodate both of these types of trail users. Because bicyclists travel much faster than pedestrians, bicycle travel along a sidepath trail can be fraught with many challenges.

The Guide for the Development of Bicycle Facilities, developed by the American Association of State Highway and Transportation Officials (AASHTO), 2012, provides a summary of issues related to sidepaths. Perhaps the most serious challenge is mitigating the danger associated with cyclists traveling against the vehicular traffic flow while on the sidepath. Right turning drivers look left more frequently than they look right, thus failing to notice cyclists coming from the right.¹ Contra-flow cyclists must be diligent to not bike into the path of a car preparing to make a right turn.



Sidepath Trail (Fort Dodge, Iowa)

This issue is exemplified at the intersection of N 22nd Street and 22nd Avenue N, with the proposed sidepath trail along the east side of N 22nd Street. In this case, the intersection is not perpendicular, but is skewed at an angle with 22nd Avenue running east-west and N 22nd Street running northeast-southwest. Motorists who are stopped at 22nd Avenue N may have difficulty seeing cyclists coming from the northeast due to the angle of the intersection of the two streets. If the motorist is turning right, they are likely to look to the left, which makes them even more likely to not see a cyclist coming from the right.

Because of this potential conflict point, the design of the trail and intersection should consider alterations that would place the trail user in clear view and slow the motorist prior to turning. This should include additional signage to alert both motorists and cyclists to the upcoming intersection and may also include a painted crosswalk, tightening the right-turn radius for both west to northbound and north to eastbound motorists, and/or moving the crossing point back from the intersection.



Skewed intersection of N 22nd Street and 22nd Avenue N - aerial view (Fort Dodge, Iowa)



Skewed Intersection of N 22nd Street and 22nd Avenue N – facing west (Fort Dodge, Iowa)

¹Summala, Pasanen, Rasanen, Sievanen. Helsinki, Finland, 1996

Sidepath trails can be excellent bicycle accommodations in areas where there are few driveways or cross streets, such as along a body of water, along a golf course or cemetery, or to accommodate slower or less experienced cyclists (potentially near schools or parks). The sidepath trail may be accompanied by an on-street bicycle facility to better accommodate the more experienced cyclists, particularly in areas where there may be heavy cycling activity.



Sidepath trails may be supplemented by an on-street bicycle facility. This allows pedestrians and slower cyclists (e.g. children) to use the sidepath, while faster cyclists may choose to bike on the street. (Indianola Ave., Des Moines, IA)



Sidepath trails may be appropriate along rural roadways with a few low-volume driveways or intersections. (Gay Lea Wilson Trail)

Rails with Trails

In some cases, trails can share existing railroad right-of-way with an active railway. The Canadian National Railway runs through Fort Dodge and east through Duncombe and to Webster City and beyond. This railway presents an opportunity to develop a “rail with trail” facility. More than 70 percent of rails with trails include a physical barrier between the active rail lines and the trail. Treatments may include fences, vegetation, or other physical barriers to prevent trespassing.



“Rail with Trail” facility using a chain link fence as a barrier (P)

Source: https://www.portlandpedalpower.com/wp-content/uploads/2014/02/Optimized-rail_with_trail_conservancy.jpg

SOFT TRAILS

Soft Trails are typically dirt surface trails that can be used as nature trails for hiking and sometimes also serve as mountain bike trails. Mountain bike trails allow users to ride off-road for sport or recreation, often over rough terrain. They often also serve as hiking trails for pedestrians who want get closer to nature.

The existing soft trails in Dolliver Memorial State Park are reserved exclusively for nature hiking. The soft trails in Brushy Creek State Recreation Area allow hiking along with mountain biking, snowmobiles, and equestrian use.

In Fort Dodge, soft trails in the Northwest River District near Lizard Creek allow both hiking and biking, but are not appropriate for snowmobiling or equestrian usage.

These areas have been identified for soft trails: Phinney, Oleson, Loomis, and Snell-Crawford Parks along with the Soldier Creek Corridor.

Whether for hiking or mountain biking, trails should be designed to minimize potential for erosion or other environmental problems. Following the guidelines of the International Mountain Bicycling Association (IMBA) for single track design will ensure the most sustainable trail design and construction.

Mountain bike trails are designed to utilize the natural terrain to explore the topography and features of an area. The ideal trail avoids “flow killers” such as sharp turns, incongruent features, and disjointed climbs and descents. Instead, they utilize undulations and banked turns to reward smooth, deliberate riding and maximizing forward motion.

When designing mountain bike trails, side slopes should be between 20% and 60% and should discourage steep slopes. The minimum length of the trail should be about a third of a

mile in urban environments and about twice that in other areas. Trails must have a net elevation loss. Uphill sections should not comprise more than 10% of the trail length and the average trail grade should be between 5% and 10% in the descending direction.

Trails can be developed with varying levels of skill required. Entry level trails are important to allow newcomers to the activity, while more challenging courses are important to keep riders engaged.



Lizard Creek Nature Trail



Lizard Creek Access and Phinney Park

ON-STREET BIKEWAY FACILITY TYPES AND RECOMMENDATIONS

SIGNED BIKE ROUTES

Signed bike routes consist of signage alone, with no on-street markings or separated facilities to accommodate cyclists. Signage options include the “Bike Route” sign, “Bikes May Use Full Lane,” or the Bicycle Warning sign.

When they are used on roads that are posted at 25 mph or less, with low volume, and good visibility, they can provide an easy connection for many types of users between other bicycle facilities.

If they are used on higher speed or higher volume roads when other accommodations are not possible, they should be used by only the most experienced cyclists. The routes proposed in Webster County are on low volume roadways with high speed limits of 55 mph. Signage should make motorists aware of the potential for bicyclists to be in the area and bicyclists should make every effort to be visible and predictable when biking along these routes.

Signed Bike Routes - Webster County					
Facility Name	From – To	Length (mi)	Priority	Traffic Volume	Speed Limit
255th Street	N Highway St – Dolliver St	1.29	Low	960	55 mph
260th Street	Dolliver St – Dolliver State Park	2.66	Low	360	55 mph
290th Street (East)	Lehigh – 270th St	3.86	Low	530	55 mph
290th Street (West)	Brushy Creek Dr. – Lehigh	1.46	Low	640	55 mph
330th Street	Sampson Ave to Racine Ave	1.00	Low	N/A	55 mph
Dolliver Park Ave (south)	South Park entrance – 290th St	0.78	Low	280	55 mph
Dolliver Street	255th St – 260th St	0.29	Low	280	55 mph
Racine Avenue	330th Street – 6th Ave NW Dayton	2.89	Low	40	55 mph
Samson Avenue	Lehigh – 330th Street	3.61	Low	650	55 mph
Union Avenue	270th St – 290th St	2.04	Low	820	55 mph
Total		19.88			



"Bikes May Use Full Lane" (St. Paul, MN)
Source: <http://archive.constantcontact.com/fs005/1101544032920/archive/1106909888094.html>



Bicycle warning sign (DE)
Source: <http://www.1stbikes.org/2014/02/share-road-plaque-removal-in-delaware.html>

SHARED LANE MARKINGS (SLMs OR SHARROWS)

Shared-lane markings are pavement markings applied to a thoroughfare with vehicular speeds and volumes low enough to allow cyclists to move safely with motor vehicles. Shared lane markings are high-visibility pavement markings that help position bicyclists within a shared vehicle and bicycle travel lane. Shared lane markings may be supplemented by “Bikes May Use Full Lane” signage.

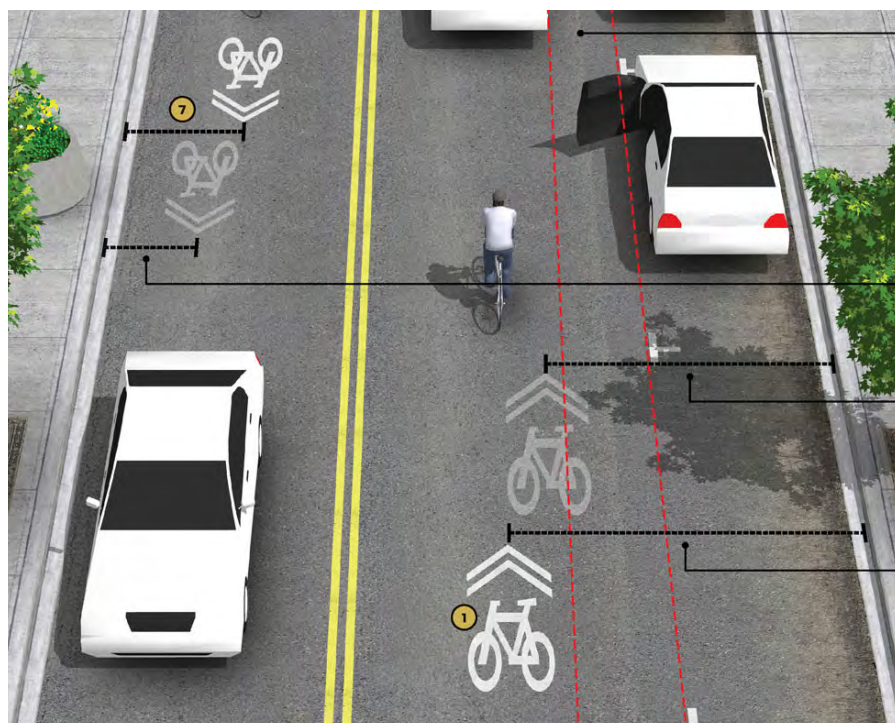
The suitability of a shared roadway decreases as motor vehicle traffic speeds and volumes increase. For a local street to function acceptably for bicyclists as a shared roadway, traffic volumes should not be more than 3,000 annual average daily traffic (AADT) volume, and speeds should be 25 mph or less. If traffic speeds and volumes exceed these thresholds, separated facilities (bicycle lanes) should be considered, or traffic calming and diversion techniques should be applied, as described under the next section, Quiet Streets.

The plan identifies approximately 11.43 miles of SLM’s in Fort Dodge. There is one small section of N 9th Street, which exceeds the 3,000 AADT recommended maximum for shared lane markings. This is only one block in the downtown area, with on-street parking and streetscaping elements, such as paver crosswalks. As a short section of roadway (300 feet), with traffic that is likely to be traveling at less than 25 mph, shared lane markings are an acceptable form of bicycle accommodation.

N 7th Street has a speed limit of 35 mph but only has 740 average annual daily traffic counts. The paved street width is approximately 24 feet and does not provide any bicycle or pedestrian accommodations. The Des Moines River is immediately west of the roadway, and the proximity creates an abrupt drop off to the river channel and limiting potential road widening or construction of a side path.

The posted speed limit exceeds the recommended maximum of 25 mph for shared lane markings. Therefore, in conjunction with shared lane markings, traffic calming and speed reduction should be implemented along the roadway.

The road currently has a double yellow, no passing, center line. The proposed shared lane markings should be accompanied by “Bikes May Use Full Lane” signage to reinforce that cyclists should not be pushed to the side of the roadway and that motorists should not try to pass the cyclists.



Shared Lane Markings Design Guidance (Urban Bikeway Design Guide, NACTO)

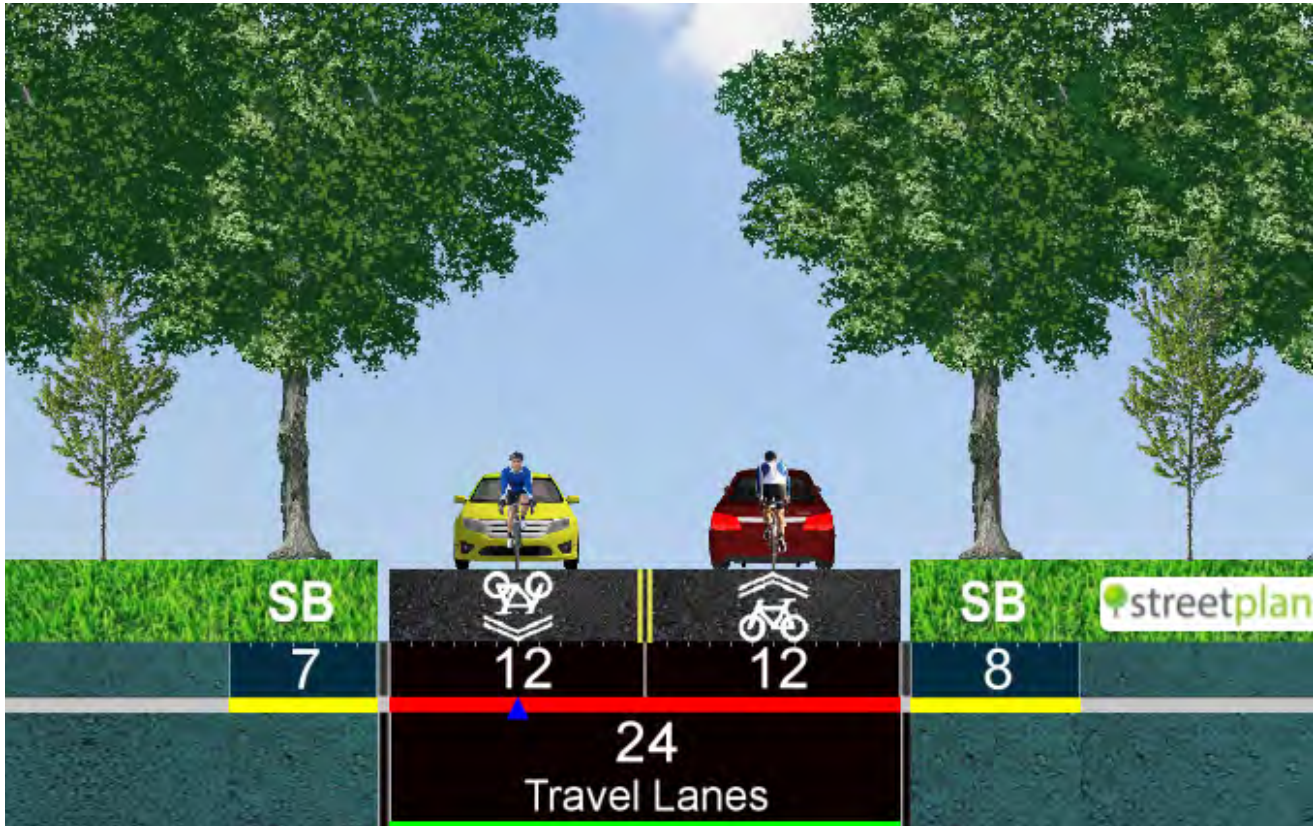


N 7th Street (Fort Dodge, IA)



Proposed Shared Lane Markings - Webster County					
Facility Name	From – To	Length (mi)	Priority	Traffic Volume	Speed Limit
3rd Street NW	5th Ave NW – 6th Ave NW	0.05	Medium	N/A	25 mph
5th Avenue NW	1st St NW – 3rd St NW	0.13	Medium	N/A	25 mph
6th Avenue N	N 9th St – N 25th St	2.00	High	2,790	25 mph
6th Avenue NW	3rd St NW – 5th St NW	0.23	Medium	N/A	25 mph
7th Avenue N	N 9th St – N 22nd St (S to 6th)	1.08	High	2,650	25 mph
9th Avenue S	S 17th St – S 25th St	0.71	Low	N/A	25 mph
12th Avenue N	N 15th St – N 16th St	0.08	Medium	1,500	25 mph
16th Avenue N	N 22nd St – N 29th St	0.52	Low	1,260	25 mph
22nd Avenue N	N 29th St – N 22nd St	0.43	Low	N/A	25 mph
28th Avenue N	Williams Dr – N 15th St	0.25	Low	850	25 mph
Avenue C	A Street – Kenyon Rd	1.08	High	2,650	25 mph
N 7th Street	Loomis Park Dr – 170th St	1.67	High	740	35 mph
N 9th Street	1st Ave N – 2nd Ave S	0.26	Medium	5,000	25 mph
N 16th Street	12th Ave N – 10th Ave N	0.15	Medium	N/A	25 mph
N 29th Street	10th Ave N – 25th Ave N	0.99	Low	N/A	25 mph
S 2nd Street	1st Ave S – 2nd Ave N	0.22	Medium	N/A	25 mph
S 25th Street	9th Ave S – 15th Ave S	0.64	High	3,860	25 mph
Williams Drive	20th Ave N – 28th Ave N	0.54	Medium	2,500	25 mph
Total		11.03			

Proposed Shared Lane Markings - Other Jurisdictions						
Facility Name	From – To	Length (mi)	Priority	Traffic Volume	Speed Limit	Jurisdiction
1st Street SE	2nd Ave SE – E Center Ave	0.14	Low	N/A	25 mph	Badger
W Center Avenue	Paragon Ave – 1st St N	0.11	Low	1,610	25 mph	Badger
6th Avenue NW	Racine Ave – 3rd St NW	0.34	Low	N/A	25 mph	Dayton
290th Street (West)	Samson Ave – Taylor Rd	1.39	Low	640	20 mph	Lehigh
Main Street	290th St – Mill St	0.07	Low	640	20 mph	Lehigh
N Highway Street	School St – 255th St	0.40	Low	N/A	25 mph	Otho
School Street	N Highway St – City Boundary	0.54	Low	770	25 mph	Otho
Brushy Creek State Park - 270th Street	Union Ave – 290th St	3.91	Low	180	20 mph	Iowa DNR
Dolliver Park Avenue	Dolliver Park Entrance – 286th St	2.02	Low	280	20 mph	Iowa DNR
Total		8.92				



Example Shared Lane Markings

All the routes recommended to be shared lane markings could be considered the base level quiet street. Quiet streets are low-volume and low-speed streets where motorists and bicyclists share the same space. There are increasing levels of implementation for a quiet street. At the most basic level, a quiet street may include shared lane markings and wayfinding signage to establish the bicycle-friendly route.

If vehicular speed is an issue, traffic calming techniques may be incorporated. If vehicular volume is an issue, traffic diversion may be used to prohibit certain turning movements by motorists, but not by bicyclists or pedestrians. A complete quiet street should also provide sidewalks for pedestrians.

Quiet streets work best in well-connected street grids where riders can follow reasonably direct and logical routes and motorists can choose to take alternate routes. By calming and possibly diverting traffic, quiet streets also improve conditions for pedestrians.

Quiet streets attract bicyclists who do not feel comfortable on busier streets and prefer to ride on lower traffic streets.

BICYCLE LANES

Many of the recommended bike lanes in Fort Dodge require reallocating street widths through striping modifications such as lane narrowing, parking removal, and four-to-three lane conversions. The table below shows proposed bike lanes in Fort Dodge.

Proposed Bicycle Lanes - Fort Dodge					
Facility Name	From – To	Length (mi)	Priority	Traffic Volume	Speed Limit
1st Avenue S	S 13th St – S 20th St	0.76	High	8,000	25 mph
N 9th Street	1st Ave N – Williams Dr	0.77	Medium	5,800	25 mph
N 15th Street	Central Ave – Floral Ave	0.91	High	11,500	25 mph
N 22nd Street	10th Ave N – Northridge Trail	0.56	High	4,430	25 mph
S 15th Street	8th Ave S – Central Ave	0.60	High	10,300	25 mph
S 25th Street	8th Ave S – 9th Ave S	0.14	Medium	3,860	25 mph
Total		3.74			

Different types of bicycle lanes can be used on different roadways depending on the width of the street, traffic volume, speed, and the presence of on-street parking. Conventional bike lanes, buffered bike lanes, separated bike lanes, and advisory bike lanes each have pros and cons to consider when deciding where to implement them. The appendix contains specific design recommendations for each of the proposed bike lane routes.



Williams Drive Conventional Bike Lane (Fort Dodge Iowa)

Conventional Bicycle Lanes

A bicycle lane is that portion of the roadway that has been designated by striping, bicycle symbols, and signage for the exclusive use of bicyclists. Bicycle lanes enable bicyclists to position themselves where they will be visible to motorists and promote predictable behavior and movements between bicyclists and motorists.

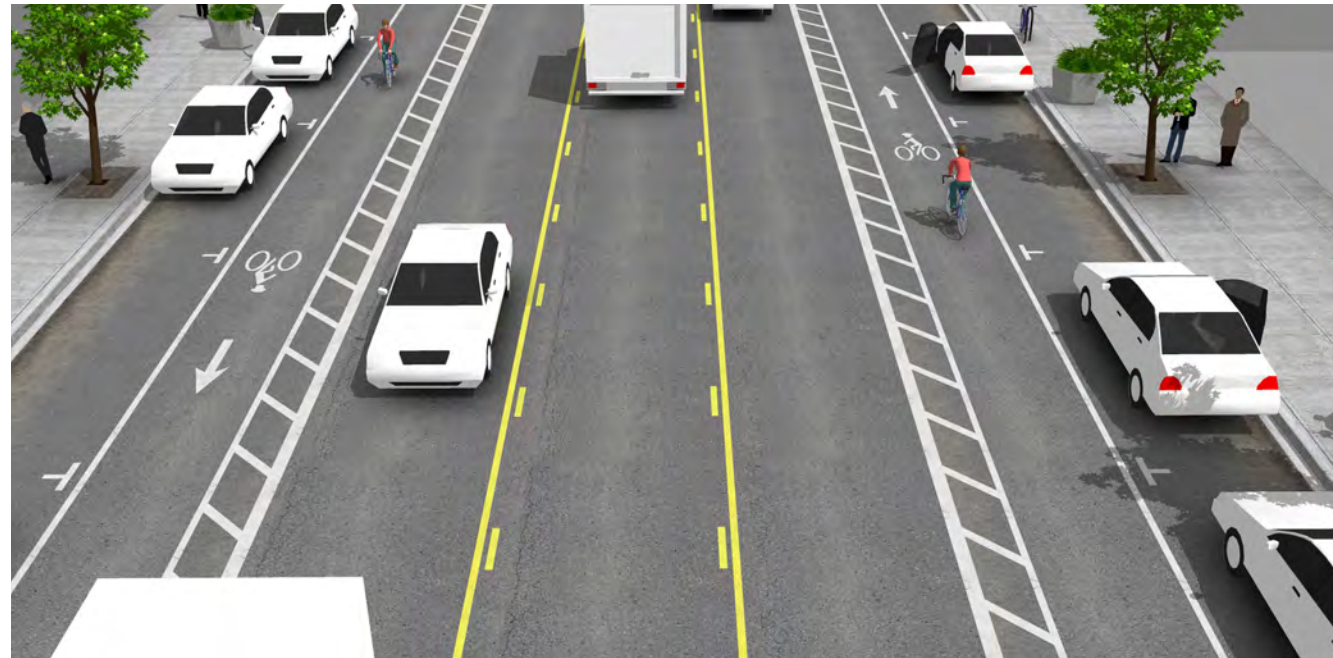
Bike lanes are most appropriate on arterial and collector streets where higher vehicle traffic volumes and speeds warrant greater separation between bicyclists and motorists. Bike lanes should be at least five-feet wide. If there is on-street parking, it is important to situate the bike lane outside the “door zone” to avoid crashes involving motorists opening vehicle doors to exit as bicyclists are passing by.



Conventional Bike Lane Design Guidance (Urban Bikeway Design Guide, NACTO)
<http://nacto.org/publications/urban-bikeway-design-guide/bike-lanes/conventional-bike-lanes/>

Buffered Bike Lanes

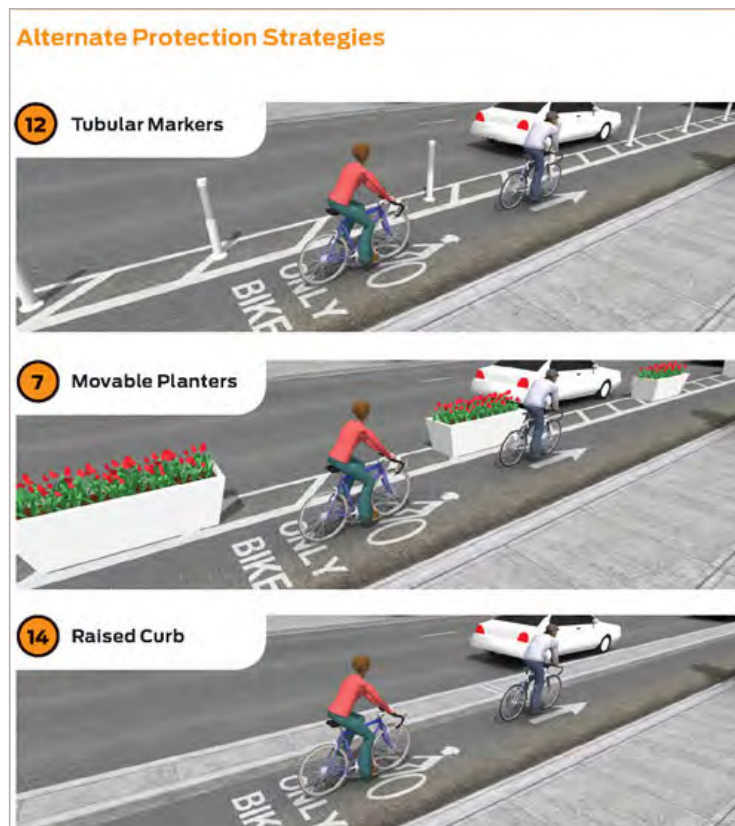
Bike lanes can also be designed with a painted buffer between the lane and adjacent vehicular traffic or parked vehicles. Buffered bike lanes are typically applied on streets with high travel speeds, volumes and/or substantial volumes of truck traffic, on streets with an extra lane or lane width, or anywhere a standard bike lane is being considered. Buffered bike lanes provide space for bicyclists to pass another bicyclist without encroaching into the adjacent motor vehicle travel lane, and encourages bicycling by contributing to the perception of safety among users.



Buffered Bike Lanes Design Guidance (Urban Bikeway Design Guide, NACTO)
<http://nacto.org/publications/urban-bikeway-design-guide/bike-lanes/buffered-bike-lanes/>

Separated Bike Lanes (Protected Bike Lanes or Cycle Tracks)

Separated Bike Lanes are exclusive facilities for bicyclists that are located within or directly adjacent to the roadway and that are physically separated from motor vehicle traffic with a vertical element. Separated bike lanes, often called protected bike lanes, utilize a variety of methods for physical protection and separation from passing traffic and are designed to specifically eliminate risk and fear of collisions with over-taking vehicles. Separated bike lanes may be combined with a parking lane, tubular markers, movable planters, raised curbs or other barrier between the bicycle lane and motorists. Typical applications occur on streets with parking lanes, streets where bike lanes would cause many bicyclists to feel stress because of high traffic and speed or streets with high bicycle volumes.



Cycle Track Design Guidance (Urban Bikeway Design Guide, NACTO)
<http://nacto.org/publications/urban-bikeway-design-guide/cycle-tracks/one-way-protected-cycle-tracks/>

Advisory Bike Lanes (Dashed Bike Lanes)

Advisory bike lanes are an experimental treatment for bicycle facilities. They are designed to be used under certain conditions when a standard bike lane cannot be used due to narrow roadway width. Advisory bike lanes guide cyclists to stay to the side of the road and encourage motorists to provide sufficient room when passing. They should only be used where traffic volumes are less than 6,000 AADT and not with a truck or bus route. They should also not be interspersed with one-way traffic.

Advisory bike lanes are often, but not always used in conjunction with centerline removal. There should be a minimum of 16 feet between the dashed lines. Motorists may enter the bicycle lanes to negotiate oncoming traffic, but only when the lanes are not occupied by cyclists.

These are different than conventional bike lanes because motorists are allowed to travel within the bike lane area, and only need to exit the lane when there is a bicyclist in the lane. These are also different than shared lane markings which would typically guide cyclists to travel in line with motorists.



Advisory Bike Lanes. Source: Streets.MN

PAVED SHOULDERS

Paved shoulders accommodate bicycle travel on rural roadways by providing a suitable area for bicycling and reducing conflicts with faster moving motor vehicles. Paved shoulders have similar characteristics as bike lanes, but may or may not be designated through pavement markings and signage.

Generally, paved shoulders are recommended to be six feet in width allowing bicyclists to ride far enough from the edge of the pavement to avoid debris and far enough from passing vehicles to avoid conflicts. When rumble strips are provided on the paved shoulder, care should be exercised to ensure at least a minimum rideable surface of 4 feet is provided. Rumble strips can be a benefit to bicyclists using a paved shoulder by notifying motorists when they begin to encroach upon the shoulder. There should be no parking allowed on the pavement when the shoulder is intended to be used as a bikeway.

Generally, paved shoulders primarily accommodate the “strong and fearless” and possibly the “confident and enthused” cyclists. Since the separation from motor vehicles traffic is minimal and the speed of traffic is high, this is a higher stress type of bicycle facility. To accommodate a wider range of cyclists, an improved separation should be provided by construction of a trail or buffered or protected bikeway.

The recommended network throughout Webster County primarily involves paved shoulders. As the county pavement plan develops, consideration should be made to add a paved shoulder along these roadways to separate the bicyclists from the motorists.



Paved Shoulders on Quail Avenue (Fort Dodge, IA)

Proposed Paved Shoulders - Webster County					
Facility Name	From – To	Length (mi)	Priority	Traffic Volume	Speed Limit
160th Street	Orchard Rd – Nelson Ave	1.07	Medium	730	55 mph
180th Street	Oakwood Rd – Madison Ave	0.87	Low	390	55 mph
Madison Avenue	180th St – 170th St	1.00	Low	60	55 mph
National Avenue (North)	160th St – 140th St	1.73	Medium	450	55 mph
Nelson Avenue	235th St – DSM River	1.36	Low	2,560	55 mph
OHV Connection (Mill Road)	210th St – Quail Ave	1.96	Low	1,740	55 mph
Orchard Road	170th St – 160th St	1.46	Medium	480	55 mph
Otho Drive	DSM River – Otho Limits	0.67	Low	770	55 mph
Paragon Avenue	Badger – Webster County Border	2.00	Low	840	55 mph
Scenic Drive	Scenic Drive Trail – 180th St	0.17	Low	970	55 mph
Total		12.29			

INTERSECTION TREATMENTS

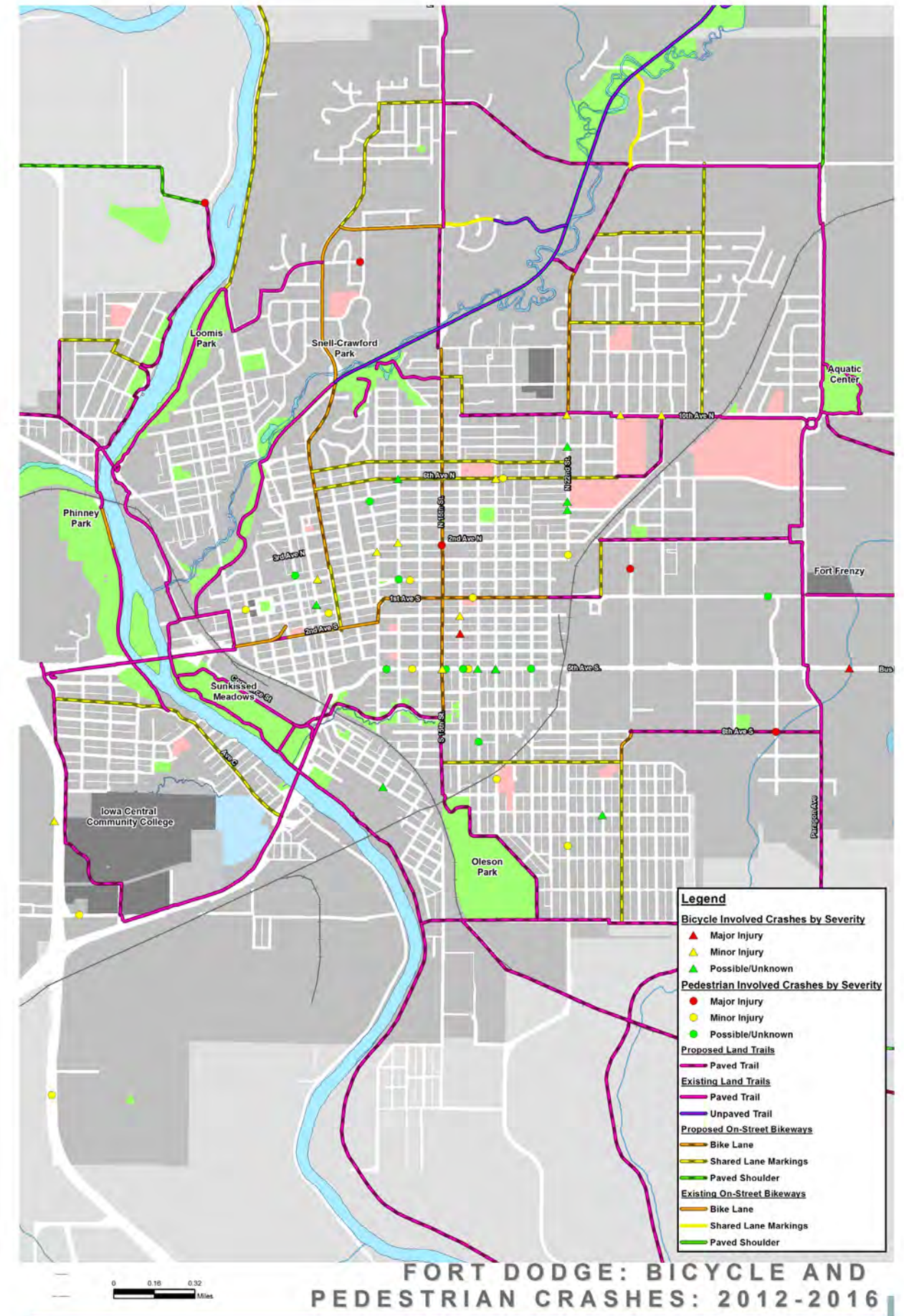
Intersections should be designed to accommodate bicyclists, pedestrians and motorists in a safe and efficient manner. Designs for intersections with bicycle facilities should reduce conflicts between users by increasing visibility, identifying the right-of-way, and making it clear to each user where they should be located within the intersection. The level of treatment required for bicyclists at an intersection will depend on the bicycle facility type used, adjacent street functions, and adjacent land uses.

To identify intersections potentially needing improvements, bicycle and pedestrian crash data from 2012-2016 was acquired from the Iowa DOT for the City of Fort Dodge and Webster County. Numerous incidents were reported along the 5th Avenue S corridor, in the downtown business district, and along N 22nd Street and 10th Avenue N (near the Fort Dodge Senior High and St. Edmonds Catholic School).

Of the areas with the most frequent bicycle and pedestrian crashes, only 10th Avenue N currently provides a bicycle facility, which is a sidepath trail. Crashes were reported at three of the intersections along this trail, each of these involved a bicyclist and a minor injury was reported.

Any intersection in the proposed bicycle and trail network should be evaluated for improvements when the bicycle facilities are designed. Those intersections which have had crashes reported in the past should consider the details of those crashes to determine if the facility could be designed to reduce the likelihood of a similar crash occurring again. Intersections in the proposed network with a history of bicycle and pedestrian crashes includes:

- N 15th Street and 2nd Avenue N
- 1st Avenue S and S 17th Street
- 8th Avenue S and S 31st Street
- S 17th Street, south of 8th Avenue S
- Avenue O, near Central Community College.

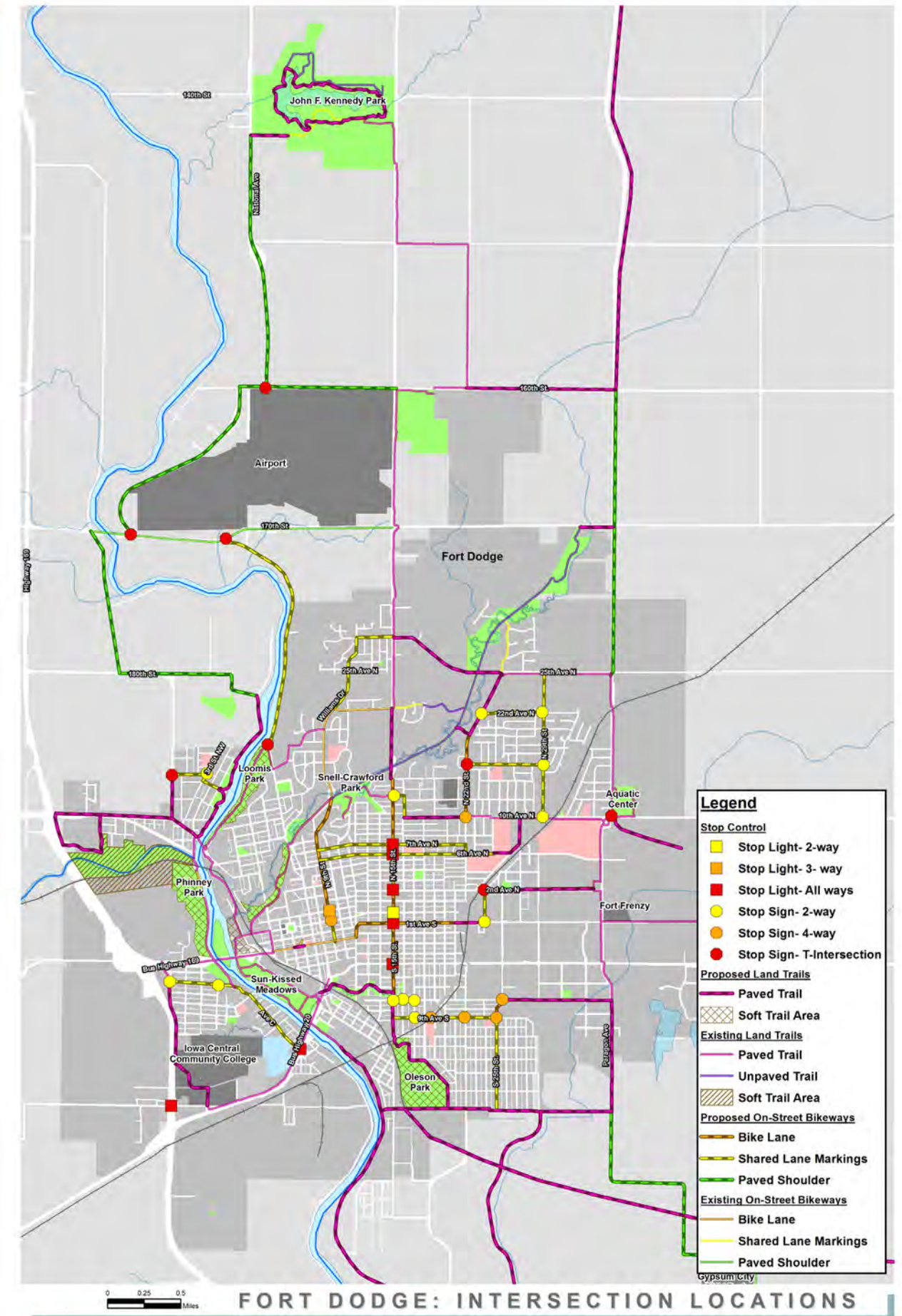


Other intersections in the proposed network are depicted in the “Intersection Locations” map. This map identifies intersections which are signal-controlled and stop-controlled throughout the proposed bike network. Not all intersections necessarily need to have improvements in order to better accommodate bicyclists. This section provides an abbreviated toolbox of options for intersections which may experience higher crash rates, may be confusing, or for areas where there are higher volumes of bicyclists.

Possible improvements for intersections include, but are not limited to:

- Signal Detection for Bicyclists
- Active Warning Beacons
- Bicycle Signal Head
- Pavement Markings through Intersection
- Raised crosswalks / Raised intersections

These treatments are described briefly on the following pages.



SIGNAL DETECTION FOR BICYCLISTS

Bicyclists are unable to trigger a stop light to change in the same manner as motorists. Bicycle detection is used at actuated traffic signals to request a green light and reduce the likelihood of bicyclists running a red light due to the light not changing.

Detection can be used either through push buttons or by automated means. Automated detection methods include in-pavement loops or videos. Proper bicycle detection must accurately detect bicyclists and provide clear guidance to bicyclists on how to actuate detection.

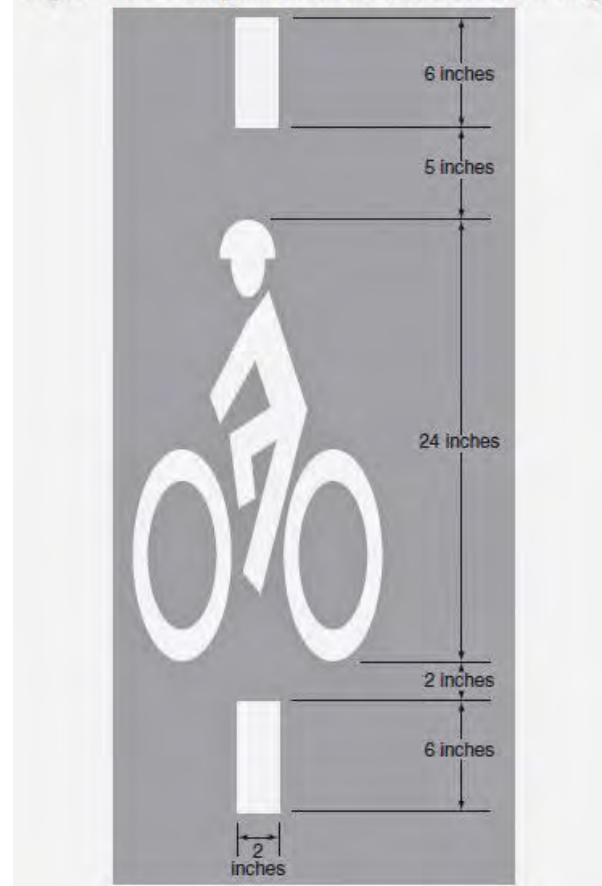


Loop cycle detector (Portland, OR) Source: (Urban Bikeway Design Guide, NACTO)



Push Button Actuation (Urban Bikeway Design Guide, NACTO)

Figure 9C-7. Bicycle Detector Pavement Marking



Bicycle detector pavement marking (MUTCD 9C-7)

ACTIVE WARNING BEACONS

Active warning beacons are user-actuated amber flashing lights that supplement warning signs at unsignalized intersections or mid-block crosswalks. Beacons can be actuated either manually by a push button or passively through detection. Warning beacons can be installed on either two-lane or multi-lane roadways. Warning beacons should be used to alert drivers to yield where bicyclists and pedestrians have the right-of-way crossing a road. Rectangular rapid-flashing beacons have a vehicle yielding compliance of approximately 70% higher than a standard beacon.

Fort Dodge currently has flashing beacons located at the Hawkeye Avenue and 2nd Street NW intersection, the Williams Drive intersection with the Snell-Crawford Park, and the trail intersection near the Fort Dodge Aquatics Center.



Active Warning Beacons (Urban Bikeway Design Guide, NACTO)



Flashing Beacons at the intersection of the Fort Dodge Nature Trail and Williams Drive. (Fort Dodge, Iowa)

BIKE SIGNAL HEAD

A bike signal may be used to give cyclists a head start through an intersection, when they are in a contraflow lane, or when they need to make a diagonal or otherwise difficult crossing at an intersection. This signal would be installed with user actuation or automatic cyclist detection.

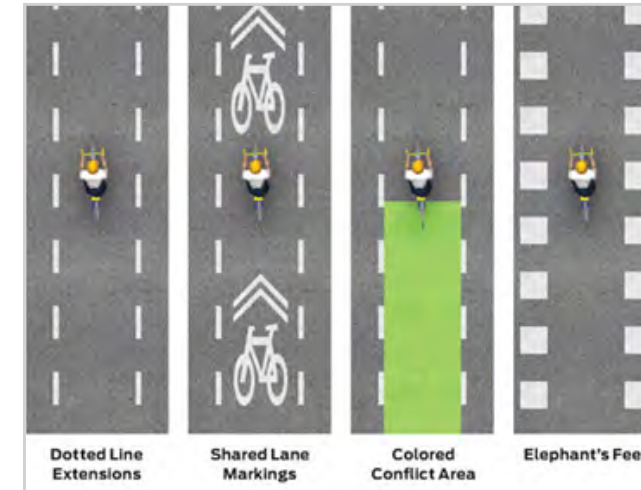


Bike Signal Head (Madison, WI)

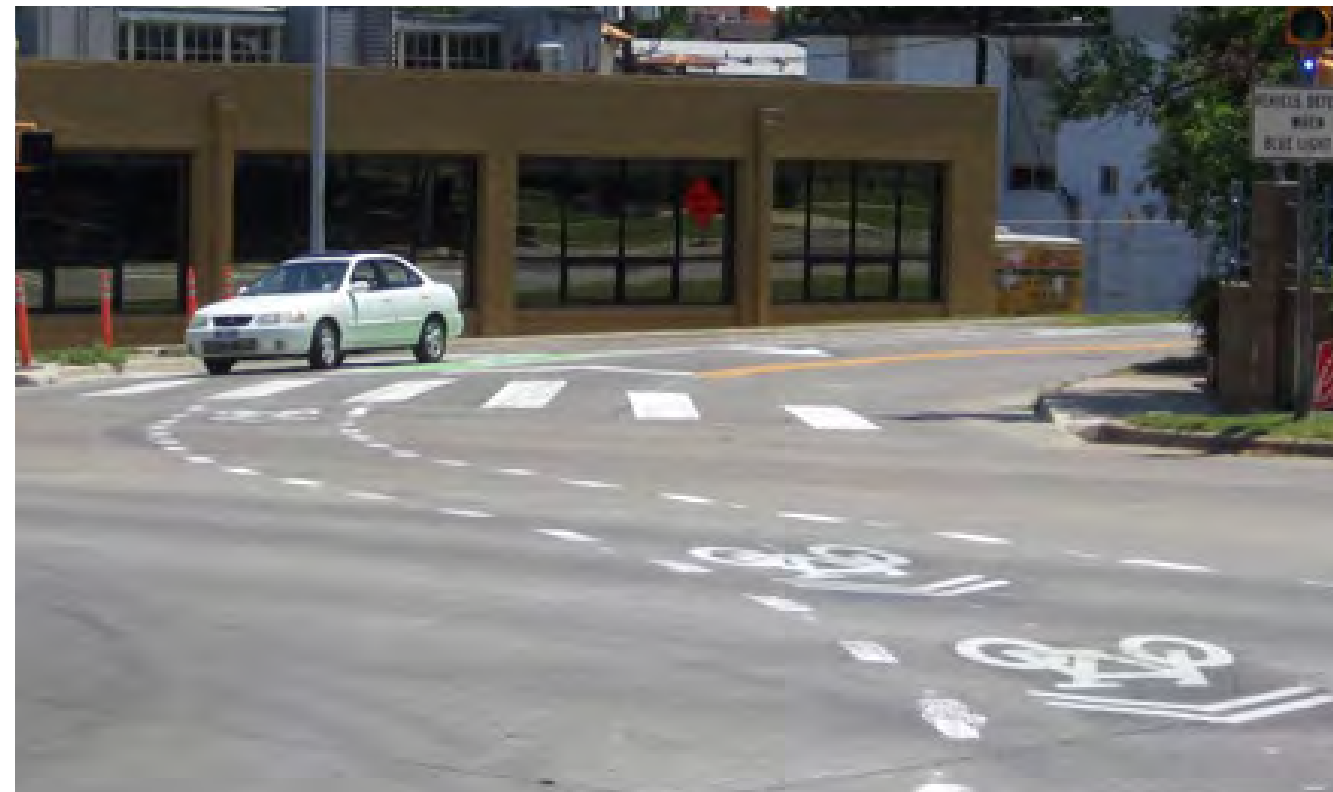
PAVEMENT MARKINGS THROUGH INTERSECTION

Pavement markings including shared lane markings or bicycle lanes may sometimes be marked through an intersection. This helps to keep the cyclist in the correct path, and alerts motorists to the potential for cyclists in the area. This treatment may help at larger intersection or those where the bicycle route may be unclear.

The markings would be dashed or dotted line or chevrons, rather than a solid bicycle lane sign. This indicates that the space is also a conflict area since there are other vehicular movements within the intersection.



Marking options through intersections. (Urban Bikeway Design Guide, NACTO)



Intersection markings (Austin, TX) Source: Austin Transportation Department

RAISED CROSSWALKS/RAISED INTERSECTIONS

A raised crosswalk (or a raised trail crossing) makes pedestrians and cyclists more visible in the crossing while also slowing traffic as they approach the crossing. The crossings are typically raised 3 inches.

Entire intersections can also be raised, which highlights the intersection as a conflict area, causes users to slow, and, brings awareness to multiple users in the intersection.



Raised Intersection (Cambridge, MA) Source: NACTO



Raised crosswalk (SW 14th Street, Des Moines, IA)



Raised Trail Crosswalk (Minneapolis, MN)

AMENITIES

WAYFINDING SIGNARE

Wayfinding signage can alert visitors of important landmarks, natural features, civic destinations, neighborhoods and routes to key destinations or attractions. Effective signage can encourage more people to bicycle by leading people to on-street facilities that provide the best routes to take to get to key destinations, saving time and energy.

The MUTCD guide offers wayfinding design guidance for on-street bicycle facilities. Signage may be provided along designated bicycle routes to inform bicyclists of route direction changes. Signage should be repeated at regular intervals so that bicyclists entering from side streets know that they have entered they bicycle route. The signage also reminds motorists to be aware that bicyclists may be in the area.



D11-1



D11-1a



D11-1bP



D11-1c

Destination signs, street signs or bicycle destinations signs may be installed to provide direction, destination and distance information as needed for bicycle travel. For complete guidance and design, please refer to the MUTCD Part 9: Traffic Control for Bicycle Facilities.

Though the MUTCD guide is the standard guidance document, custom signage can be developed to help create a brand and recognition of the trail system. Webster County Conservation and the City of Fort Dodge developed Wayfinding Design Guidelines in 2012. The goals of the signage system are to develop attractive and simple signage.

The plan identifies a “Family of Signs” to utilize throughout the City and County, to meet the needs of a range of users and interests. This signage has already been installed in various places throughout the trail system, as depicted in the Existing and Proposed Facilities map.

Additional custom signage may be considered as a replacement for existing signage at the intersection of the Fort Dodge Nature Trail with Williams Drive and the Phinney Park Trail.



Existing custom wayfinding signage (Fort Dodge, IA)



Existing signage on the Fort Dodge Nature Trail should be upgraded to custom marker. (Fort Dodge, IA)



Existing signage should be upgraded to custom signage (Fort Dodge, IA)



Family of Custom Wayfinding Signage (Wayfinding Design Guidelines, 2012)

TRAIL ART

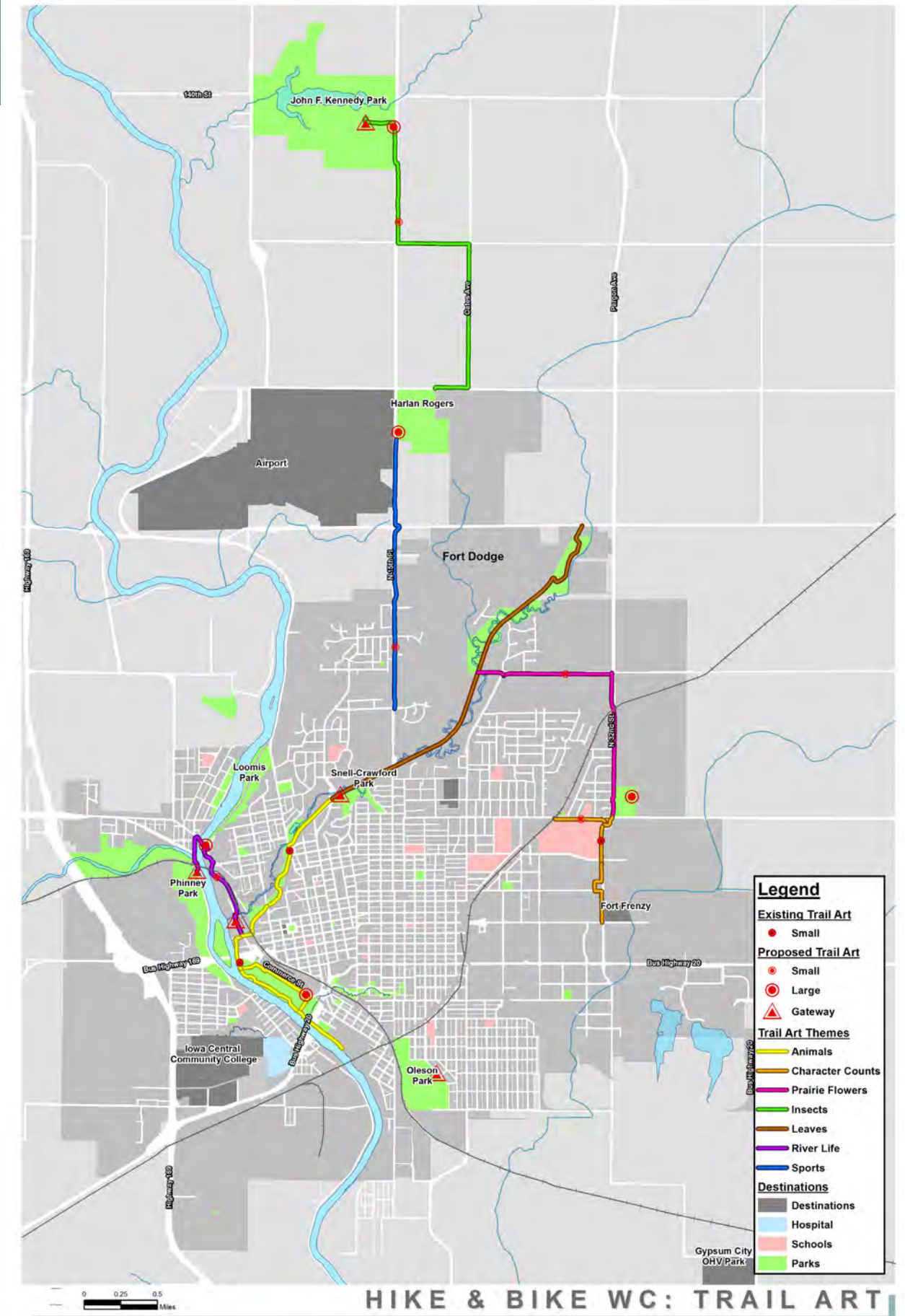
The City of Fort Dodge and Webster County Conservation worked together to develop a cultural component for the Prairie River Trails Network. This plan is composed of three levels of art identified as small, large and gateway.

- Small
 - Themed trail art panels
 - 4' x 2½' made of Corten steel
 - Funded through 28E and partnered with Fort Dodge Senior High School (FDSH)
 - Locations throughout trail network
- Large
 - Public art
 - Size and design will vary – material suggestions of Corten steel, Cosota stone, and bronze
 - Funded through grants, memorials or private funds
 - Locations at all major destinations throughout the trail network
- Gateway Features
 - Arched features
 - Size and design will vary – material suggestions will vary on locations
 - Funded through grants, memorials or private funds
 - Location possibilities: riverfront, trailheads and corridors



A partnership with the Fort Dodge Community School district welding class resulted in the creation of the small, themed trail art program. By identifying trail locations by areas, the trail user would know when they exit from one segment of trail into another based on the themed artwork. City and County staff developed the artwork concept and the FDSH shop class turned the rough concepts into two-dimensional artwork created in Corten steel with a steel welded surround. The first four sets of panels were installed in 2017 and serve as a great source of pride for the students as well as a beautiful addition to the trail network.

The second two levels of trail art need to be developed and implemented. These amenities will add to the educational and cultural vitality of our community that has been emphasized in the Boone Forks Regional Plan and the Hike & Bike WC Master Plan.

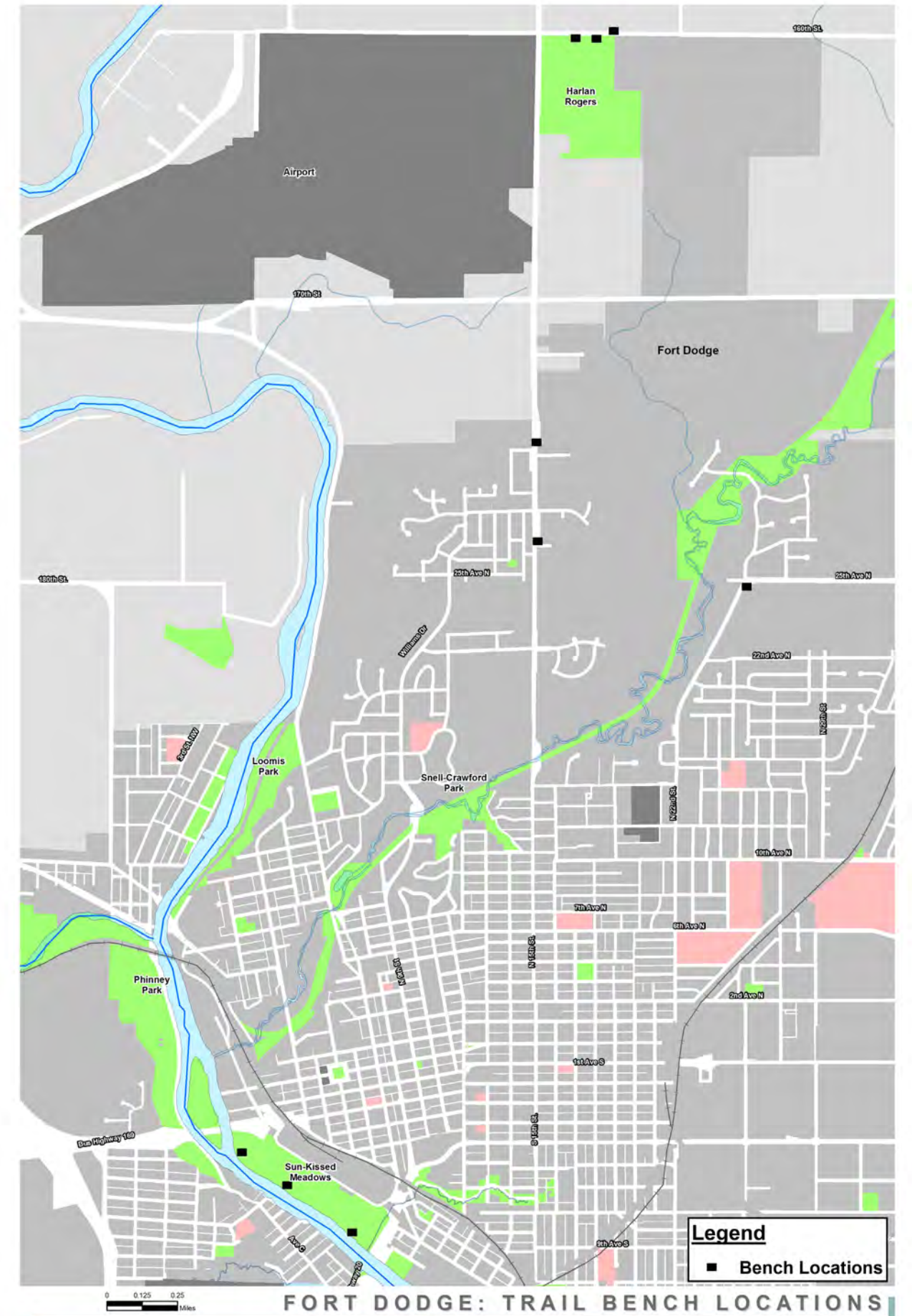




TRAIL MEMORIAL BENCHES

The City of Fort Dodge and Webster County offer a memorial bench program, which allows individuals to purchase a bench and up to three memorial medallions for placement along the Prairie Rivers Trails Network.

The locations for memorial benches have been pre-approved by City and County staff. The City and County commit to maintaining the bench for a period of five years from installation. After that time period, the bench may be removed if it is vandalized or otherwise damaged. The original donor has the option to purchase another bench for replacement.



PRIORITIZATION

The Prairie Rivers Trails System has been under development for many years with planning, fundraising, and construction efforts. One construction phase has been completed and a second construction phase has been defined.

Phase I

The Phase I Trail Expansion was constructed between 2010 and 2012, and consisted of 14 miles of new trails and on-street bikeways. The expansion provided routes to 15 city parks that included Harlan Rogers Sports Complex, J.F. Kennedy Memorial Park, and Rosedale Rapids Aquatic Center; it also provided connections to the Fort Dodge riverfront, two golf courses, schools, retail and service areas, residential neighborhoods, and other key destinations such as Iowa Central Community College.

Phase II

The Phase II Trail Expansion is currently underway, with planned completion in the fall of 2018. Phase II consists of five segments that will close in a circular loop around the community; these segments ultimately connect to all of the areas established in Phase I, as well as additional residential neighborhoods, Oleson Park, the City's Corridors of Commerce (5th Avenue South), and another area of the Fort Dodge riverfront.

The rest of the proposed network is grouped into three priority levels to help guide development efforts over the next 20 years.

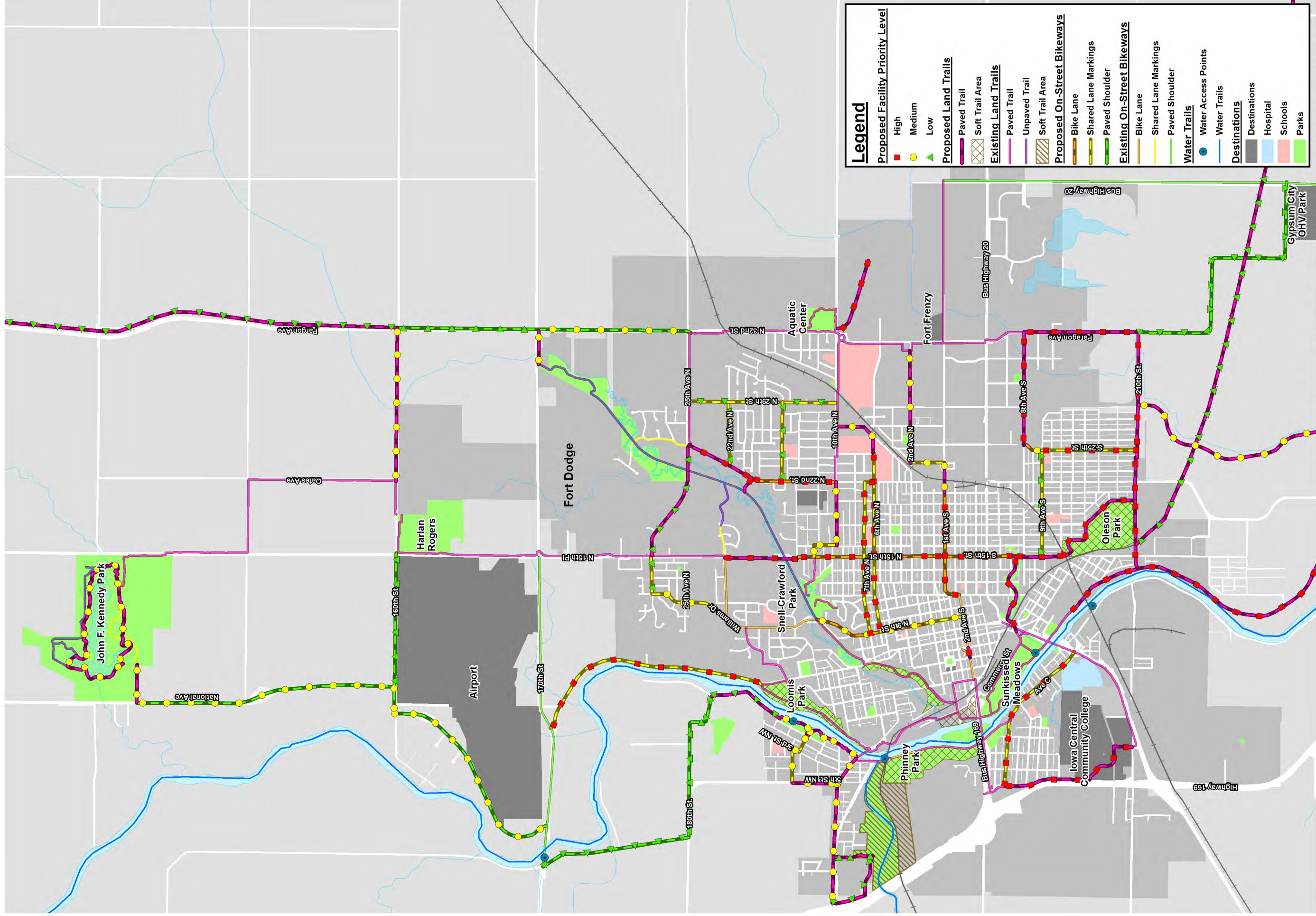
Proposed Priorities

The on-street and trail priorities established in Hike & Bike WC are identified as High, Medium, or Low Priority. The High, Medium, and Low Priority projects may be packaged into a number of future Phases; that is, Phase III may consist of just a portion of the High Priority projects, or could consist of all High Priority projects and some Medium Priority projects, depending on the resources available for completing said priorities.

High Priority connections are of great importance to the community and/or are identified as “low hanging fruit”; that is, they may require less resources and/or be integrated into other projects such as street improvements.

Medium Priority connections may require a number of resources that are not yet identified to complete; however, they are seen as important connections to the community.

Low Priority connections are of importance to the community, but may require resources that are not available, as the high and medium priority projects are being implemented.

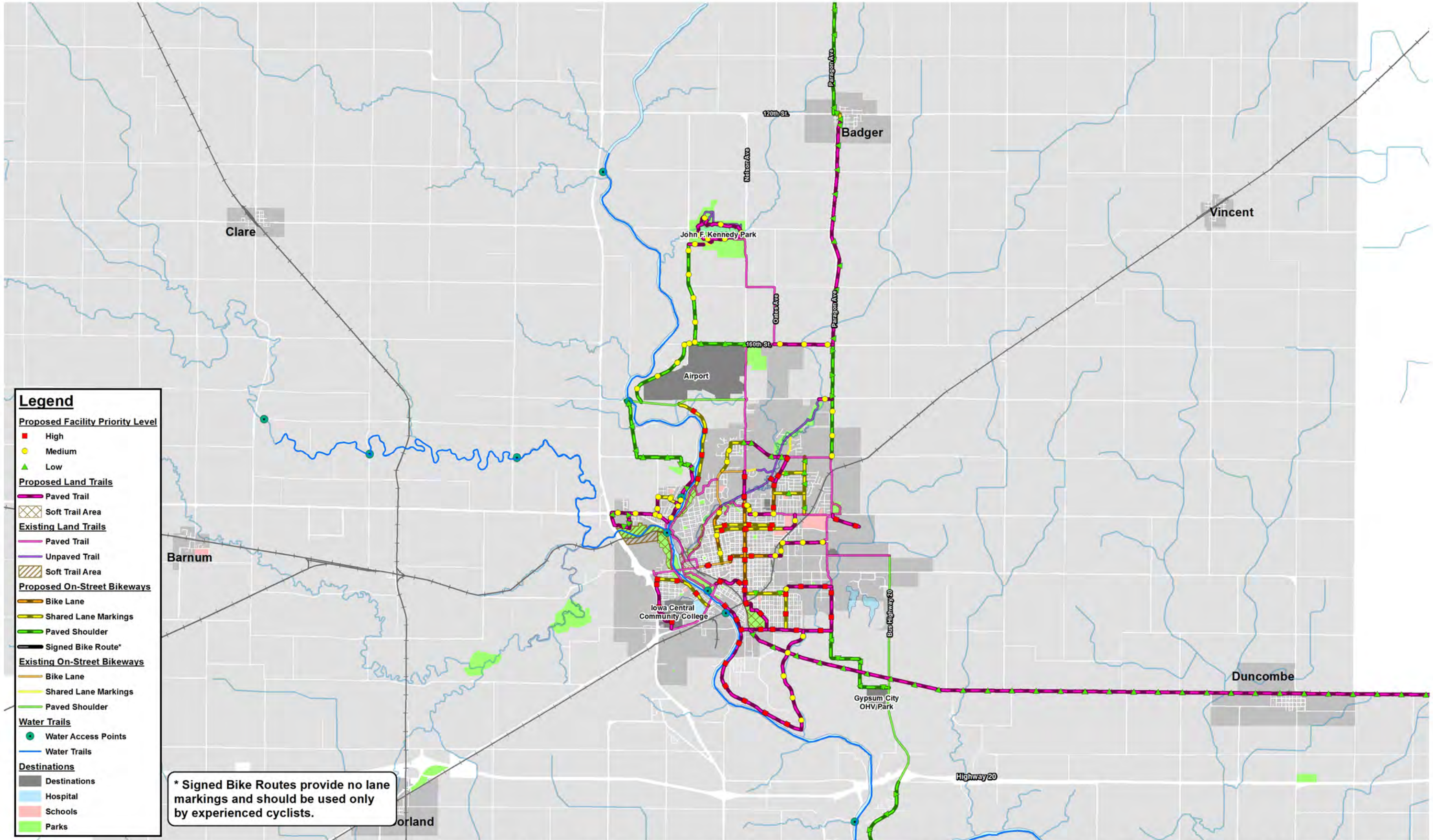


Legend

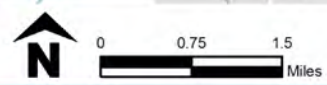
Proposed Facility Priority Level	High (Red square)	Medium (Yellow circle)	Low (Green triangle)
Proposed Land Trails	Paved Trail (Pink line)	Soft Trail Area (Cross-hatched box)	
Existing Land Trails	Paved Trail (Purple line)	Unpaved Trail (Blue line)	Soft Trail Area (Diagonal-hatched box)
Proposed On-Street Bikeways	Bike Lane (Orange line)	Shared Lane Markings (Yellow line)	Paved Shoulder (Green line)
Existing On-Street Bikeways	Bike Lane (Brown line)	Shared Lane Markings (Light Green line)	Paved Shoulder (Light Green line)
Water Trails	Water Access Points (Blue circle)	Water Trails (Blue line)	
Destinations	Destinations (Grey rectangle)	Hospital (Light Blue rectangle)	Schools (Pink rectangle)
			Parks (Light Green rectangle)

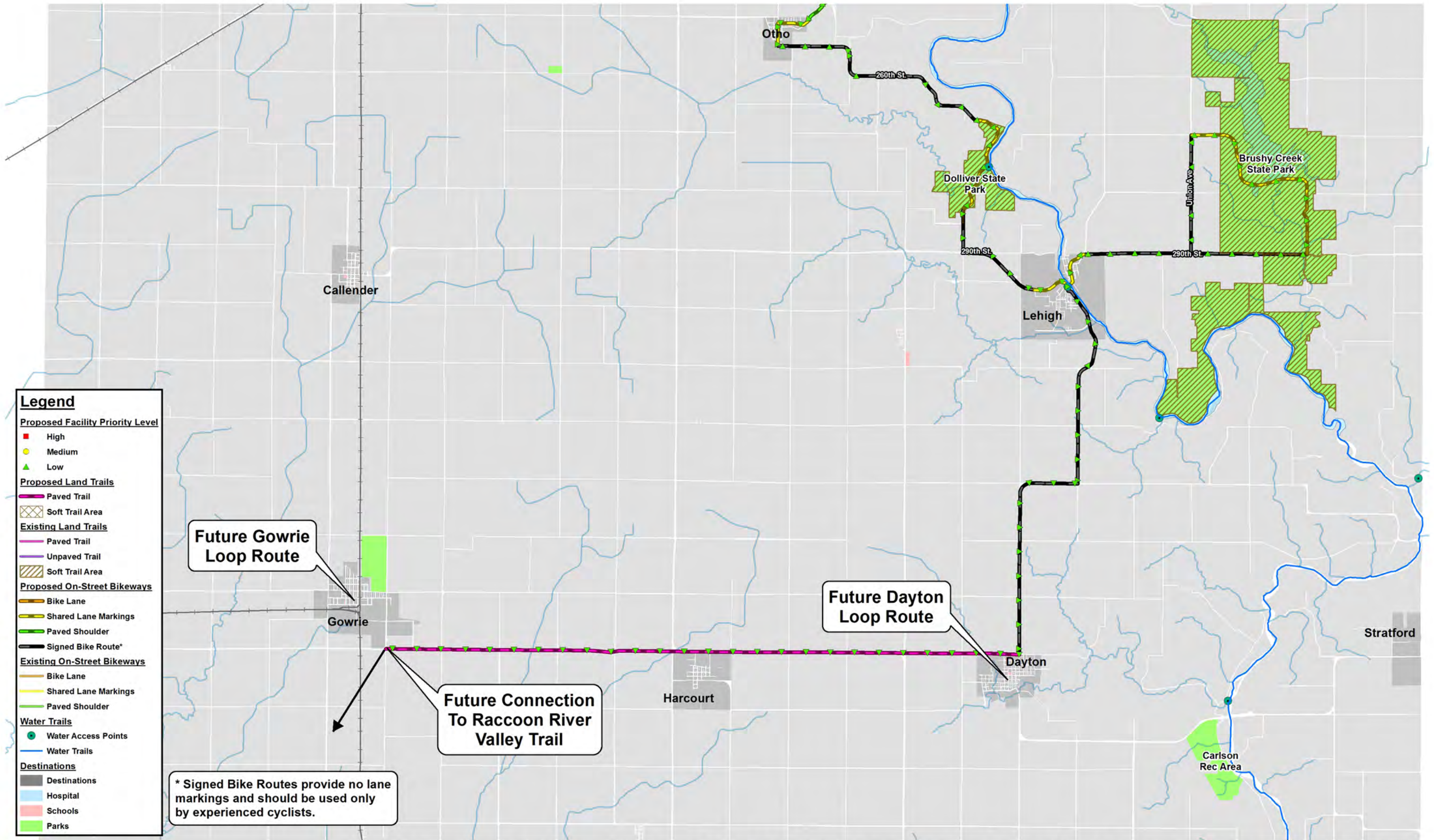
HIKE & BIKE WC: EXISTING AND PROPOSED FACILITIES





HIKE & BIKE WC: EXISTING AND PROPOSED FACILITIES





HIKE & BIKE WC: EXISTING AND PROPOSED FACILITIES



4 MARKETING, EDUCATION, AND ENCOURAGEMENT

Marketing Objectives

User Groups

Education and Encouragement

- Existing Resources
- Local Awareness
- Special Events
- Safety Events
- Special Bike, Walk, or Run Events

Implementation

- Communication Protocol Development

MARKETING OBJECTIVES

A key component of encouraging biking and walking within the community is promotion and marketing of the trails and on-street facilities system. This means not only providing the public with knowledge about the system itself, but also helping them understand how it can help them improve their quality of life.

The key to a good marketing plan is clear and achievable objectives. The objectives of the marketing plan should be aligned with the overall goals of the master plan and use targeted strategies to achieve the desired results.



GOALS OF HIKE & BIKE WC

1. Provide a complete bicycle and pedestrian system with connections to various destinations
2. Increase biking and walking trips for health, recreation, and transportation
3. Ensure safety for all when biking and walking
4. Develop a marketing plan to promote the Prairie Rivers Trail System

MARKETING OBJECTIVES

1. Increase local and regional knowledge and awareness of the Prairie Rivers Trail System facilities and brand
2. Develop partnerships and utilize available resources to promote trail use
3. Make information easily accessible
4. Increase public support for trail and bicycle facility development, educational programs, and use throughout the county

The Fort Dodge Trail System consists of 25 miles of interconnected trails with informational kiosks at the trailheads and wayfinding signage along the trails.

The main trailheads are located at Kennedy Memorial Park, 1415 Nelson Ave. and Rosedale Rapids Family Aquatic Center, 1111 N 32nd St. in Fort Dodge.

Fort Dodge Regional Trail System
<http://www.traveliowa.com/trails/fort-dodge-trail-system/45/>

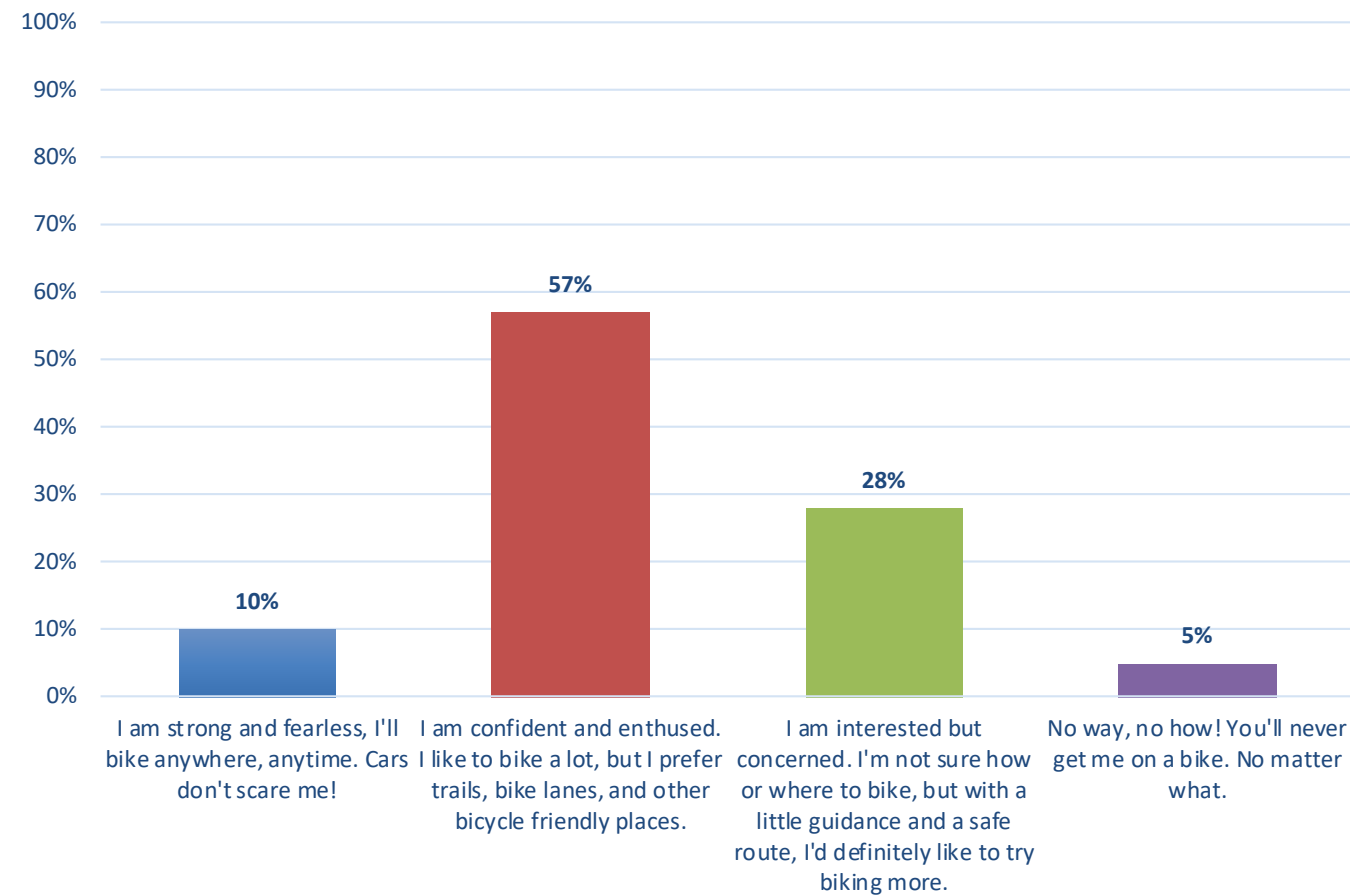
An effective way to market the Prairie Rivers Trail System is to use targeted strategies for specific audiences. It is important to understand the characteristics of those that are currently using the trail system and those that are interested, but reluctant.

We must also consider those that may be interested in utilizing the on-street facilities as well. For example, a marketing strategy aimed at increasing biking and walking to school will use different mediums and messages than a strategy aimed at increasing biking and walking for seniors.

USER GROUPS

Insight into the current system users can be gleaned from the Hike & Bike WC survey conducted in March and April 2017. The survey asked respondents to identify which type of cyclist they consider themselves to be: Strong and Fearless, Confident and Enthused, Interested but Concerned, or No Way, No How. Roger Gellar, the Bicycle Coordinator for the Portland Office of Transportation, first developed these categories in a 2005 study entitled, "Four Types of Cyclists." Since then, bike planners across the county have frequently used these categories to classify cyclists and potential cyclists. These classifications allow planners to identify the local market for bicycling in the community and better understand common barriers to biking for transportation. Part of the goal is to capture the "Interested but Concerned" group and move them up to the "Confident and Enthused" group through education, encouragement, and engineering.

How would you describe your biking ability?



People have different skill levels and interests while biking

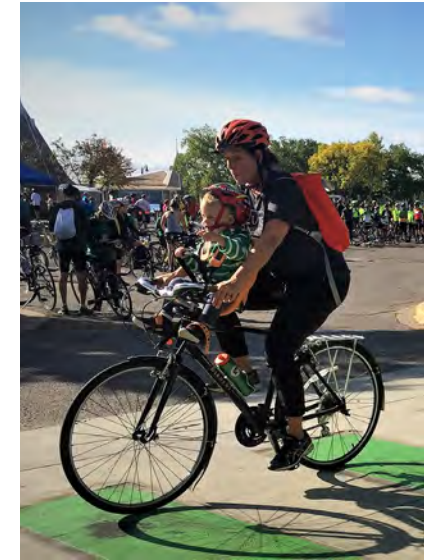


Photo Credit: David Krohse. March 2017



10% of respondents are:



STRONG & FEARLESS

The Strong and Fearless are the type of cyclists who will bike anywhere, anytime, regardless of whether there are bicycle friendly facilities. The riders typically bike faster than other user types, prefer direct routes, and will often choose roadways over separated bicycle facilities such as shared use paths. The survey shows that 58% of respondents in this category use the trails and bicycle facilities a few times per month or more.

Some of the suggestions from this group included connecting gaps in sidewalks and creating safer transportation routes throughout Fort Dodge.

These users primarily need ready access to information related to the trail system, such as closures, detours, special events, and new facilities. They also benefit from special events that promote interactions with other cyclists, friendly competition, or extended organized social rides.

The prime riding time for this group will be on evenings and weekends, but transportation to and from school and work should be strongly encouraged through new construction, consistent maintenance, and potentially employer or community-based incentives.

57% of respondents are:



CONFIDENT & ENTHUSED

This is by far the largest group of users in Webster County. Nearly 60% of respondents use the facilities in Webster County on a daily to weekly basis. The Confident and Enthused group enjoys riding frequently, but prefer bicycle-specific facilities and low-traffic streets when available. They may diverge from a more direct route to take advantage of a lower volume road or preferred bicycle facility type.

Some of the survey suggestions from this group focused heavily on expanding and connecting the network both in Fort Dodge and out into other areas of the county. Many comments focused on the dangers of riding along N 22nd Street, and the need for more connections to destinations like restaurants, stores, and the downtown area, as well as better connections to the Northwest River District.

This is the largest target audience for marketing. However, strategies should be focused less on encouragement and more on opportunity. Confident and Enthused riders will be more interested in the extension and connection of bicycle-specific facilities and news about facility conditions. The prime riding time for this group is similar to the Strong and Fearless; it will be on evenings and weekends, but transportation to and from school and work should be strongly encouraged through new construction, consistent maintenance, and employer or community-based incentives.

28% of respondents are:



INTERESTED BUT CONCERNED

The Interested but Concerned group is the second largest response demographic from the Hike & BikeWC survey. A large portion of this group uses the trail a few times per year at most. These are generally riders who only ride on low-traffic streets and shared use paths. They perceive traffic and safety as significant barriers towards increased biking, and may become “Confident and Enthused” riders through encouragement, education, experience, and adequate facilities.

Children riding on their own or with their parents require safe paths to destinations like schools, friends’ houses, and the library. Parents oftentimes allow adolescent children who are not yet licensed to drive, but are ready to explore their independence, to bike or walk on short, safe routes without adult supervision—including on residential streets with low vehicle speeds and traffic volume. Exposure to bike and pedestrian facilities throughout childhood could expand the “Confident and Enthused” group when these children and adolescents become adults.

Survey comments from this group included safety concerns from the standpoints of visibility and traffic—some potential users would prefer fewer secluded trails for running, while many respondents would prefer minimal interaction with traffic on busy roads. Other suggestions include adding more amenities along trails like restrooms and benches.

Some of the Interested but Concerned will not have access to bicycles and/or helmets, so partnering with local businesses to provide loaner equipment for events may be the incentive this group needs to get out on the trails.

5% of respondents are:



NO WAY, NO HOW

This is the smallest group of survey respondents. The No Way, No How group will not ride a bike no matter what is done or said to try to persuade them otherwise, or they may be physically unable to do so. They use the trails infrequently, if at all.

The respondents in this group are largely against trail-related expenditures. Suggestions center on reallocation of anticipated costs.

Outreach to this group should focus solely on touting the benefits of trails for community wellness and economic growth. Due to the majority negative views, this group is unlikely to increase their trail usage, but there is hope to influence their opinion regarding the expansion of the trails system. For those who are physically unable to bike or walk on the trails, information about allowable mobility devices and the locations of benches along the trail could offer the necessary encouragement to get more people outside on the trails.

The income demographics of this group are mostly unknown due to the large percentage of respondents who chose “Prefer not to answer.” A significant portion of this group is aged 50 or older.

EDUCATION AND ENCOURAGEMENT

Education and encouragement efforts are components of an overall marketing plan and necessary for promoting active transportation throughout the community. Throughout the marketing of special events, clubs, and incentive programs, residents will be encouraged to bike for fun, health, and transportation. Educational efforts can teach both adults and children how to ride safely and will teach all roadway users how to properly share the road.

While the engineering and design of bikeways must be led by a local government, education and encouragement efforts can be led by volunteers, local non-profits, for-profit businesses, or school districts-with or without assistance from the local government. Education and encouragement are the key areas in which residents can make an enormous difference in making their community safer for people to bike, walk, run, and enjoy an active lifestyle.

EXISTING RESOURCES

There are many national, state, and regional organizations that provide resources for these types of efforts. The following is a list of groups that promote bicycling, walking, and/or trails in Iowa and can be used as a resource for education, events, encouragement, advocacy, and evaluation.



Cyclists on tandem bike
Photo Credit: Dodger Cyclists Facebook page

Alliance for Biking and Walking

The Alliance for Biking & Walking creates, strengthens, and unites state and local bicycling and walking advocacy organizations. They give advocates tools to win campaigns that transform communities into great places to bike and walk.
<http://www.bikewalkalliance.org>



League of American Bicyclists (aka Bike League)

The Bike League provides information, advocacy and promotion to create safer roads, stronger communities and a bicycle-friendly America. A wealth of resources for improving bicycling in your local community are available through the Bike League. The organization manages the Bicycle Friendly Community award program, which helps communities assess their progress toward making bicycling a realistic transportation and recreation option for all people.
www.bikeleague.org



Iowa Bicycle Coalition

The Iowa Bicycle Coalition builds partnerships, educates Iowans, and helps to establish safe and enjoyable bicycle transportation and recreation networks throughout Iowa. The Iowa Bicycle Coalition manages the Safe Routes to Schools program for the State of Iowa. They provide comprehensive educational information for implementing local programs.
www.iowabicyclecoalition.org



Bike Iowa

BIKEIOWA is the number one interactive cycling site in Iowa that keeps bikers informed on rides, news advocacy, and other events. Users can post their own rides, news, classifieds, and forum discussions, which lends to a very collaborative experience amongst bicyclists. Bike Iowa has over 3,400 members. Fort Dodge and Webster County can make use of this built-in audience of individuals that are interested in biking throughout the state. Anyone can create an account and post news and event information.
www.bikeiowa.com



Iowa Natural Heritage Foundation (INHF)

The Iowa Natural Heritage Foundation protects and restores Iowa's land, water and wildlife. They also partner with local governments on trail planning and development. The INHF spearheaded the development of the Iowa by Trail mobile application for trail navigation and information.
<http://www.inhf.org>



Dodger Cyclists

The Dodger Cyclists are a cycling community in the Fort Dodge area that promote events and biking in Webster County and the City of Fort Dodge. The group maintains a Facebook page with 112 members as of May 2017. Fort Dodge and Webster County may want to partner with Dodger Cyclists to spread news and event information to the existing member audience. They may also look to this local group as a resource for volunteerism related to education, encouragement, and evaluation efforts on the trail and on-street bicycling network.
<https://www.facebook.com/groups/DodgerCyclists/>

LOCAL AWARENESS

In addition to capitalizing on the resources and efforts of advocacy organizations, communities can also develop their own tools to help promote their system. These tools can be time intensive to develop at first, but once implemented they can leverage more interest and awareness of the cycling infrastructure and resources within the community.

System Branding

In 2012, Webster County and the City of Fort Dodge developed branding, signage, and design guidelines for the trail system in greater Fort Dodge and Webster County. In addition to these guidelines, the Project Management Team underwent a process for identifying a trail system name that incorporated the design guidelines. The use of these images and branding will help residents and visitors recognize the trail system in the County. The City and County should use the system branding on new bicycle signage, websites, brochures, maps and promotional items distributed to the general public.

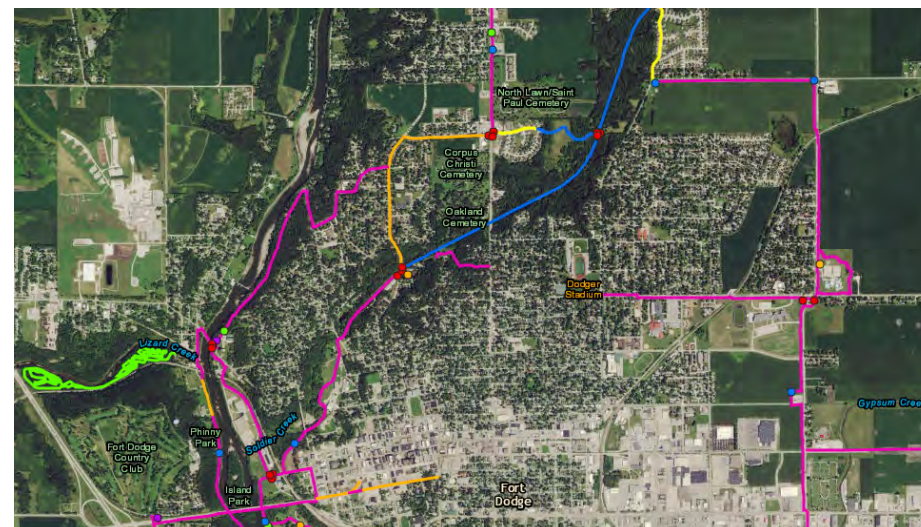


Bicycle and Trail Maps

Maps may call out popular destinations and assist users with identifying trails and on-street routes that are safe and convenient. A paper hand-out map should be updated annually, unless no changes have been made to the bicycling or walking network. The map should be distributed to places where they will be visible and where bicyclists are most likely to go. This includes posting them online and distributing paper copies throughout the community.

Online and interactive maps provide easy access to information, and can be easily updated with new segments, trail closures, and snow removal routes. Using ArcGIS, a new interactive map has been developed.

Perhaps the most utilized online tool for people walking and biking is Google Maps. Staff and local users can check the maps for errors or gaps, and submit new trail information through the site's reporting tool to ensure that walking, biking, & trail information is always up-to-date.



Online interactive map

Signage

Fort Dodge and Webster County have already incorporated static maps into a system of trail signage. These should be updated when major changes to the system have been implemented. Reviewing sign content and condition when updating the Capital Improvement Plan can help keep the signs up-to-date and of acceptable quality, while providing opportunity to budget for any changes.

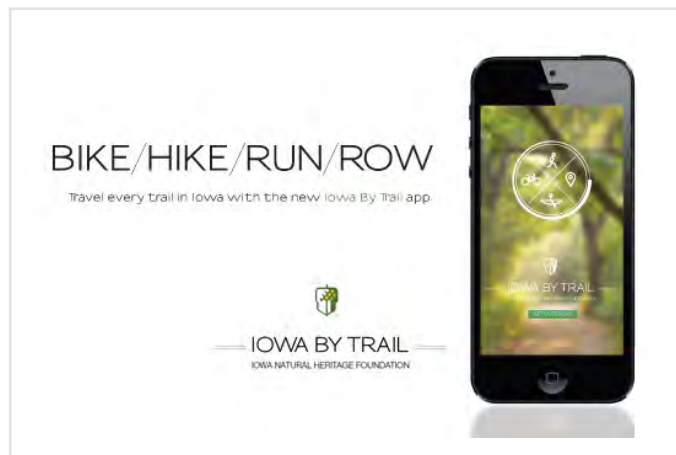


Trail signage- Fort Dodge, Iowa

“Iowa by Trail” Mobile Application

The City of Fort Dodge and Webster County can provide updated trail and on-street bicycle information to the Iowa Natural Heritage Foundation for inclusion in the Iowa by Trail mobile application. This creates another built-in audience for Fort Dodge and Webster County to tap into. Through the application, users can geolocate their position and find the closest trails, find points of interest along the way, communicate with others about what they did along the trail; and keep track of distance, weather, news, and events.

<http://www.inhf.org/iowabytrail.cfm>



Educational Programs

Bicycle and traffic education programs seek to reduce collisions and help people feel safe and comfortable while biking. These programs include elements that help bicyclists and motorists understand their rights and responsibilities on the road. Educational programs should be offered for all skill levels ranging from school-aged children to adults. Educational material may include trail etiquette, information on commuting by bicycle, or on-street safety skills.

One option for educational programming is through The League of American Bicyclists, which offers the only national cycle instructor certification program (League Certified Instructors - LCI). There are currently 14 LCI's in the State of Iowa. The closest LCI's can be found in Des Moines and Marshalltown. The League offers classes on Smart Cycling, Bicycling Skills 123 Youth, and Safe Routes to School.

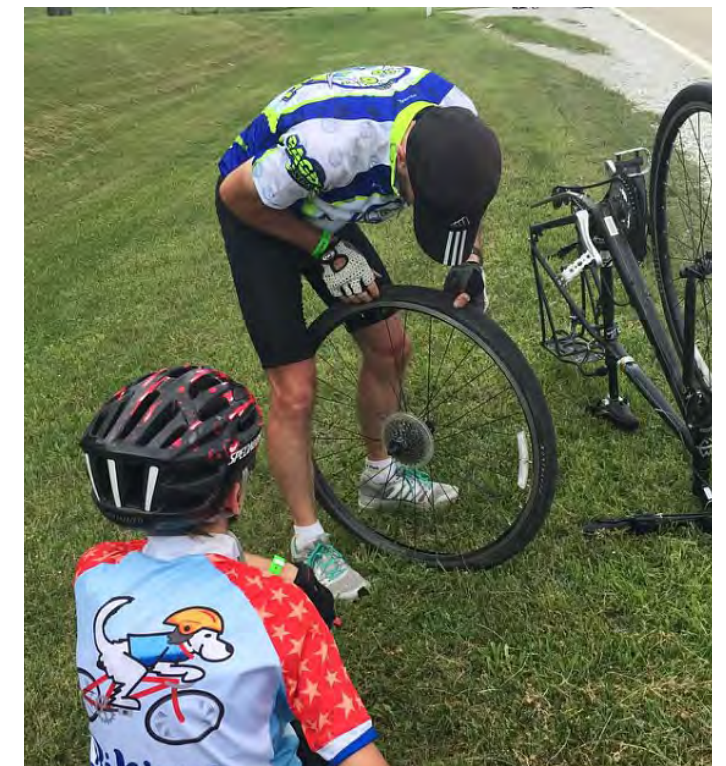
The Iowa Bicycle Coalition offers free educational materials that the County and City of Fort Dodge may order and distribute to residents.

Bicycle Maintenance and Repair Training

Providing bicycle repair training encourages residents to learn how to maintain their bikes so they can rely on the bicycle as a reliable transportation alternative, reducing one of the barriers to biking. This could be accomplished by partnering with a local organization or bike shop to develop a series of bicycle maintenance and repair classes.



It's never too early to start learning about bike maintenance



Cyclist fixing a flat tire



Kids biking in Knoxville, Iowa

Communitywide Marketing Campaigns

A broader educational effort that reaches all members of the community is necessary to establish bicycling as a viable mode of transportation. Fort Dodge's 2015 Downtown Parking Study suggests developing a marketing program to promote bicycle ridership as an alternative mode of transportation.

Trail Rules and Etiquette

These rules and etiquette guidelines include: maintaining a reasonable speed around others, riding on the right, passing on the left, slowing down when others are around, audibly indicating before passing, looking before passing or stopping, not stopping/standing in the path, and being friendly to other users. It would also be helpful to educate residents about power-driven mobility devices on the trails to reduce confusion and conflict.

Safety and Responsibilities

This type of educational effort should cover the rights and responsibilities of both bicyclists and motorists. Not only should the people riding bikes be educated on safely using the roads, but drivers need to be educated on the biking rights and laws that regulate interactions between bikes and vehicles. Safe riding practices may include proper helmet and bike fit, the use of hand signals, nighttime riding safety, and awareness around trail users and vehicular traffic. Motorists should be trained to look for bicyclists and pedestrians when driving, and to take caution when opening their doors when parallel parked on a roadway. These types of issues should be covered in school presentations, bicycle rodeos, community classes, driver's education classes, and online.

Trail, Biking, and Walking Benefits Campaign

This type of campaign would include describing some of the broader benefits of biking and walking, such as improving mental and physical health, reducing greenhouse gases, or improving the local economy. This message is especially important to the members of the community that do not currently use the trail system and are not likely to start—the 5% comprising the “No Way, No How” group.

Kids' Incentives

The Police Department is in the perfect position to promote safe bicycle ridership throughout the summer months. They could partner with local businesses to provide incentives when officers see children riding with their helmets or using proper hand signals. Not only does it create a fun reason for kids to ride their bikes safely, it enhances community engagement through increased positive contact.

Another incentive for children is to provide bicycles to those whose families may not be able to afford to purchase one on their own. Bikes for Tykes is a giveaway held each year in Fort Dodge, providing approximately 300 to 400 bikes to underprivileged area children who are served by Operation Christmas/Church Women United and Upper Des Moines Opportunity. Residents, organizations, and businesses in Webster, Wright, Humboldt, and Hamilton counties donate the bikes or provide a monetary donation for this event.



Google bike fleet provided for employees and visitors- Palo Alto, California



Pedal Perry signage in window, Perry, Iowa

Employer Incentives

Working with employers is a key element of encouraging biking as a form of transportation. One common barrier to biking to work is the lack of support facilities at the end of the ride. Showers, lockers, and bicycle parking make it easier for employees to bike to work. Even if showers are not available, lockers would be helpful for employees to keep personal items to help them freshen up before work. Employers can provide several incentives such as local discounts, fun events, friendly competitions, giveaways, organized rides, prizes, cash back, flextime, or special recognition. Additionally, employers can reimburse employees up to \$20.00/month through the Bicycle Commuter Benefit for the employee's expenses associated with their bike commute to work. The reimbursement is a fringe benefit paid by the employer. The employee does not pay taxes on the reimbursement.

Business Recognition

One type of Bicycle Friendly Business is that which supports their employees' efforts to bike to and from work. For example, they may have secure bike parking (possibly indoors), showers, and bike repair areas. Businesses can apply through the League of American Bicyclists for this designation, and join a group of over 1,300 businesses in all 50 states and the District of Columbia. It is open to public, private, and nonprofit businesses to foster a sense of community at work, show a commitment to sustainability and social responsibility, and support employee and community health and wellbeing. Applicants receive customized feedback regarding best practices, and are encouraged to highlight their business's unique characteristics rather than merely check requirements off a standard list. There are three application cycles each year in spring, summer, and fall. Implementing this type of Bicycle Friendly Business program would also support the 2015 Downtown Parking Study, which encourages employees to commute by alternative means—leaving valuable parking spaces available for customers and visitors.

Another way to fulfill the recommendation of the Downtown Parking Study would be to implement a Bicycle Friendly Business program specific to Fort Dodge. This type of program would identify which businesses have amenities that customers who are bicyclists might need, thereby encouraging people to commute by bicycle throughout town.

In the City of Perry, Iowa, the Pedal Perry Committee has implemented a similar type of program. This organization of local volunteers created official signs for local businesses that declare themselves to be "Bicycle Friendly." Each sign can hold up to four icons chosen by the business owner for cycling-oriented services offered at the establishment.

Customer Incentives

One program that is gaining in popularity nationwide is Bicycle Benefits (www.bicyclebenefits.org). Businesses can sign up to be a participating member with a \$26.75 investment that includes 10 program helmet stickers, 2 large member window decals, 1 small member window decal, and an index card describing program benefits. Each helmet sticker costs \$2.50, which the business then sells for \$5. Participating businesses offer special discounts to bike riders who show their helmet with their sticker. One helmet sticker provides the rider with discounts at all participating businesses nationwide. The Bicycle Benefits program creates a wealth of community-wide incentives, including the promotion of safe riding, biking for transportation, tourism by bringing in riders who prefer to bike in participating cities, and local economic development by bringing in new and more customers who frequent participating businesses. Currently, Iowa City is the only community in Iowa with this program.

SPECIAL EVENTS

Special events can attract new users to bicycle and trail facilities in the community. These events take many forms including charity runs/walks, annual rides, fun rides, and many others. They demonstrate the importance of bicycling, running, and physical activity in the community. They also bring people together to learn, socialize, be challenged, and celebrate their successes. Additionally, mobile workshops or bicycle tours could be held, which not only gets people out on the trail system, but aids them in understanding the surrounding environment and cultural resources in Fort Dodge and Webster County.



Clyde Miller K-8 Stages Bike Rodeo: Aurora public schools
Photo credit: <http://aurorak12.org/2012/10/09/clyde-miller-bike-rodeo>

SAFETY EVENTS

Bike Rodeos

Bike rodeos are skills clinics that provide opportunities for children to learn how to ride bikes safely. They may include a riding course to practice starts and stops, turning and signaling, and roadway and sidewalk hazards, among other obstacles. These events often have a helmet give-away in which safety experts properly fit the helmet to the rider. These programs are the most effective when they do not require registration or a fee. The Fort Dodge Police and Fire Departments have experience with this type of activity; they previously offered a similar program as part of the “Safety Village” for early elementary school students. This served between 30 and 50 children who signed up each year for the Safety Village. There was a fee to sign up for the program, and need-based scholarships were available.

The City of Knoxville, Iowa reaches a larger audience through their bike rodeo program. The Knoxville Police Department hosts a “Helmets & Hotdogs” event at the Municipal Building on the last day of school. The day was chosen because it is a half-day for the schools, so families have already planned to pick up their children mid-day. Through partnerships with the Fire Department, Marion County Public Health, Knoxville Community School District, Knoxville Hospitals and Clinics, the University of Iowa Hospitals and Clinics, and other individuals, the event includes a free hotdog lunch with chips and refreshments, a helmet give-away and fitting, and a raffle for two kids’ bikes. The first year brought about 200 local elementary school children, which grew to between 300 and 400 the next year. For each of the two years Helmets and Hotdogs has been held, all of the helmets have been given out.



Decorah, Iowa Safe Routes To School program
Photo credit: <http://iowafoodandfitness.org>

Bike Camp

In 2017, the Des Moines Bicycle Collective partnered with the Des Moines Police Department to host a week-long bicycle camp for local youth. Local volunteers and officers taught bike safety and skills, which included instruction in safe commuting throughout town on the way to destinations such as parks, recreation facilities, and the zoo. This type of event breaks down the societal barriers between youth and the police, encourages safe use of the biking network, and introduces children to places and activities throughout town that they may otherwise not be able to experience. Partnering with local destinations for free or reduced admission and special activities helps reduce costs for those participating.

Equipment Giveaways

Providing helmets and safety equipment such as lights and reflectors can be done as events separate from bike rodeos. The Dodger Cyclists club has done something similar with their recent helmet and bike light giveaways to local school children. Proper helmet fitting can take place along with the give-away.

SPECIAL BIKE, WALK, OR RUN EVENTS

National Bike Month

The month of May is National Bike Month and is the ideal opportunity to promote bicycling for transportation. Included in this month are National Bike to Work Week and National Bike to Work Day. Even if someone can't bike to work, they may be able to bike to the store, out to eat, to their place of worship, or to a friend's house. Webster County, Fort Dodge, and local businesses may celebrate Bike Month by hosting bike rides, commute challenges, bike rodeos, biking mentors, and providing incentives and celebrations associated with biking for transportation. The Bike League provides a guide to help with Bike Month activity ideas and programs.

<http://bikeleague.org/bikemonth>



Cedar Rapids Bike to Work Week 2017

Biking Events

Similar to running- and walking- specific events, organized bike rides provide an opportunity for people with similar interests to gather together for fun and fitness.

Mayors' Rides- Many cities organize a "Mayor's Ride," which are led by the local Mayor and show the city's support for bicycling. Some cities may also offer a "Mayor's Run." These events offer an opportunity to showcase the City's improvements in trails, biking and walking infrastructure over the past year. If the City chooses to charge a fee for the ride or run, it can serve as a fundraising event as well.

Unique Ride Ideas – Combining biking with another passion, such as music or food, is a recipe for success. For example, a specialty bike ride might combine biking and music, such as the Pedaler's Jamboree. The Jamboree includes two days of biking along a car-free trail route, camping, and musical artists at multiple stops off the trail. In 2017, the ride was held on the Chichaqua Valley Trail between Baxter and Bondurant.

Food-oriented, like the BACooN Ride on the Raccoon River Valley Trail in Dallas County, which features bacon-y treats along a 71-mile route through 13 communities, or the weekly informal rides on the Great Western Trail in Polk County to devour tacos in Cumming.

Another fun idea is to combine a bike ride with a scavenger hunt. This type of event can highlight features of the community by making the locations on the scavenger hunt be parks, historic places, or participating businesses.



BACooN Ride, Raccoon River Valley Trail <http://baconride.com>
Photo credit: Maharry Photography



DSM Mayor's Ride 2015

Running/Walking Events

Fort Dodge is home to many 5K races and other running events throughout the year. As running events continue to become more popular, the trails and bicycle and pedestrian facilities create new routes and opportunities for use.

Fundraising Events

Runs and walks organized by local non-profits, or local chapters of national organizations, are a popular and successful method of raising funds.

Fun/Novelty Runs

There are a handful of for-profit fun runs that travel from community to community across the country. They typically donate a portion of the proceeds to a non-profit charity. Some examples include The Color Run, Glow Run, Bubble Run, and Diva Dash. Because of the novelty aspects of these runs, they often attract a broader audience than more serious races and encourage novice runners to participate. These for-profit organizations may target communities that are larger than Fort Dodge; therefore, as an alternative, local organizations may want to consider adopting some of these themes to potentially increase participation in their events.

Relays

Running relays can range from a short event to a day or multiple days long. For example, the Market to Market Relay race uses the Central Iowa Trail system for relay teams to travel 75 miles through 12 communities, and lasts approximately 12 hours.

Ultramarathons

Elite ultramarathoners will travel far for these long-distance runs, which are typically 50 or 100 miles. Many of these races include a looped route, so they can be contained within a single community or within a few county roads, despite the distance. For example, the Booneville Backroads Ultra is held in Madison County on hilly, gravel roads.



2008 fundraising walk, Gray's Lake Park, Des Moines, Iowa

Open Street Events

These events temporarily close streets to automobile traffic, so that people may use them for walking, bicycling, dancing, playing, and socializing. They are different than a street fair in that they are typically health and activity-oriented and are laid out with room to run, bike, skate or even play basketball. There have been open street events all over the Country and even in cities in Iowa, including Des Moines and Decorah. These free events may take place weekly, monthly, or annually during warmer months. <http://openstreetsproject.org>



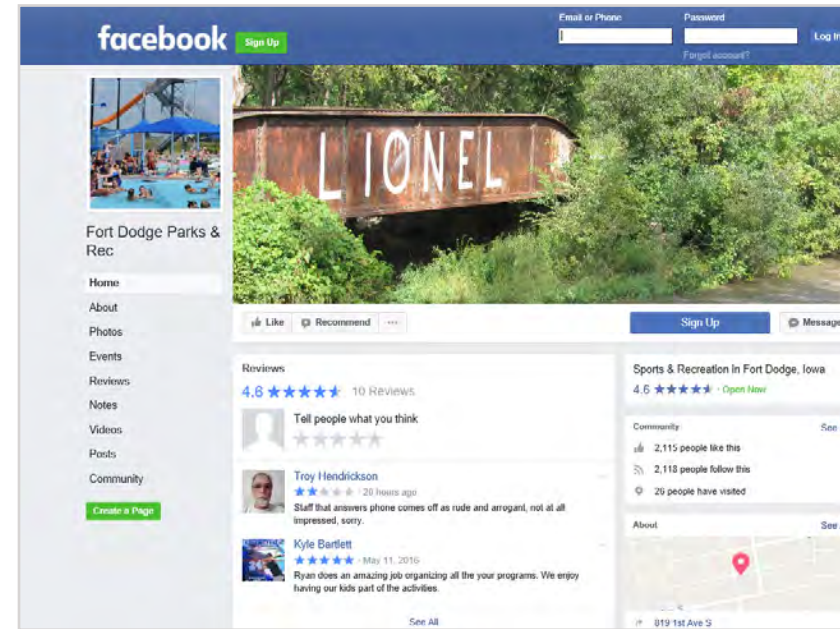
Open street event: DSMove, Des Moines, Iowa

IMPLEMENTATION

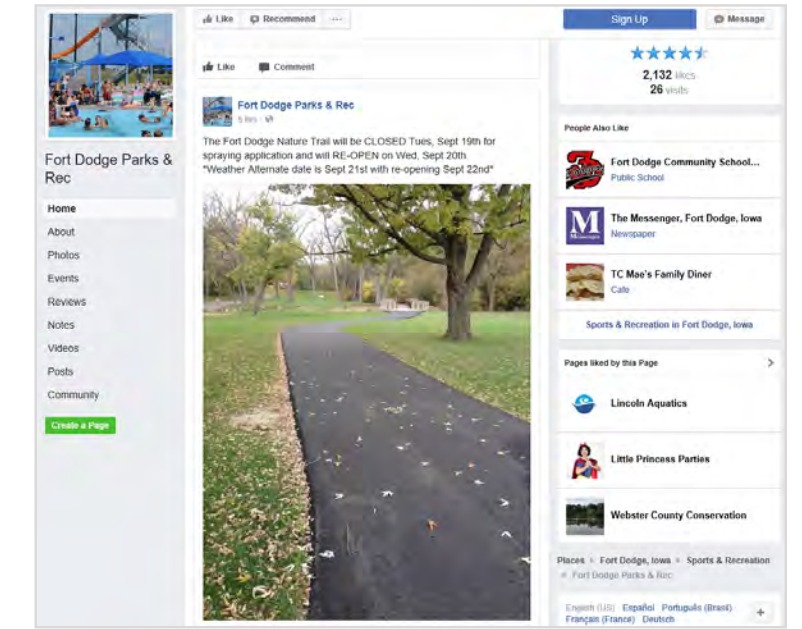
Promoting trail use and providing up-to-date information on network routes, conditions, and other relevant information is essential. A recommended trail marketing matrix shows how different types of messages could be disseminated.

COMMUNICATION PROTOCOL DEVELOPMENT

Emails and texts could be sent through an automatic distribution list. To reach older demographics, print materials such as newsletters and flyers could be sent through regular mailings like utility bills or the local newspaper. Additionally, flyers and newsletters could be available in public buildings and local businesses. Information should also be easily located online on the City's and County's websites, as well as their official social media pages, in order to target the younger and middle-aged demographics.



Fort Dodge Parks and Recreation Facebook page



Fort Dodge Parks and Recreation Facebook post: Trail Closed

Marketing Calendar

	Message	Dates	Responsible Parties	Message Medium							
				Email	Website	Texts	Flyers	Social Media	Permanent Signage	Temporary Signage	Newsletter/ Program Catalog
Short-Term	Emergency Closures/Reopenings	Year-round	PRF, WCCB								
	Snow Removal Status	November-March	PRF, WCCB								
Mid-Term	Special Events and Classes	March-October	PRF, WCCB, GFDGA, CVB								
	Staff/Department Info	Year-round	PRF, WCCB								
	Grants and Donors	As-needed	GFDGA, FDCF								
	Snow Removal Routes	November-March	PRF, WCCB								
	Upcoming/Planned Closures	Year-round	PRF, WCCB								
Long-Term	Static Trail Map	Year-round	BACG, ENG								
	Interactive Trail Map	Year-round	PRF, WCCB, BACG, ENG								
	Amenities (e.g. bike parking, fixit stations)	Update Seasonally	PRF, WCCB, BACG, ENG								
	Trail Etiquette/Rules/Safety	Annual (push in May)	PRF, WCCB, PD								
	Future Plans	As-needed	GFDGA, TAB								
	Bike Friendly Businesses	Year-round	GFDGA, TAB, WCHD, CVB								
Benefits of Trails/Biking/Walking	Year-round	GFDGA, WCHD, CVB									

- PRF = Parks, Recreation and Forestry (Fort Dodge)
- BACG = Businesses Affairs and Community Growth (Fort Dodge)
- ENG = Engineering (Fort Dodge)
- PD = Police Department (Fort Dodge)
- WCCB = Webster County Conservation Board
- WCHD = Webster County Health Department
- TAB = Trails Advisory Board
- GFDGA = Greater Fort Dodge Growth Alliance
- FDCF = Fort Dodge Community Foundation
- CVB = Conventions & Visitors Bureau

Email and Text

The City of Fort Dodge already has an email and text update platform available by calling the Parks and Recreation office to sign up. It is a great service, and with a few recommendations could be even better source for quick dissemination of trail information.

The Parks, Recreation, and Forestry Department has identified frequent duplication of profiles for individuals and families as an issue, making the transition to a user-initiated system difficult.

- Rather than have potential users call to sign up, the City could benefit from trouble-shooting their online form to allow interested users to sign up at their leisure, rather than calling during business hours.
- A fully online system through the eGov's website platform with individual logins would allow users to easily sign up and manage their preferences.
- The form should provide options for the types of alerts interested users can sign up for (e.g. trail closures, weather cancelations, snow removal notifications, etc.).
- This service should be marketed beyond the Parks and Recreation program guide on the City website, official social media accounts, and flyers.
- For trail system-related notices, the City could partner with Webster County to push out notifications for the whole Prairie Rivers Trail System, rather than require trail users to sign up for multiple alert platforms based on whether the trail is in Fort Dodge or elsewhere in the county.

Website

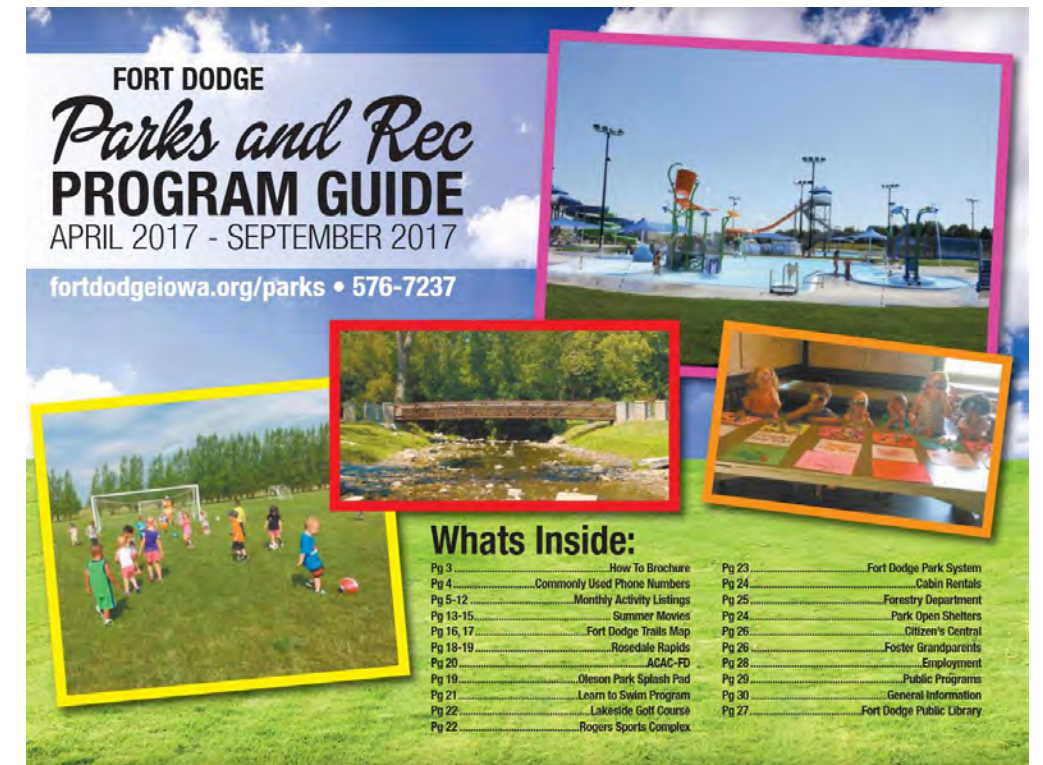
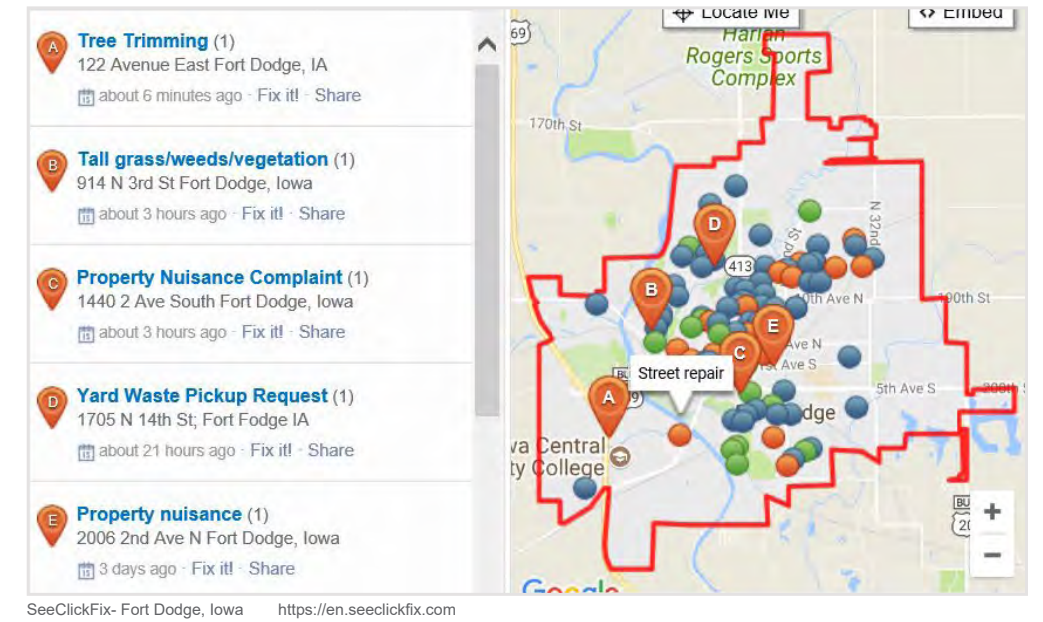
The City's website is the best place for anyone to find information, as it will likely be the first place residents and visitors go for information. It can be updated quickly by staff, and often government website platforms provide an option to schedule future posts that were written ahead of time.

It could be beneficial to create a trails-specific area of the website where all relevant information can be easily found and accessed. This page could be a collaborative effort between Fort Dodge and Webster County indicating that they are working together on the trails system, and it would create a single source of information for current and potential trail users. Webster County could provide a link to this page on their website.

The City website has a useful tool in SeeClickFix, which can also be downloaded as an app to any smartphone. It is a great resource for trail users to contact City staff about maintenance issues throughout the system, and also warns other users that an area may be experiencing issues.

Flyers

This is a quick and easy way to get information out to a broad audience. Eye-catching material may include event announcements, fundraising drives, and general information like trail etiquette and safety. These can be easily created by City and County staff, as well as local partners, and distributed to public buildings and local businesses.



Fort Dodge Parks and Recreation program guide

Social Media

Using existing City and County social media pages like Facebook provides a waiting audience. As more trail and bicycle-related information is posted to these sites, the number of followers will increase through post shares, retweets, and word-of-mouth.

The Parks, Recreation, and Forestry Department already has a social media committee that develops and posts social media content. Broadening the membership and scope of this committee to include other City and County officials who are directly involved in bicycle, pedestrian, and trail operations and maintenance would streamline the communication process by coordinating messaging to reduce the likelihood of duplicate or missing information.

The designated page managers should also make use of other organizations' social media pages. Bikelowa and the Iowa Bicycle Coalition page are great resources for trails-related information. Cultivating relationships with these organizations can be a successful way to reach out to a wider audience for events and local biking and trails news.



BIKEIOWA Facebook post advertising the Jamboree music festival
Photo credit: BIKEIOWA

Newsletter/Program Guide

The Parks, Recreation, and Forestry Department already produces a seasonal program guide. Pre-planned and annual classes and trail events simply need to be added to the guide when appropriate. Newsletters and program guides could highlight trail etiquette and new trails. Newsletters are also a great resource for informing the community about planned trail closures, special events, and local fundraising efforts.

Permanent Signage

Information that is unlikely to change frequently should be incorporated into permanent signage like trailhead kiosks and on-trail wayfinding signs.

Temporary Signage

Temporary signs are intended to alert trail users to short-term changes in the condition of or traffic on the trails. These signs could be simple—such as a laminated sheet of brightly colored paper attached to a stake, inexpensive yard signs, or road closure barricades. The purpose of these signs is to alert trail users to issues like emergency or planned closures, and to alert them to special events that may not close the trail but might affect users' ability to enjoy a minimally crowded path. If there are areas that frequently close due to flooding or other maintenance needs, one option would be to invest in gates at trail entrances that are easily closed during hazardous conditions.



Trail closure sign: Chichaqua Valley Trail



5

ENFORCEMENT AND EVALUATION

Enforcement Guidance
Evaluation Techniques

ENFORCEMENT GUIDANCE

Ensuring that there are guidelines in place for managing the interactions between motorists, pedestrians, and bicyclists on the roadway is critical to fostering an environment where people feel safe when biking and walking.

Enforcement applies to city ordinances related to design and development as well as behavior of motorists, bicyclists, and pedestrians. Local ordinances should be used to promote development and maintenance of safe sidewalks throughout the community, well-designed infrastructure for bicyclists and pedestrians in the street right-of-ways, bicycle parking near the entrances to multi-family and commercial areas, and pedestrian and bicycle connections between streets, parking lots and buildings.

Both motorists and bicyclists have a responsibility to follow the rules of the road to ensure the safety for all road-users. Police officers, prosecutors, and judges should treat bicyclists and pedestrians equitably when it comes to traffic enforcement. Police officers must treat bicyclists as equal to other road users when investigating crashes, recognizing that:

- Bicyclists have a right to use roadway travel lanes as full and equal drivers making normal driver movements per the rules of the road;
- Bicyclists are entitled to due care in investigation work and reporting; and
- Bicyclists are entitled to equal treatment when fault is assigned.

The following actions are recommended to support equitable enforcement of traffic laws and ensure bicyclist and pedestrian safety:

- Provide fire and police departments with maps of the trail and on-street bicycle network, along with access points to gates/bollards.
- Educate police officers on proper enforcement and treatment of bicyclists when patrolling, investigating and issuing citations in the field.
- Enforce speed limits and other rules of the road on all users.
- Equip officers with bicycles for patrolling the trail and on-street bicycle network. This will facilitate access to places that may be difficult for a vehicle to reach, while also providing officers with a better understanding of the challenges particular to bicyclists trying to navigate throughout the city.

Many of these issues are addressed in the Existing Policies section of this plan, with proposals and considerations for changes to local regulation changes based upon a model ordinance.

Having a police bicycle patrol can provide many benefits to the bicycling community, and offer benefits to the police force as well. Bicycles take up less room and can enable officers to monitor areas where motor vehicles are limited. Bicycles are quiet and can be discreet when tracking or monitoring an area for criminal activity. When officers use bicycles through neighborhoods, they are more approachable and increase contact with residents, which improves safety in the community.

It would be beneficial for public safety to become more visible on the trails outside of special events. Having officers trained in bicycle patrolling would help, as will the Utility Task Vehicle the Police and Fire Departments currently use during large events. Increased patrol on the trails and other facilities promotes a sense of community safety, and encourages personal interaction to break down the cultural barriers between law enforcement and the community.



An officer with the Knoxville Police Department navigates the safety course at the 2017 Helmets & Hotdogs
Photo credit: Nathan Sage, KNIA/KRLS



An elementary school student preparing lunch while wearing his new helmet
Photo credit: Nathan Sage, KNIA/KRLS

EVALUATION TECHNIQUES

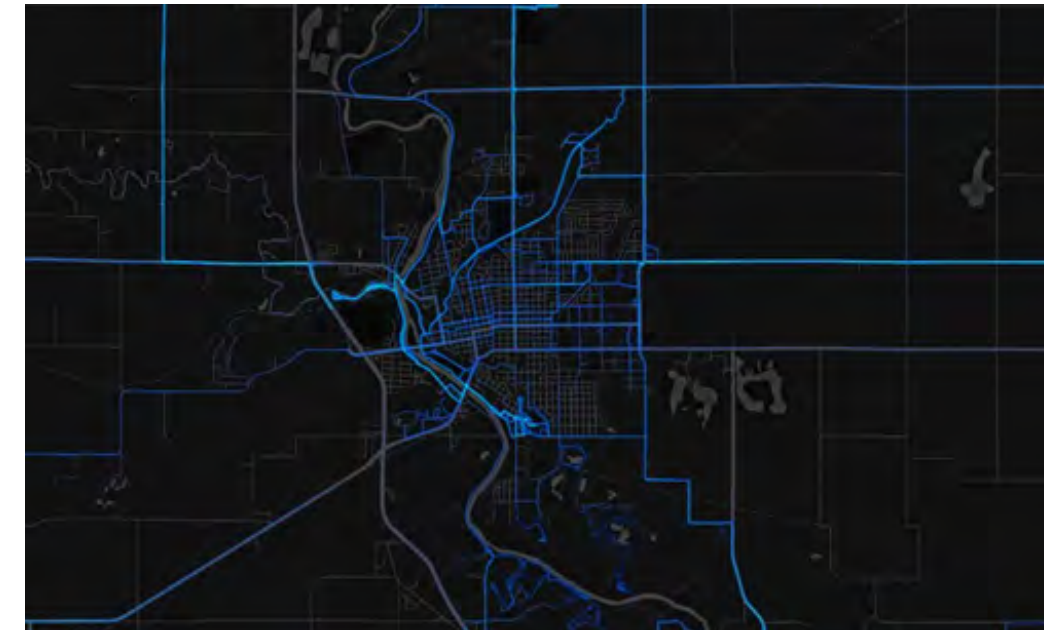
An evaluation plan will enable the City and County to measure the success of the bicycle and trail network and the goals set forth in this Master Plan. These measures range from something as simple as tracking the number of bicycle racks installed each year, to more complex methodology such as trail counts. All data should be collected and used to mark and communicate successes and identify areas of need. The City and County can then improve areas of need as appropriate through additional engineering, education, encouragement, or enforcement. The following actions are recommended to evaluate Hike & Bike WC:

- Track Miles of Facilities – Measure the miles of trails, on-street bikeways, and new sidewalks completed each year. Calculate these as a percentage of the proposed completed networks to progress throughout Fort Dodge and Webster County.
- Track Expenditures – Keep track of the amount of funding used for the following programs:
 - Planning, design, engineering
 - Education and outreach
 - Encouragement
 - Enforcement
 - Evaluation
- Count Bike Racks – Record the total number and location of bike racks, the total number of bike parking spaces in these locations, and whether they are community-owned or privately owned.
- Count Bicyclists and Pedestrians – By performing annual bicycle and pedestrian counts on both streets and trails, the City and County will be able to identify ridership trends over time. Counts should also be taken prior to installation of a new bicycle facility to establish a baseline for evaluating the impact of a facility after construction.

The two main ways to count bicycles and pedestrians is by using infrared sensors and by manual counts. The benefit of sensors is that they can be placed in a hidden location and left for a long period of time, through all seasons and all hours of the day. The drawback is that the counter cannot distinguish between bicyclists and pedestrians, male and female, or person and animal. They also typically register only one count when two or more people are passing the sensor side by side.

Manual counts can include numerous criteria that infrared counters cannot. In addition to those listed above, the people conducting the counts may note helmet usage, approximate age of user, or direction of travel. The National Bicycle and Pedestrian Documentation Project (NBPD) has developed a standardized methodology, survey and count forms, and reporting forms for counting bicyclists and pedestrians on trails and on streets. County or City staff may perform the counts themselves or assist partner agencies or volunteer groups in performing the counts. The downside to this method involves the amount of staff or volunteer time it takes to complete the counts. <http://bikepeddocumentation.org/>

Strava is an application that allows its users to record and track their running and bicycling trips. Strava offers aggregate data for sale to communities, so that they may analyze and learn more about walking, running, and bicycling in their community. This can also be used as a potential data source for tracking trail and bicycle facility usage. However, the app is often used by avid runners and cyclists, and may skew the data regarding facility usage toward “Strong and Fearless” athletes. Detailed data is available as a fee-service. However, communities can view publicly available heat maps online for free, which if done on an annual basis could provide a visual display of network use changes over time.



Strava Heat Map, 2015 Biking, Fort Dodge, Iowa
Photo credit: <http://labs.strava.com/heatmap/#6/-120.90000/38.36000/blue/bike>

- Incentive Programs – If there are incentive programs created, tracking the number of incentives provided in each of these programs could potentially show a progression or decline of commuting, safe bicycle use, exhibiting good trail manners, etc. For example, track the number of give-away events and the number of helmets or other items given away. The results of program participation can help identify successful programs or indicate potential changes.
- Local Health Statistics – Local health statistics could potentially show if the trails are benefitting public health in Fort Dodge and Webster County by reducing the number of sedentary lifestyle-related health problems like diabetes or obesity. Tracking head injuries resulting from bicycle crashes whether or not the rider was wearing a helmet can also provide feedback on the success of helmet giveaways and safety education and marketing.

- **Social Media** – Tracking the number of followers on Facebook, Twitter, and other social media sites can create a good measure of how many people you are reaching with your messaging. Facebook Pages has helpful tools for measuring reach and engagement for specific posts. Third party analytics tools can also be downloaded that measure reach and engagement across multiple platforms. Using this information can provide insight into the types of messages that work best.
- **Track Crashes** – Collaborate with the Fort Dodge Police Department, Webster County, or Iowa DOT to track bicyclist and pedestrian crash locations and statistics annually. This will help identify barriers and problem areas that may need some type of infrastructure improvement. It will also establish safety trends over time.
- **Log Calls to City/County** – Tracking the number of calls related to bicycle or pedestrian issues can help determine if there are safety issues that need to be addressed in certain areas. It may point to problems like brush overgrowth causing blind corners or limited sightlines at intersections, a pavement management issue, or a need for better lighting.
- **ADA Compliance** – Compliance with the Americans with Disabilities Act (ADA) is another way to monitor success toward making a walkable community. ADA requirements address details related to moving around in the public realm such as sidewalks, crosswalks, signage, railings, and pedestrian ramps. These types of elements can be improved to make the community safer and more accessible for people of all ages and abilities. Communities may conduct an ADA audit to identify areas needing improvement and track completion of those projects over time.
- **Bicycle Friendly Businesses** – Keeping an active list of Bicycle Friendly Businesses, as designated by the Bike League or a local organization, helps track the total number of such businesses, as well as identifies concentrations or gaps within Fort Dodge and Webster County. Doing so could benefit event coordination by identifying additional amenities

available near the event location, bolster local commuting and tourism by creating the opportunity to plan trips around available services, and could help with outreach efforts by the City, County, and organizations like the Greater Fort Dodge Growth Alliance to increase the total number of Bicycle Friendly Businesses and encourage their introduction into new locations throughout the area. Regular surveys of Bicycle Friendly Businesses can help to collect details that could be used to market the program to new and prospective businesses. The data can also be used to strengthen an application to become a Bicycle Friendly Community.

- **Safe Routes to School** – Tracking the number of kids walking and biking to school before and after implementation of the plan can show if the new trails and facilities are increasing daily activity in school-age children. The City and school could also help families or neighborhoods establish walking or biking school buses, and track how many children participate and the average number of days these buses are “in service” each school year.
- **Update the Hike & Bike WC Master Plan** – Annually evaluate the goals and objectives, and the progress toward those goals. Identify new priorities, funding, and improvements as needs change over time.
- **Bicycle Friendly Community** – The Bicycle Friendly Community award program through the League of American Bicyclists is designed to recognize progress that has been made as well as to assist communities in identifying priority projects to improve existing conditions. Communities are encouraged to fill out a detailed application that covers bike-related facilities, plans, education efforts, promotion initiatives, and evaluation work. The feedback from the League is a helpful tool for evaluating the effectiveness of the County’s current efforts and providing feedback on projects, policies, programs, and plans to improve conditions for bicycling.

Evaluation Matrix

The best way to track metrics is to keep accurate records. One way to do this is to create a shared table or spreadsheet that the City, County, and local partners can fill out on a regular basis. A sample of a basic Excel tracking spreadsheet is shown below. Utilizing multiple sheets within the same Excel workbook keeps all of the information in one place, making time-series evaluation a matter of creating the appropriate equation.

Evaluation Item	Current Status		Frequency
	Fort Dodge	Webster County	
Miles of Facilities			
Expenditures			
Bike Racks			
Trail User Counts			
Social Media Engagement			
Helmet Giveaways			
Incentive Programs			
Health Statistics			
Bike/Pedestrian-Involved Crashes			
Calls for Maintenance			
ADA Compliance			
Bicycle Friendly Community Award			
Bicycle Friendly Businesses			
Safe Routes to School			
Update Master Plan			



6 ORDINANCES AND POLICIES

Complete Streets

Snow Removal

Bike Parking

Emergency Plan

Bicycle Ordinance

Sidewalk Ordinance

Other Power-Driven Mobility Devices

Webster County Trail Entrance Permits

COMPLETE STREETS

The term “complete street” means one that accommodates safe travel by people of all ages and abilities through any mode of transportation they prefer. This includes design, construction, and operation management of the street to accommodate those modes such as driving, walking, bicycling, riding transit or other means while connecting to a larger transportation network. Complete street designs may vary across a community, and different streets may prioritize different modes of travel, but they none should be restricted to any single mode.

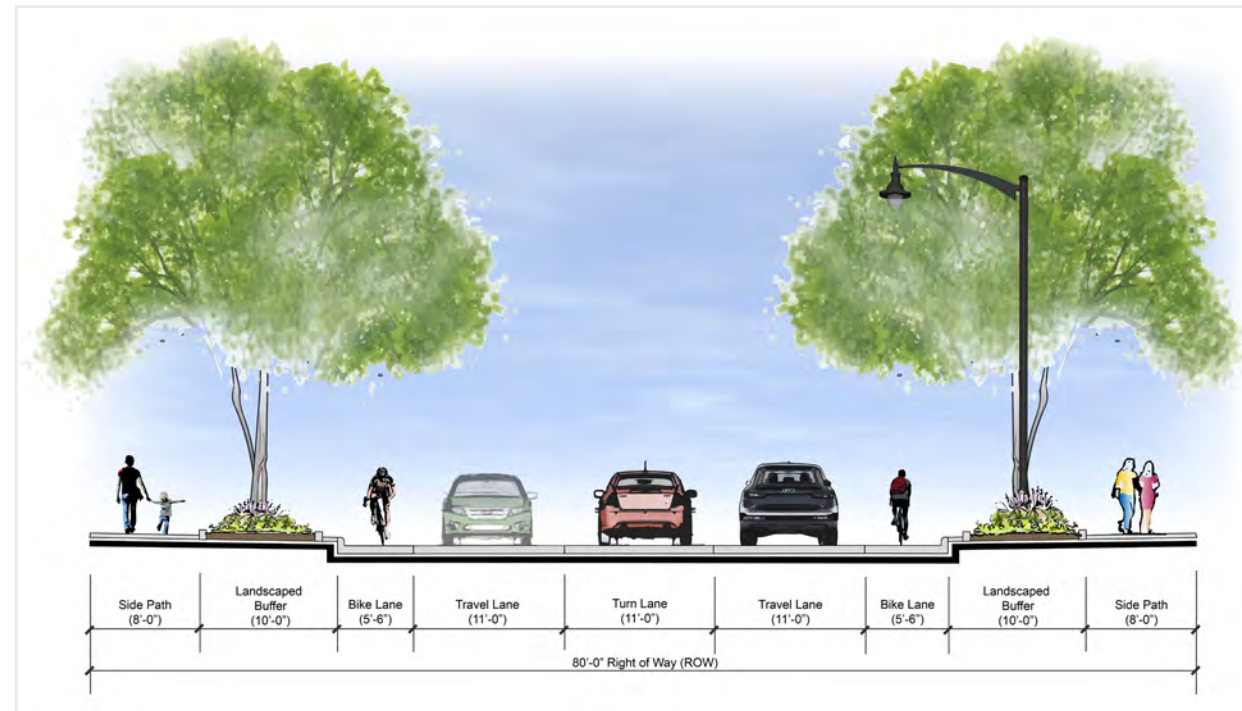
The Fort Dodge City Council has instituted the following Complete Streets guidelines:

“All new street right-of-way or reconstructed street right-of-way should be designed to safely accommodate motor vehicles, pedestrian, non-motorized vehicles, where feasible motorized carts.

Certain off street infrastructure must also be addressed with street reconstruction or resurfacing. All driveway approaches from the street to the right-of-way line must be PCC or HMA hard surface and fully assessed to the property owner.

Sidewalks will be installed if none exist, or repaired if in poor condition and fully assessed to the adjacent property owner. As part of the reconstruction the city will conduct a conditional analysis to determine if the sidewalk sections need to be replaced, or installed if none exist. Adjacent property owners will be given an opportunity to replace sidewalk themselves. The City will install accessible corner ramps at city expense.

In the event of extraordinary circumstances the City Council may make exception to the policy that new sidewalks shall be installed as part of a reconstruction project. Said extraordinary circumstances may include, but are not limited to: Irregular topography, or conflicts with other infrastructure, street trees, or other structures to the extent that the installation of a sidewalk would cost 150% of the cost of a typical sidewalk installation at that time.”



Example of 4-lane complete street with bike lanes and sidewalks

RECOMMENDATIONS

The current complete street policy in Fort Dodge only addresses the consideration of sidewalks along the street network. This is a major component of a complete street system, but sidewalks and vehicular travel lanes do not sufficiently address all modes of transportation and the policy does not create a methodology for conducting the conditional analysis to determine if a sidewalk should be replaced or installed if none exists. The policy should be revised to address all elements of complete streets, including bicycle and transit accommodations, or designs that improve safety or calm traffic. It should also set forth an implementation methodology.

The appendix includes a sample provided by the Des Moines Area Metropolitan Planning Organization. It creates a robust definition of and procedural guidance for implementing a healthy complete streets program.

SNOW REMOVAL

The City currently removes snow on trails within 48 hours from Williams to Avenue C and the Riverfront trail from the little dam to Casino Park and on to South Loomis. Staff proposes adding the segment from South Loomis to North Loomis to the snow removal route.

The Iowa Community Assurance Pool (ICAP), the City's liability insurance provider, advised that the City should adopt an official policy detailing whether the City will or will not remove snow and ice. If it is decided to remove snow and ice from the trails, the responsible department then has a duty to clear trails of snow and ice. If there are trails that are not included in the regular snow removal route, the policy could be drafted to show they may be plowed on an as-needed basis. For example, the City of Fort Dodge or Webster County may want to remove snow on all trails in preparation for an unseasonably warm weekend during which high usage is expected.

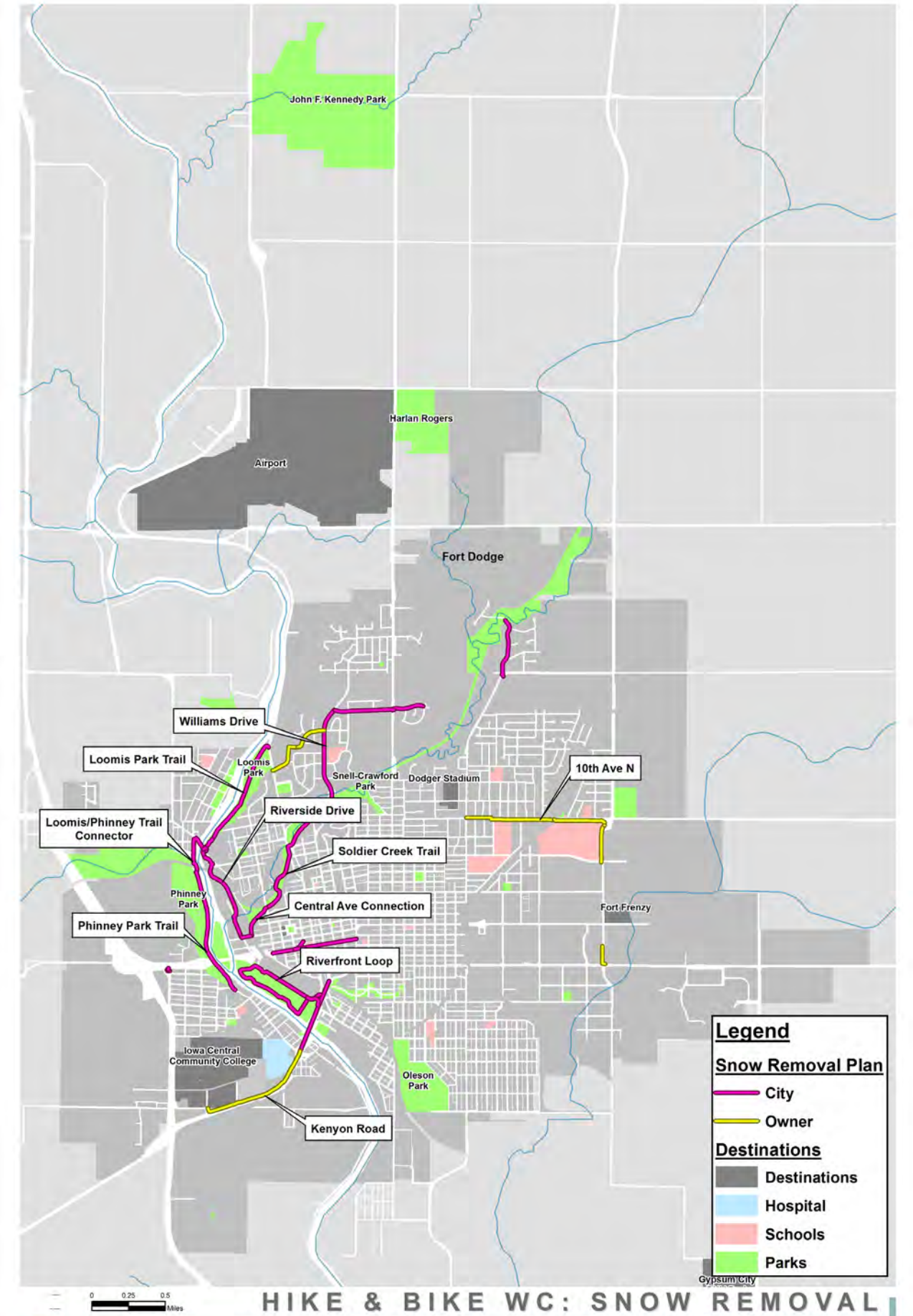
There are concerns, however, with effects on the expected lifetime of the trail pavement due to winter vehicle traffic, blade damage, and the (potential) application of salt. If the City and County expand their snow removal on trails, additional equipment may be needed and the ongoing effects on operations and maintenance must be taken into account. Blade damage is particularly a problem on bridges with an arch in the deck, as plows easily run into the transition slope to the arch. Plows and salt are also likely to damage turf along the edges of trails, and run into signs and posts along the edge of the trail.

The seasonal nature of the usage of trails leads to differing opinions and practices amongst jurisdictions as it relates to snow removal on the trail system. Many communities do not remove the snow since the usage of the trail system drops during the winter months. Some are also concerned about liability on the trail system, with the concern that if they remove the snow, they send the message that the trail is safe; consequently, if someone is hurt, the local jurisdiction could be held liable.

Other communities choose to keep their trails open and operational to encourage residents to be active and healthy year-round. Liability concern is alleviated because Iowa Code 670.4(1)(o) protects local jurisdictions when injuries or damages result from the "normal and expected risks inherent in the recreational activity" on public property.

Iowa Code §670.1

- Any claim for injuries or damages based upon or arising out of an act or omission of an officer or employee of the municipality or the municipality's governing body and arising out of a recreational activity occurring on public property where the claimed injuries or damages resulted from the normal and expected risks inherent in the recreational activity and the person engaging in the recreational activity was voluntarily on the public property where the injuries or damages occurred and knew or reasonably should have known that the recreational activity created a substantial risk of injuries or damages.



HIKE & BIKE WC: SNOW REMOVAL

Iowa Code §670.4 Claims exempted

1. The liability imposed by section 670.2 shall have no application to any claim enumerated in this section. As to any such claim, a municipality shall be liable only to the extent liability may be imposed by the express statute dealing with such claims and, in the absence of such express statute, the municipality shall be immune from liability.

Iowa Code §364.12(2)(b) allows for damage recovery from injuries sustained by negligence in sidewalk maintenance by the abutting property owner. Ordinances and policies should differentiate between sidewalks and sidepath trails, and who is responsible for maintenance of specific facilities to avoid legal grey areas. The language of such policies and ordinances should be discussed with the city attorney.

Title 12, Chapter 12, Section 4 Streets and Sidewalks of the Municipal Code states:

12.40.008 Definitions

“Sidewalk” means that portion of the right-of-way between the street curblineline or traveled portion of the roadway and the adjacent lateral property line upon which a hardened surface has been applied for the purpose of providing a public walkway for pedestrians.

12.40.012 Removal of snow and ice from sidewalks

Abutting property owners shall remove snow and ice from the sidewalks abutting their property within twenty-four hours of the cessation of the snowfall or ice formation.

12.40.016 City’s right to remove

Whenever snow or ice has been allowed to remain upon any sidewalk within the city of Fort Dodge, Iowa, for a period of more than twenty-four hours following the cessation of snowfall or ice formation, the city shall have the right to remove the snow and/or ice in such manner as it deems most effective.

12.40.020 Assessment of costs

Whenever any snow or ice is removed from any sidewalk by the city as provided in Section 12.40.016, such removal shall be reported to the city council together with a description of the property and the number of square feet of snow or ice so removed from the sidewalk along with the name of the abutting property owner for the purpose of assessing the cost of such removal against the property. A hearing shall be set, the property owner notified thereof; following such hearing, the council may direct the assessment of the case thereof against the abutting property as by law provided and at the rate set out in Section 12.40.024.

12.40.024

The cost of removal of snow and ice from public walks as set out in Section 12.40.016 shall be determined annually at a rate per square foot. The city engineer shall determine such rate and establish same by department of engineering regulation subject to council approval.

RECOMMENDATIONS

The City and County should maintain a written snow removal policy which specifies which trails will have snow removed and within what timeframe, similar to the existing practice. The policy may list trails that will be subject to regular snow removal within 48 hours and additional trails that are subject to snow removal if snow remains on the trail prior to a weekend forecasted to have temperatures above freezing (or some other reasonable threshold).

As new trails are constructed, the City and County should evaluate the need to remove snow based upon the likelihood that the route would be used for transportation purposes, including commuting to work, school, or other daily needs.

Title 12, Chapter 4 does not cover sidepath trails within the right-of-way abutting private property. The chapter should be amended to include language that requires abutting property owners to clear a path on the trail that is the equivalent of the width of a sidewalk. The path must remain contiguous with adjacent parcels, either on the street side or house side of the trail.

However, if the City has identified a particular sidepath trail as one that is to have regular snow removal, then the adjacent property owner would not have a responsibility to clear the sidewalk-width path.

BIKE PARKING

Bicycle parking is addressed in the Municipal Code, as well as in the 2015 Downtown Parking Study and Downtown Design Guidelines.

Title 17, Chapter 8, Section 030 (G)(11) of the Municipal Code, entitled **Bike Rack**, states:

- a. Multi-family and commercial uses shall provide bicycle parking spaces equal to five percent (5%) of the number of required motor vehicle spaces. A minimum of one (1) space shall be required.
- b. It shall be located in reasonable proximity to the building entrance, but not such that bicycles would obstruct sidewalks or parking stalls.
- c. It shall be located on a hard surface that is permanently dust-free.
- d. Bike racks shall be professionally manufactured and permanently installed.

Additionally, Section 030 (F)(1)(i) states that “bike rack information, at minimum the manufacturer’s specifications” is required for administrative and minor site plan application submissions. However, the City’s Site Plan Review Supplemental Information Checklist requires bike rack information only “if required by change in parking.”

In 2015, the City received the final report of a Downtown Parking Study. A section entitled “Bicycle” suggests the addition of bicycle racks to the downtown area to encourage bicycle ridership. The following guidelines were proposed:

- Racks should allow bike frame to make contact at two points
- Should allow for more than one bike per rack
- Needs to allow for popular “U” shape lock
- Racks should be placed where they will not impede upon pedestrian traffic, though need to be readily identifiable
- Should be clearly signed with a bicycle parking sign

The parking study suggested a 0 to 3 year timeline with ongoing maintenance, with an initial cost of \$100-\$300 per rack depending on size, type, and number of racks.

The Downtown Design Guidelines propose bicycle parking in the rear of the buildings in the core district. The gateway district allows for front yard bicycle parking as long as the area around the parking pad is landscaped. The same is true for the fringe district. However, these design guidelines do not require bicycle parking to be added, but suggests where parking could be located.

RECOMMENDATIONS

The language in 17-8-3(G)(11)(c) should be amended to allow for artistic or custom designs that meet Association of Pedestrian and Bicycle Professionals (APBP) *Essentials of Bike Parking* guidelines.

These guidelines should be implemented throughout the city for all multifamily, commercial, industrial, institutional, and governmental sites (i.e. all uses except single-family and two-family residential). The required number of bike parking spaces should be reevaluated based on each land use type. For example, schools and libraries need a higher percentage of bike parking spaces, while some manufacturing sites may require a lower percentage. Ample bicycle parking should also be provided at parks and trailheads. There are no existing guidelines for how many spaces should be required by land use. Reviewing other cities’ policies and ordinances will provide the most up-to-date information on how municipalities in Iowa and throughout the Midwest confront this issue.

The Downtown Design Guidelines should be amended to allow for parking in front of buildings in the core district where sidewalk width permits it, and remove the landscaping requirement for the gateway and fringe districts per APBP bike parking guidelines. Disallowing parking in front of buildings discourages commuting riders from patronizing downtown businesses by making it difficult to know if or where there is bicycle parking available. The City should then work with business and building owners to begin installing racks to promote ridership throughout downtown.

The bicycle parking guidelines should clarify how bicycle parking spaces are counted. Typically, one bicycle rack provides parking for two bicycles. The spacing of multiple racks should be in accordance with APBP bike parking guidelines.



Custom bike rack in Fort Dodge, Iowa



Existing bike racks in Fort Dodge, Iowa

EMERGENCY PLAN

The Nature Trail currently has one-half mile markers along the trail for emergency response. However, the system is being transitioned to the Federal Geographic Data Committee's U.S. National Grid (USNG). The USNG provides a cross-jurisdictional "language of location" (usngiowa.org)

The USNG is a single-format, point grid reference system that guides rescue teams to incident locations, aiding rescuers that may be unfamiliar with the area or in areas in which there are no street signs or addresses. A coordinate is divided into three components: the Grid Zone Designation (GZD), a 100km square, and X/Y coordinates for locations that do not intersect with GZDs or 100km squares.



Emergency location sign on bench- Cedar Prairie Trail, Waterloo, Iowa



Example of USNG location sign (<http://www.usngstore.com/>)

RECOMMENDATIONS

The USNG marking should be included on all transportation, trails, and parks maps. As the USNG is not universally known, each map should also include information on how to read and interpret the signage. This way, residents and visitors who are unfamiliar with the USNG can understand how to utilize the signs in emergency situations and know how often signs can be found on the trails. A non-emergency number could be posted with the USNG information so that trail users know who to call when they see a maintenance or other non-emergency issue to report, as well as the inclusion of information for using SeeClickFix. Citizens can provide the USNG location so that staff can easily find and address the issue.

The City and County should market the changes as they take place through local media, social media, and the official organizational websites to engage citizens in the process. Classes should be offered for as many user demographics as possible during the transition.

BICYCLE ORDINANCE

The City of Fort Dodge has an existing bicycle ordinance that could be amended for better clarity, safety, and support for non-motorized modes of travel. This ordinance is analyzed below, with recommendations for amendments and other considerations. A model bicycle ordinance developed by the Des Moines Area MPO and vetted through member communities is included for comparison.

TITLE 10, CHAPTER 10, SECTION 040 BICYCLES.

Existing Ordinance	Recommended Ordinance	Considerations
<p>“Bicycle” means either of the following:</p> <ul style="list-style-type: none"> a. A device having two wheels and having at least one saddle or seat for the use of a rider which is propelled by human power. b. A device having two or three wheels with fully operable pedals and an electric motor of less than seven hundred fifty watts (one horsepower), whose maximum speed on a paved level surface, when powered solely by such a motor while ridden, is less than twenty miles per hour. <p>“Safety zone” means the area or space officially set apart within a roadway for the exclusive use of pedestrians and which is protected or so marked or indicated by adequate signs as to be plainly visible at all times while set apart as a safety zone.</p> <p>“Sidewalk” means that portion of a street between the curb lines, or the lateral lines of a roadway, and the adjacent property lines intended for the use of pedestrians.</p>	<p>“Multi-use recreational trail” means a way or place, the use of which is controlled by the city as an owner of real property, designated by the multi-use recreational trail maps, as approved by resolution by the city council, and no multi-use recreational trail shall be considered as a street or highway</p> <p><i>Drafter’s Note: Same as Des Moines Municipal Code section 114-1.</i></p>	<p>The ordinance should clearly define the differences between sidewalk and sidepath trails to avoid confusion regarding policies and enforcement. “Safety zones” could also be amended to include bicycle facilities and bicycle use on sidewalks when on-street facilities are not available.</p>



Existing Ordinance	Recommended Ordinance	Considerations
<p>10.40.010 License required.</p> <p>Every person who owns or operates a bicycle within the limits of Fort Dodge, Iowa, shall cause the ownership thereof to be registered at the office of the police department of the city. Upon such registration and passage of an examination as to his knowledge of the law regulating the operation of bicycles in the city, and payment of fifty cents, the police department will issue a metal license tag which thereafter shall be kept permanently attached to such bicycle.</p> <p>10.40.020 Licensed bicycle sold or transferred.</p> <p>In the event a licensed bicycle is sold or transferred, the license tag, plate or other means of identification shall pass to the new owner or transferee and the sale or transfer of such bicycle shall be reported to the city clerk by the new owner or transferee thereof within five days after the sale or transfer of such bicycle and the city clerk shall make a record of the sale or transfer together with the name of the new owner or transferee of such bicycle.</p>	<p>Voluntary Registration, Fee and Dealer Duty.</p> <p>a) Each resident of the city who is the owner of a bicycle may make application for registration with the police chief.</p> <p>b) The registration is valid until the bicycle is sold, given away, or scraped by the registered owner.</p> <p>c) Upon registration an identification sticker may be affixed to the bicycle by the owner.</p> <p><i>Alternative recommendation:</i></p> <p>Remove the registration requirements from the Code of Ordinances.</p>	<p>Registration is a disincentive to bicycle ridership, and the current code refers to riders of all ages – essentially requiring small children and those with cognitive impairments to pass an examination over local and state laws. It also places a heavy burden on many children and the cognitively disabled to take responsibility for registering their bicycles when they are incapable of doing so. Further, visitors will not know they are required to register with the police department, which is further complicated when someone visits on a weekend when the Police Department office is closed, but officers are still patrolling.</p> <p>There are also some benefits to mandatory bicycle registration. In the event of theft or police confiscation, it makes it more likely that stolen bicycles are returned to the owners. It is a potential funding source for facilities, maintenance, and/or education. And it is a potential tool in identifying an injured or unconscious rider (assuming they are riding their own bicycle) who is not carrying another form of identification – specifically children. However, administrative costs are barely covered by registration fees. Consequently, there is little profit left for trail building, maintenance, or education. Raising the fees creates another barrier that disincentivizes ridership. Mandatory registration of bicycles is not recommended.</p>
Existing Ordinance	Recommended Ordinance	Considerations
<p>10.40.030 Unlawful to alter registration tag.</p> <p>It is unlawful for any person to alter or counterfeit any registration tag, plate or other means of identification issued in conformity with this chapter.</p>	<p>Sec. 3. Alteration of serial frame number.</p> <p>It shall be unlawful for any person to willfully or maliciously remove, destroy, mutilate or alter the manufacturer’s serial frame number of any bicycle.</p>	<p>Rather than prohibiting the alteration of a registration tag, which would not be required, it would be more effective to prohibit the alteration of a bicycle’s serial frame number, which every bicycle has and can be used for identification of the bicycle.</p>



Existing Ordinance	Recommended Ordinance	Considerations
<p>10.40.040 Reflectors required.</p> <p>All bicycles shall be equipped with a red glass reflector to be placed on the rear part of the bicycle so as to be visible from the rear. This reflector shall not be smaller than one and one-half inches in diameter and of such type as may be approved by the police department of the city of Fort Dodge, Iowa.</p> <p>10.040.050 Illumination on bicycles.</p> <p>All bicycles used within the city limits shall during the hours from one-half hour after sunset and one-half hour before sunrise display a headlight on the forward part of the bicycle, such headlight to be stationary and to have illumination equal to that produced by a one and twenty-five hundredths volt electric bulb and battery. Flashlight in hand does not qualify as a stationary light.</p>	<p>Lamps and reflectors.</p> <p>a) Every bicycle ridden at any time from sunset to sunrise and at such other times when conditions such as fog, snow, sleet, or rain provide insufficient lighting to render clearly discernible persons and vehicles on the highway at a distance of five hundred feet ahead shall be equipped with a lamp on the front exhibiting a white light visible from a distance of at least three hundred feet to the front</p> <p>b) Every bicycle shall be equipped with a lamp on the rear exhibiting a red light visible from a distance of three hundred feet to the rear; except that a red reflector may be used in lieu of a rear light.</p> <p>c) A peace officer riding a police bicycle is not required to use either front or rear lamps if duty so requires.</p> <p><i>Drafter's Note: Same as Iowa Code sections 321.384 and 321.397, wording here combines the two state code sections.</i></p>	<p>This requirement for a rear reflector is reasonable, but an option for allowing a rear light should be included. Red rear lights may provide a superior illumination to the red reflector.</p> <p>The requirement that the headlight provide illumination equal to that produced by a one and twenty-five hundredths volt electric bulb and battery is too technical. This should be amended to specify a required number of lumens, or range of visibility. For example, Iowa DOT guidance from Iowa Code Section 321.397 requires "a white light on the front, and a red reflector on the rear, both visible for a distance of at least 300 feet."</p>
Existing Ordinance	Recommended Ordinance	Considerations
<p>10.040.060 Sirens on bicycles.</p> <p>The use of sirens on bicycles is unlawful.</p>	<p>Sirens and whistles prohibited</p> <p>A bicycle shall not be equipped with and a person shall not use upon a bicycle any siren or whistle. This section shall not apply to bicycles ridden by peace officers in the line of duty.</p> <p><i>Drafter's Note: Same as Iowa Code section 321.434.</i></p>	<p>Sirens and whistles on bicycles can startle other roadway and trail users and can potentially be used to mimic or impersonate a peace officer. A bell is recommended for bicyclists to use to alert others.</p>



Existing Ordinance	Recommended Ordinance	Considerations
<p>10.040.070 Parking bicycles.</p> <p>Bicycles shall be parked only at special parking places designated by the police department or in racks provided for bicycles located at suitable and safe places approved by the police department.</p>	<p>Parking.</p> <p>No person shall park a bicycle upon a street other than upon the sidewalk in a rack to support the bicycle or against a building or at the curb, in such a manner as to afford the least obstruction to pedestrian traffic, or upon the parking area between the sidewalk and the roadway.</p>	<p>The code as written requires the police department to officially designate any appropriate bicycle parking locations and to approve any installed bicycle racks. The police oversight is unnecessary and approval of bike rack locations can be managed by the City's planning department.</p>
Existing Ordinance	Recommended Ordinance	Considerations
<p>10.40.080 Operation of bicycles, skateboards, rollerblades and roller skates prohibited where.</p> <p>It is unlawful for any person to ride or operate a bicycle, skateboard or rollerblades/roller skates upon the public sidewalks in a business or school district in the city.</p>	<p>Operation on sidewalk.</p> <p>Bicycles may be operated upon the public sidewalks in a careful and prudent manner and at a rate of speed not exceeding eight (8) miles per hour except where signs are erected that prohibit the riding of a bicycle. Every person lawfully operating a bicycle upon a public sidewalk, shall yield the right-of-way when approaching a pedestrian shall give an audible signal before overtaking and passing.</p> <p><i>Alternative recommendation:</i></p> <p>The City and County may want to omit the portion of the recommend ordinance indicating that the rate of speed shall not exceed (8) miles per hour. It can be difficult to ascertain a cyclist's speed. The "careful and prudent" operation is more important for operation on a sidewalk.</p>	<p>This section as written effectively makes it illegal for anyone to ride a bicycle on a sidewalk within the city of Fort Dodge due to the use of the term "school district," as every part of the city is part of a school district. Amending this language to read "school zone" would, however, also be overly restrictive and discouraging of bicycle ridership as it would not allow children and/or their parents to commute to school by bicycle or by the other modes mentioned. Additionally, banning riding on sidewalks where there is no bicycle facility present can create dangerous traffic interactions for riders and discourage riding in those areas.</p> <p>The Code should be amended to allow bike riding and other modes mentioned to be allowed on all sidewalks with the condition of prudent operation. In some circumstances, these uses may need to be prohibited, and in those cases, a sign shall be erected stating the prohibition and the area affected.</p>



Existing Ordinance	Recommended Ordinance	Considerations
<p>10.040.090 Pedestrians have right-of-way.</p> <p>Pedestrians upon public sidewalks shall have the right of way over persons on bicycles, skateboards or rollerblades/roller skates upon public sidewalks not herein prohibited. In the event a bicycle, skateboard or rollerblade/roller skate operator and pedestrian shall meet on a sidewalk and there is not room for both while in motion the operator of the bicycle, skateboard or rollerblades/roller skates shall stop and yield right of way to the pedestrian.</p>	<p>Emerging from alley or driveway.</p> <p>The operator of a bicycle emerging from an alley, driveway or building shall, upon approaching a sidewalk or the sidewalk area extending across any alleyway or driveway, yield the right-of-way to all pedestrians approaching on the sidewalk or sidewalk area and upon entering the roadway shall yield the right-of-way to all vehicles approaching on the roadway.</p>	<p>It is customary practice that “wheels yield to heels” on trails and sidewalks. Trails may be added to the existing language.</p> <p>Also, the language indicates that the operator of the bicycle, et al, shall “stop and yield,” which is two different directions. Yielding does not require stopping and is not always necessary to give right-of-way to the pedestrian. The language should be revised to say that the operator shall yield, and if necessary, stop to allow passage of the pedestrian.</p> <p>Additional language may be added to address a bicyclist emerging from an alley or driveway, as indicated in the model ordinance.</p>
Existing Ordinance	Recommended Ordinance	Considerations
<p>10.40.100 Following fire trucks or towing.</p> <p>It is unlawful for any person riding a bicycle to follow fire trucks or other fire equipment at any time and it is unlawful for any person riding a bicycle to be towed or to tow any other vehicle operating upon the streets of the city.</p>	<p>Following Emergency Vehicles.</p> <p>No person riding a bicycle shall follow closer than 500 feet of an emergency vehicle as defined by Iowa Code section 321.1 which has emergency lights and/or siren activated, and shall not stop, park, or leave a bicycle within 500 feet of an emergency vehicle stopped in response to an emergency.</p> <p><i>Drafter’s Note: Iowa Code section 321.367 covers fire apparatus, but this proposed section includes all emergency vehicles as recommended by the Metro Advisory Council Bicycle Ordinance Study.</i></p> <p>Clinging to other vehicles.</p> <p>No person riding upon any bicycle on a street, sidewalk, highway, park road or multi-use recreational trail shall attach the bicycle or himself or herself to any moving vehicle by tow rope, hand grip or otherwise, and shall not tow or be towed by another bicycle or vehicle.</p>	<p>The ordinance has combined two separate issues: 1) following fire apparatus, and 2) towing or being towed by another vehicles. These two issues should be presented as separate items.</p> <p>This ordinance as written would prohibit any bicyclist from riding behind any fire apparatus, regardless of the distance or existence of an emergency situation. This should be amended to allow for bicycling within a reasonable and safe distance.</p> <p>The issue related to towing or being towed should be extended to all places of riding and should be better defined.</p>



Existing Ordinance	Recommended Ordinance	Considerations
<p>10.40.110 Single file riding.</p> <p>Bicycles shall be ridden single file in business districts and upon sidewalks in residential districts but may be ridden not over two abreast elsewhere. Bicycles shall be operated as near the right curb as possible at all times.</p>	<p>Place of riding.</p> <p>Every person operating a bicycle upon a street, sidewalk, highway, park road or multi-use recreational trail shall ride as near to the right-hand side of the way as practicable, exercising due care when passing a standing bicycle, other vehicle or one proceeding in the same direction. When so riding upon any street, sidewalk, highway, park road or multi-use recreational trail with other cyclists, there shall not be more than two abreast.</p> <p><i>Drafter's Note: Same as Iowa Code section 321.297</i></p> <p><i>Alternative recommendation:</i></p> <p>Bicyclists must ride with the flow of traffic on the right side of the roadway, except: when overtaking and passing another vehicle; when preparing for a left turn; when avoiding parked vehicles, drain grates, or debris; or when avoiding any other road conditions that may affect the operation of bicycles. Bicyclists may also ride on the shoulder or a designated bike lane. Bicyclists operating on a roadway at less than the normal speed of traffic shall ride as close to the right curb or edge of the roadway as is safe and practical.</p>	<p>Language should be incorporated for directing bicycle traffic along shared lane markings, allowing turning between road intersections at driveways, trails, and other openings in the curb. The second option includes language that defines other instances when people riding bikes should "take the lane" (i.e. not ride on the right side of the road) for the safety of themselves and those around them, and may be helpful to have in the ordinance for enforcement purposes.</p>







Existing Ordinance	Recommended Ordinance	Considerations
<p>10.40.140 Revocation or suspension of license.</p> <p>The police judge of the city of Fort Dodge, Iowa is authorized to revoke or suspend any registration or license issued by virtue of this chapter to any person after a hearing for any violation of any of the provisions of this chapter.</p>	<p>Omit.</p>	<p>This section is tied to the mandatory issuance of a bicycle license or registration and should be omitted.</p>

SIDEWALK ORDINANCE

There are two sections of Fort Dodge’s existing ordinances that address the provision of sidewalks and their maintenance needs.

TITLE 17, CHAPTER 8, SECTION 030(G)(10) SIDEWALK

1. Public rights of way
 - i. Widths required:
 - a. Four feet (4’) along residential streets
 - b. Five feet (5’) along all other streets
 - ii. Impractical circumstances may exist where sidewalks may not be feasible, at the time of the site plan approval. If any of the following situations are deemed applicable by the Director of Business Affairs and Community Growth or their designee the sidewalk requirement may be deferred:
 - a. Topographic challenges at and including lots within a block or more of subject property.
 - b. No logical connection opportunity.
 - c. Significant adverse impact to area drainage.
 - d. Conflicts with other infrastructure.
 - e. Not identified as an area for sidewalks in the City’s Sidewalk Prioritization Program
2. Private Property
 - i. Sidewalks are required along all sides of a building where parking is proposed, to facilitate pedestrian access to the building
 - ii. If parking stalls are adjacent to the sidewalk, it shall be 6’ wide, minimum
 - iii. Where parking is not adjacent, the sidewalk shall be a minimum of 5’ wide.

TITLE 12, CHAPTER 28, SECTION 020 PERMANENT SIDEWALKS – REPAIRS

The city council may by resolution order the construction, reconstruction and repair of permanent sidewalks upon any street, highway, avenue, public ground or market place within the limits of the city; but the construction of a permanent sidewalk shall not be made until the bed of the same shall have been graded so that when completed such sidewalk will be at the established grade; and to assess the cost thereof on the lots or parcels of land in front of which the same shall be constructed in proportion to the special benefits conferred upon the property thereby and not in excess thereof; and the city clerk shall certify the amount of such assessment to the county auditor and it shall be collected the same as other taxes. But unless the owners of a majority of the linear feet of the property fronting on the improvements referred to in this section petition the council therefor, the same shall not be made unless two thirds of all the members of the council shall by vote order the making thereof.

Recommendations

It is recommended that an ordinance amending section 17.80.030 of the Fort Dodge Municipal Code should be submitted to City Council, standardizing sidewalk width to 5 feet in all areas not adjoining parking stalls. It should be made clear that this section of code does not apply to other types of bicycle or pedestrian facilities such as trails and sidepaths. Additionally, a Sidewalk Prioritization Program should be developed, or the language should be amended to reflect the current policy and procedures regarding sidewalk improvement. Sidepath maintenance and repairs should be included to differentiate responsibilities between the adjoining property owner and the City of Fort Dodge due to the engineering design required for sidepath construction and repairs.



Neighborhood sidewalk gap: Fort Dodge, Iowa



Sidewalks serve multiple purposes in the community: Fort Dodge, Iowa

OTHER POWER-DRIVEN MOBILITY DEVICES

The United States Department of Justice published regulations regarding disability access on trails in 2010. Some people with disabilities use less traditional types of technology and devices for mobility, including scooters, golf carts, and even Segways®. These have been designated “Other Power Driven Mobility Devices.” People with disabilities have the right to choose whatever mobility device best suits their needs. The local entity can ask for credible assurance that the device is used as the result of a disability, though questions as to the specific medical reasons are considered a HIPAA violation. A state-issued disability parking placard or similar official proof of disability must be accepted at face value.

Under this rule, local governments can perform an assessment of facilities to determine whether certain types of OPDMDs can be safely accommodated, considering the type, size, weight, dimensions, and speed of the device, the volume of pedestrian traffic, and whether there are legitimate concerns with regard to environmental, natural, or cultural resources.



Mobility scooter on High Trestle Trail



Segway tour- Burlington, Iowa
Photo credit: Burlington Segways, www.Burlingtonsegways.com

Recommendations

It would be beneficial for Webster County and the City of Fort Dodge to complete regular assessments on bicycle and pedestrian facilities and the trail system to ensure safety for all users. The assessments can be done as a part of the annual CIP update cycle, which could help determine necessary changes to OPDMD regulations (whether relaxing or strengthening them) and to aid in budgeting for maintenance issues that would reduce OPDMD access without proper repairs or alterations. An assessment should also be performed on all new trails before they are opened to public use, in order to prevent potential issues.

While each trail may have unique criteria for OPDMDs, one permit should cover all of the trails upon which that type of device is allowed. Additionally, requiring an annual registration creates a hardship for disabled persons. Permanent window placards issued by the Iowa DOT for the transportation of disabled persons must be renewed every 5 years (if issued after January 1, 2017). Temporary disability permits expire after 6 months. It would be reasonable to issue OPDMD permits that expire within similar timeframes, with exceptions for circumstances relating to a change in OPDMD type or changes to trail accessibility.

Staff should speak with the City and/or County Attorney for complete legal guidance regarding these policies and ADA requirements, or consult with an attorney who specializes in disability law.

WEBSTER COUNTY TRAIL ENTRANCE PERMITS

Webster County requires an entrance permit for all new entrances that cross rural trails. The permit is conditioned upon a number of factors, including:

- The construction or maintenance shall be carried on in such a way as to not interfere with traffic.
- The owner shall take all reasonable precautions to protect and safeguard the property of any person or persons.
- Requirements for the size and elevation of any necessary culvert pipes.
- Requirements for proposed entrances to meet minimum stopping sight distance for safety purposes.
- Applicants whose driveway crosses a trail are required, at their own expense, to remove the existing concrete trail segment and install a new reinforced concrete trail and aprons on both sides of the trail.

Such applications must be signed off on by the County Engineer and the Director of the County Conservation Board.



Bike/Ped crossing MUTCD W11-15 sign



Aerial photo of a driveway crossing a trail- Nelson Avenue, Fort Dodge, Iowa

Recommendations

In addition to the items currently listed, there are other factors to consider when allowing a new crossing over an existing trail. Some responsibilities of the adjacent landowner may include:

- Keeping the trail portion of the entrance cleared of gravel and any other debris caused by vehicular traffic crossing over the trail. This requirement should continue during and after construction for the safety of trail users.
- If the remainder of the trail subject to the permit is one which has snow plowed, then the owner of the crossing shall be responsible for ensuring that the trail within the crossing area is also free from snow and that plowing activities on the entrance/driveway do not cause snow to deposit on the trail in any way.
- Depending upon the expected traffic volumes of the entrance and the nature of the land use, to install trail crossing signs (MUTCD W11-15) on each side of the trail to remind motorists that trail users are in the area.

The first two requirements requiring that construction or maintenance not interfere with traffic, and for the owner to protect and safeguard property are vague as written. “Traffic” could be taken to mean traffic on the road or trail. It would be reasonable to assume that the permit is referring to both types, but a clarification could be useful to the permit holder and staff in charge of enforcement. Similarly, it is not clear what is meant by the protection and safeguarding “the property of any person or persons.” This language could also be revisited to be more explicit about what is meant by “property” and clear up any potential confusion.

7

IMPLEMENTATION PLAN

City and County Staff

Trails Advisory Board

Plan Goals and Actions

Funding Opportunities

- City and County Funding
- Donations
- Private Funding Opportunities
- Public Funding Opportunities

Maintenance Guidelines

There are several elements to consider when implementing the overall master plan. This includes staffing capacity, volunteer advisory groups, review of each of the plan goals and actions, funding availability, donation and grant opportunities, and future maintenance needs.

CITY AND COUNTY STAFF

The City of Fort Dodge and Webster County Conservation has shared a Natural Resources/Trail Technician through an intergovernmental agreement (28E) since July 1, 2012. The City and County have continued expanding the responsibilities of this shared employee through amendments of the original 28E focusing on the growing needs of trail maintenance. The implementation and monitoring of the Hike & Bike WC Master Plan should be one of the new responsibilities of this employee. This person will organize and coordinate activities across departments and jurisdictions to ensure that network maintenance and construction projects are scheduled to minimize closures and ensure that network expansion occurs in an orderly fashion.

TRAILS ADVISORY BOARD

The Trails Advisory Board (TAB) can also help implement the Hike & Bike WC Master Plan. The role of the TAB should be expanded from project prioritization and fundraising, to include marketing, education, event planning, and developing grant applications. The TAB should work as an extension of the Greater Fort Dodge Growth Alliance.

The current board is made up of City and County staff, MIDAS Council of Governments staff, Community Foundation staff, Greater Fort Dodge Growth Alliance staff, trail enthusiasts, and members of Dodger Cyclists. However, membership of the board should be expanded to include local business owners, health professionals, disability advocates, naturalists and conservationists, convention and tourism professionals, water trails users and community developers. These members should come from a range of demographic backgrounds in order to incorporate a well-rounded set of viewpoints from throughout the community. The name of the committee may be reconsidered in light of its expanded focus and responsibilities.



PLAN GOALS AND ACTIONS

Each of the plan goals is supported by a list of actions described in more detail in the chapters of this plan. For implementation purposes, responsible parties and a timeframe has been identified for each action.

City of Fort Dodge Department Abbreviations

PRF = Parks, Recreation and Forestry
 BACG = Businesses Affairs and Community Growth
 ENG = Engineering
 PD = Police Department

Webster County Abbreviations

WCCB = Webster County Conservation Board
 WCE = Webster County Engineer
 WCHD = Webster County Health Department

Community Group Abbreviations:

TAB = Trails Advisory Board
 GFDGA = Greater Fort Dodge Growth Alliance
 DC = Dodger Cyclists
 FDCF = Fort Dodge Community Foundation
 FDCSD = Fort Dodge Community School District
 CVB = Conventions & Visitors Bureau
 FDMB = Fort Dodge Mountain Bike Volunteers

Goal 1: Provide a complete bicycle and pedestrian system with connections to various destinations

System Objectives:

- Ensure that the correct facility type is used on each street that is part of the on-street bicycling network
- Prioritize improvements to make important connections, to take advantage of funding or timing associated with related projects, and to improve safety
- Ensure that policies, ordinances, and standards support biking and walking.

ACTION	CHAPTER	RESPONSIBLE PARTIES	PARTNERS	TIMEFRAME
Follow most current design guidelines and best practices	3	PRF, ENG, WCCB, WCE	—	Immediate, ongoing
Follow phasing plan and update priorities annually	3	PRF, ENG, WCCB, WCE	TAB	Immediate, ongoing
Update complete streets policy	6	ENG, WCE	—	0-3 years
Update the bike parking ordinance	6	BACG	—	Immediate
Install bike parking in public parks and public buildings	6	PRF, BACG	TAB	0-3 years
Install bike parking in business districts	6	BACG	TAB	0-3 years
Update the sidewalk ordinance	6	ENG, BACG	—	0-3 years
Create specific budget item for trail and facility construction and maintenance	7	PRF, ENG, WCCB, WCE	—	Immediate, ongoing
Incorporate prioritization plan into annual CIP	7	PRF, ENG, WCCB, WCE	—	Annually
Apply for both public and private funds	7	PRF, BACG, ENG, WCCB	TAB	Annually

Goal 2: Increase biking and walking trips for health, recreation, and transportation

Trip Objectives:

- Encourage biking and walking through fun events, celebrations, and incentives

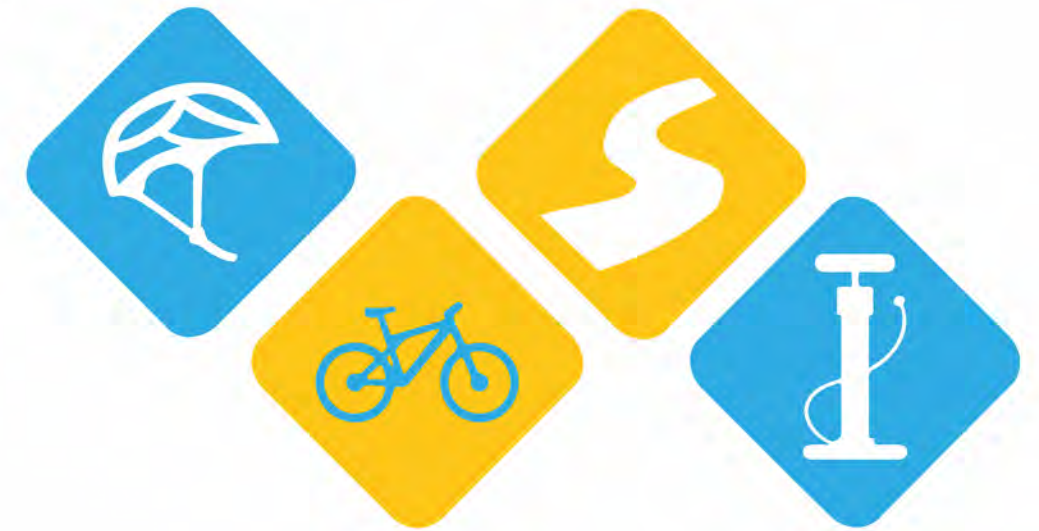
ACTION	CHAPTER	RESPONSIBLE PARTIES	PARTNERS	TIMEFRAME
Participate in National Bike Month in May	4	GFDGA, TAB	PRF, WCCB, DC	Annually
Support or host special biking and walking events (e.g. Mayor's Ride, Unique Rides/Runs, Open Streets, etc.)	4	GFDGA, CVB	DC, TAB	Ongoing
Develop incentive and encouragement programs for children (e.g. give-aways, bike rodeos, bike camps, etc.)	4	FDCSD, WCHD, PD	TAB, DC	0-3 years, ongoing
Develop incentive and encouragement programs for employers, businesses, and customers (e.g. Bicycle Friendly Businesses)	4	GFDGA, WCHD	TAB, DC, BACG	0-3 years, ongoing
Apply to become a Bike Friendly Community	4	GFDGA, TAB	PRF, BACG, DC	0-3 years, ongoing
Evaluate the various measures of the plan	5	PRF, WCCB, TAB	GFDGA, PD, DC, WCHD, FDCSD	Annually



Goal 3: Ensure safety for all when biking and walking

Safety Objectives:

- Increase individuals’ knowledge of trail etiquette, bicycle maintenance, and bicycle safety
- Maintain trail and bicycle routes in good condition
- Ensure equitable laws and equitable enforcement



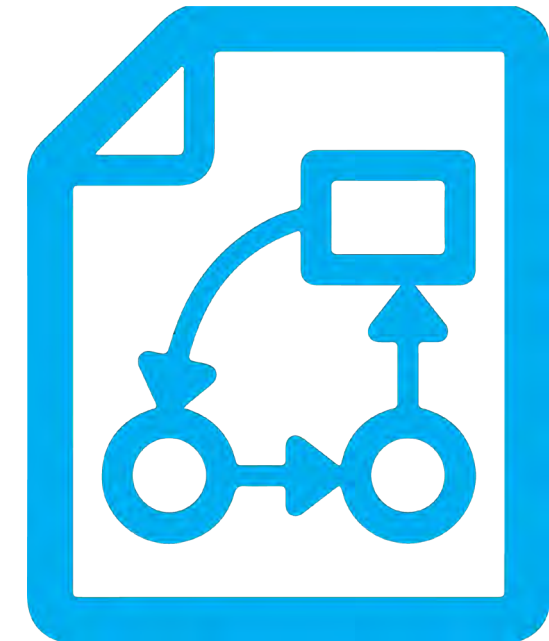
ACTION	CHAPTER	RESPONSIBLE PARTIES	PARTNERS	TIMEFRAME
Post trail rules and etiquette in clear view at trailheads	4	PRF, WCCB	—	Ongoing
Provide Bicycle Safety programming and materials for children and adults	4	PD, FDCSD, WCHD	PRF, WCCB	0-3 years, ongoing
Develop/promote bike maintenance and repair workshops	4	GFDGA	PRF, WCCB, DC	0-3 years, ongoing
Promote the use of “SeeClickFix” for trail maintenance issues	4	PRF	—	Immediate, ongoing
Enforce biking and motor traffic laws equitably	5	PD, WCCB	—	Immediate, ongoing
Train police officers in bicycle patrol	5	PD	—	0-3 years, ongoing
Increase police presence on the trail system	5	PD, WCCB	PRF	0-3 years, ongoing
Advertise and follow preferred snow removal route procedures	6	PRF, WCCB	—	Immediate, ongoing
Develop, implement, and educate users and public safety employees on an Emergency Plan	6	PRF, WCCB	WCHD, PD	0-3 years, ongoing
Update the bicycle ordinance	6	ENG, BACG	—	Immediate
Update the Trail Entrance Permit	6	WCCB	WCE	0-3 years
Update OPDMD assessment, rules, and permits	6	PRF, WCCB	—	0-3 years
Follow the trail and bicycle facility maintenance guidelines	7	PRF, WCCB	ENG, WCE	Immediate, ongoing



Goal 4: Develop a marketing plan to promote the Prairie Rivers Trail System

Marketing Objectives:

- Increase local and regional knowledge and awareness of the Prairie Rivers Trail System facilities and brand
- Develop partnerships and utilize available resources to promote trail use
- Make information easily accessible
- Increase public support for trail and bicycle facility development, education programs and use throughout the county.



ACTION	CHAPTER	RESPONSIBLE PARTIES	PARTNERS	TIMEFRAME
Utilize Prairie Rivers Trail branding for all pedestrian, bicycle, and trail marketing and events	4	PRF, WCCB, CVB	GFDGA	Immediate, ongoing
Update trail and on-street network maps (including interactive maps) on the City and County's websites	4	PRF, WCCB, BACG	DC	Immediate, ongoing
Ensure that Google Maps "Bicycling" coverage is up-to-date	4	BACG	DC, PRF, WCCB, CVB	Immediate, ongoing
Update static maps posted in the trail network within a year of changed conditions	4	BACG, ENG	—	Ongoing
Provide updated GIS trail information to the Iowa Natural Heritage Foundation for use in the Iowa by Trail mobile app	4	ENG, BACG	—	0-3 years, ongoing
Develop a community-wide trails, biking, and walking benefits campaign	4	GFDGA, WCHD, CVB	TAB, DC, PRF, WCCB	0-3 years
Follow the marketing calendar	4	PRF, WCCB, CVB	GFDGA, TAB	Immediate, ongoing
Create a regional/statewide marketing campaign	4	GFDGA, CVB	PRF, WCCB	0-3 years, ongoing
Annually review organizations and agencies to which updated miles and maps are provided	4	PRF, WCCB	CVB	Immediate, ongoing



FUNDING OPPORTUNITIES

CITY AND COUNTY FUNDING

The first step is for Fort Dodge and Webster County to determine how much one-time funding and/or annual budget expenditures they are willing and able to commit to the project. When applying for grants, a significant investment that is greater than the minimum match required indicates to application review committees that Fort Dodge and Webster County place a high priority on completing the project. This commitment should be officially documented in some way, such as through the Capital Improvement Program or a resolution from the City Council and/or County Board of Supervisors.

Currently, maintenance expenditures are housed in the Fort Dodge Parks, Recreation, and Forestry budget, and improvements are paid for through the Engineering department budget. To better keep track of expenditures and assess the true cost of construction and maintenance related to the bicycle and pedestrian network, the City and County should request a separate departmental account or line items in the annual budget.



A dedicated account for trails would be preferable to line items, as it portrays revenues and expenditures more clearly. Grant funding, intragovernmental transfers, dedicated Local Option Sales Tax or property tax levy funds, and fundraising are all clearly identified, and expenditures are not covered in part by another part of a departmental budget. Additionally, such a fund account would accurately track how much each department is contributing from their budget on an annual basis, to see if the distribution is equitable. It would also clarify when bicycle and pedestrian facilities for projects such as complete streets are paid for through the trails budget as opposed to being absorbed within other Engineering/Public Works or Parks, Recreation, and Forestry expenditures. In addition to simplifying the true cost of the trails and other facilities, a dedicated budget would make grant administration easier by making it less complicated to follow where the grant funds are going and how they are being matched.

A restricted trails account could be created as part of the City or County budget, with the other jurisdiction initiating an annual intergovernmental transfer of funds that has been budgeted by resolution of the elected body. Such a system, if implemented, should be entered into through a 28E, and voted upon by the City Council and the County Board of Supervisors.

DONATIONS

The Fort Dodge Community Foundation has served as the holder of private donations funds and is expected to continue in that role. The Trails Advisory Board should continue to assist in seeking private support for projects. Additionally, a trails-targeted “Friends” group could be developed for the Prairie River Trails System overall, or for targeted trails, as necessary. “Friends” groups often assist City and County staff in mutually defined goals of fundraising efforts, and sometimes programmatic efforts. In any case, a “fundraising committee” may be formed, representing a variety of interested parties, to lead fundraising efforts.

Donations from private sources typically help to leverage state and federal grant dollars. Even small contributions from local private sources help make applications for grant programs more compelling, as they indicate strong local support for the project. Also, potential donors/grantors prefer to see evidence that there will be enough funding in place for a project to be completed.

When deciding who to contact for private support, the fundraising committee should first identify which individuals, companies, and/or nonprofits, and organizations would benefit the most from the proposed project. The committee could begin implementing this step by approaching adjacent property owners to seek a letter (or letters) of support for the project.

The committee could then move on to companies located nearby that maybe be able to contribute financially or in-kind. For example, companies like Nestle may be able to provide donations to develop a trail and on-street bicycling system that connects the residential neighborhoods to each of their respective campuses. Incentive programs could be used to encourage their workforces to utilize the trails and on-street network as an alternative means of transportation to work.

The committee should also develop a structure for recognizing various levels of support on the project. For example, a trail, route, or amenity could be named for a major donor. Other donors could be recognized through temporary or permanent signage, a list on the City’s or County’s website, an announcement via social media, or at a public ribbon cutting. The possibilities for recognition are as unlimited as the committee members’ imaginations.

The committee should also request support from groups and individuals, even if those individuals do not have funding or resources that they can contribute to the project. For example, daycares, places of worship, bicycling/running clubs, and the school district may all see a benefit to the project but not have resources to contribute. In this case, the committee should request a letter of support that indicates how that group will benefit. These letters may be included in grant applications.

PRIVATE FUNDING OPPORTUNITIES

Prairie Meadows Community Betterment Grant

- This statewide program awards grants between \$100 and \$99,999. A variable amount of funds, which may be near \$2 million, is available to be awarded in four categories: Arts & Culture, Economic Development, Education, and Health and Human Services. Trails are eligible under the Economic Development category. Prairie Meadows also offers a Legacy Grant for requests of \$100,000 or more, which must have at least 50 percent of the project budget secured. The applicant cannot apply for both the Community Betterment Grant and the Legacy Grant for the same project. The Community Betterment Grant requires that the project be completed within a year.

PeopleForBikes Community Grant Program

- This national program awards up to \$10,000 to worthy projects and programs that support bicycling. The grant cannot fund more than 50 percent of the project budget. The program is competitive, with only 10 to 15 percent of proposals being funded. There are two grant cycles each year, with applications opening in June for the fall submittal, and in December for the spring submittal. The process requires a letter of interest prior to submitting a full application.

Wellmark MATCH Grant

- Matching Assets to Community Health (MATCH), is a grant awarded by the Wellmark Foundation to promote policies and projects that help communities in Iowa and South Dakota create safe, healthy, and active environments. Two challenge grant opportunities are available—the Large MATCH and Small MATCH. The Large MATCH program awards up to \$100,000 that must have a \$1 to \$1 local contribution. The Small MATCH program awards up to \$25,000, requiring a 50% local contribution. For example, a \$50,000 large grant must have a local match of \$50,000; a \$10,000 small grant must have a \$5,000 local match. Applications are due in March each year.

PUBLIC FUNDING OPPORTUNITIES

Community Attraction and Tourism (CAT) – Iowa Economic Development Authority

- The CAT program is designed to assist communities in the development and creation of multiple purpose attraction or tourism facilities. The program received a \$5 million appropriate for FY 2018. CAT funding is limited to 50% of total project costs and must be the “last dollar” to complete the project. Applications are reviewed by the Vision Iowa Board. Local support, both philosophical and financial, is necessary for a CAT application to be successful.

Iowa Great Places– Iowa Department of Cultural Affairs

- The Iowa Department of Cultural Affairs provides up to \$400,000 per award to communities and nonprofit organizations. Communities must demonstrate a strong vision for innovation, and strive to enhance community vitality and quality of life while maintaining its unique character. Awardees are designated as an Iowa Great Place. The average award is \$185,000. Letters of intent are usually due by May 1, with a grant application deadline in early June.

Resource Enhancement and Protection Grant (REAP) – Iowa Department of Natural Resources

- REAP funds are appropriated by the Iowa Legislature and divided amongst various categories, with 15% going to City Parks and Open Space. Cities with a population between 10,001 and 25,000 are eligible for up to \$125,000. Applications are due on August 15th each year.
- County Conservation funds are drawn from 20% of the total REAP appropriation. Of this, 30% of the funds are distributed equally and automatically to all 99 counties, while another 30% is distributed to counties based upon population. The remaining 40% is allocated through competitive grants.

Regional Transportation Alternatives Program (TAP) – Mid-Iowa Development Association (MIDAS) Council of Governments

- In the past, MIDAS has administered the regional TAP funds, and distributed the funds to worthy projects. The program has anywhere from \$420,000 to \$656,000 available depending on the funding year. This program was recently on hold by FHWA and the Iowa DOT, but will be reopened for FFY 2020. Applications will be made available by MIDAS.

Statewide Transportation Alternatives Program (TAP) – Iowa DOT

- TAP is a portion of the Federal Surface Transportation Program (STP) funding received by the State of Iowa. Applicants compete on a statewide level for a portion of the TAP fund, which may be used for a wide array of projects, including trails and other bicycle and pedestrian facilities. This program has been put on hold by the Federal Highway Administration and the Iowa DOT while the process is redesigned. Fort Dodge and Webster County would benefit from maintaining contact with Iowa DOT on this issue to know when the new process begins, and to understand any changes that have been made.

Traffic Safety Improvement Program (TSIP) – Iowa DOT

- TSIP funds can be used for projects that address traffic safety and operations on a site with an accident history, install or replace traffic signals or signs, or that include traffic safety studies or public information initiatives. The funds cannot be used for sidewalks or bicycle facilities, except as an integral part of a traffic safety project. A four-to-three lane conversion that provides room for bicycle lanes to be added is an example of a project that could be funded through TSIP. The annual funding level is on-half percent of the Iowa Road Use Tax Fund (approximately \$5 to \$6 million per year). The maximum award for a site-specific project or for research studies and public information initiatives cannot exceed \$500,000 annually. There is no match requirement. Engineering design services are ineligible. Applications are due on August 15th each year.

State Recreational Trails – Iowa DOT

- The amount of State Recreational Trails funding varies from year to year, but it is often between \$1 million and \$3 million. The maximum award is 75 percent of the project cost. Applications are due on July 1 of each year.

Federal Recreational Trails – Iowa DOT

- The Federal Recreational Trails program typically provides about \$1 million annually for projects in Iowa, with a maximum award of 80 percent of the project cost. Applications are due on October 1 each year.

Grant Funding Opportunities for Prairie Rivers Trails

DUE DATE	PROGRAM	MAX AWARD	APPROXIMATE FUNDING IN PROGRAM (MAY VARY)	MATCH REQUIRED	DATE FUNDS AVAILABLE	COMPLETION DATE	WEBSITE
January 15, 2018 (quarterly through year)	Community Attraction and Tourism (CAT)	10-20% of the final negotiated project cost, not to exceed \$1 Million	\$5M	At least 50%, grant is last dollar in	Upon award	As per the grant agreement	https://www.iowaeconomicdevelopment.com/Enhance
January 2018	Prairie Meadows Community Betterment Grant	\$99,999	\$2M	none	March 2018	Within 12 months	https://www.prairiemeadows.com/community/betterment-grants
April 2018 (and October 2018)	PeopleforBikes Community Grant	\$10,000	\$50,000 per cycle	50%	December 2017	Provide updates every 6 months	http://peopleforbikes.org/our-work/community-grants/
May 2018	Wellmark MATCH Grant	\$75,000	N/A	100%	December 2018	2 years	https://www.wellmark.com/foundation/traditional-grants.html
May 1	Iowa Great Places	\$400,000 (\$185,000 average)	N/A	100%	October	As per the grant agreement	https://iowaculture.gov/about-us/about/grants/iowa-great-places
July 1, 2018	State Recreational Trails	None specified (highest award was \$780,000)	\$1M	25%	Upon authorization	As per the grant agreement	http://www.iowadot.gov/systemsplanning/fedstaterectrails.htm
August 15, 2018	Resource Enhancement and Protection (REAP) City Parks & Open Spaces	\$150,000 (for cities with populations between 25,000 and 50,000)	\$900,000 (for populations over 25,000)	none	October 2018	As per the grant agreement (~ 2 years)	http://www.iowadnr.gov/Conservation/REAP/REAP-Funding-at-Work/City-Parks-Open-Spaces
August 15, 2018	Resource Enhancement and Protection (REAP) County Conservation	None specified	40% of statewide county conservation account	none	October 2018	As per the grant agreement	http://www.iowadnr.gov/Conservation/REAP/REAP-Funding-at-Work/County-Conservation
August 15, 2018	Traffic Safety Improvement Program	\$500,000	\$5M	none specified	December 2018	As per the grant agreement	https://iowadot.gov/traffic/traffic-and-safety-programs/tsip/tsip-program
October 1, 2018	Iowa Clean Air Attainment Program (ICAAP)	\$20,000 minimum project cost	\$4M	20%	November 2019	As per the grant agreement	http://iowadot.gov/systemsplanning/grant-programs/iowa-clean-air-attainment-program-icaap
October 1, 2018	Federal Recreational Trails	\$5,000 min.- no upper limit (highest award was \$490,000)	\$1.3M	20%	Upon authorization	As per the grant agreement	http://www.iowadot.gov/systemsplanning/fedstaterectrails.htm
December 1, 2018	Statewide STP TAP	None specified	\$1M	20%	Upon authorization	As per the grant agreement	https://iowadot.gov/systemsplanning/grant-programs/transportation-alternatives
December 1, 2018	MIDAS TAP	\$100,000 min	\$420,000 to \$656,000	20%	FFY 2021	As per the grant agreement	http://www.midascog.net/applications

MAINTENANCE GUIDELINES

Trails, on-street bicycle facilities, and sidewalks require regular maintenance. People walking and biking are more susceptible than motor vehicles to pavement irregularities such as cracks, potholes, broken glass, or gravel. Fort Dodge and Webster County should establish an annual budget for regular maintenance and minor repairs of trails and bicycle facilities, such as those activities listed in the table below.

The City and County should review their existing maintenance plan for their trail and on-street bicycle facility system to identify areas for improvements. If a crash or injury should occur, the responsible jurisdiction's liability may be lessened by having a maintenance plan, accompanied by consistent documentation of compliance with that plan. However, if the City and County create a maintenance plan, but fail to follow it, liability issues may be increased.



Bicycle and Pedestrian Facility Maintenance	
TRAIL INSPECTIONS	
<p>The Prairie Rivers Trail System should be inspected on a regular basis. The city/county-shared trail staff should conduct an annual inspection of the overall trail system, including surfacing, amenities, bridges, and signage. An annual report should be prepared and work schedule developed to address trail-related repairs and improvements.</p>	<p>Action items:</p> <ul style="list-style-type: none"> • City & County trail staff should complete an annual trail system inspection in the spring of each year. • An annual report should be prepared from the inspection to address trail repairs. • A priority scale should be assigned to trail projects to address safety concerns first and enhancements throughout the season. • Projects should be assigned to specific staff to ensure completion and documentation. • Weekly inspections should be completed by trail staff during regular maintenance activities. • Annually, trail surface cracking should be rated and appropriately scheduled for repair or replacement.
PLOWING / SWEEPING / BLOWING	
<p>Bicyclists often avoid shoulders, bike lanes and bridges filled with sand, gravel, broken glass and other debris; they will ride in the roadway to avoid these hazards, potentially causing conflicts with motorists. On bridges, debris is often swept to the curb edge or the jersey barrier wall, requiring cyclists to take a lane or share a narrow facility with cars. Sidepath trails in the county may be susceptible to gravel thrown by snowplow blades.</p>	<p>Action items:</p> <ul style="list-style-type: none"> • Establish a seasonal sweeping schedule that prioritizes roadways with major bicycle routes and bridges. • Sweep walkways and bikeways whenever there is an accumulation of debris on the facility. • In curbed sections and bridges, sweepers should pick up debris; on open shoulders, debris can be swept onto gravel shoulders. • Debris from the roadway should not be swept onto sidewalks. • Pave gravel driveway approaches to minimize loose gravel on paved roadway shoulders. • Provide extra sweeping in the fall in areas where leaves accumulate in bike and pedestrian facilities. • Sweep trails every spring to remove debris accumulated in snow drifts. • Monitor trails maintained during the winter for debris that may be thrown from snowplow blades.

PAVEMENT MARKINGS	
<p>Pavement markings help guide bicyclists to proper positioning in the roadway, direct pedestrians to safer crossing locations, and provide awareness of the potential for bicyclists and pedestrians to be in the area. Wet pavement markings can become slippery. Pavement markings can wear off quickly due to weather and vehicular travel.</p>	<p>Action items:</p> <ul style="list-style-type: none"> • Repaint pavement markings at least annually, preferably in spring. • Consider twice a year applications for areas that have higher vehicular or bicycle/pedestrian volumes. • Painted pavement markings should include a silica broadcast for traction. • Consider longer-term durable pavement markings for less frequent maintenance.
ROADWAY, SIDEWALK, OR TRAIL SURFACE	
<p>Bicycles are much more sensitive to subtle changes in roadway surface than motor vehicles. Ridges, cracks, and uneven transitions between materials can cause hazardous conditions.</p>	<p>Action items:</p> <ul style="list-style-type: none"> • Crack sealing program • Ensure that on new roadway construction, the finished surface on bikeways does not vary more than 1/4". • Maintain a smooth surface on all bikeways that is free of potholes. • Maintain pavement so ridge buildup does not occur at the gutter-to-pavement transition, adjacent to railway crossings, or at manholes. • Replace broken sidewalk panels.

GUTTER-TO-PAVEMENT TRANSITION

On streets with concrete curbs and gutters, 1' to 2' of the curbside area is typically devoted to the gutter pan, where water collects and drains into catch basins. On many streets, the bikeway is situated near the transition between the gutter pan and the pavement edge. It is at the location that water can erode the transition, creating potholes and a rough surface for travel. The pavement on many streets is not flush with the gutter, creating a vertical transition between these segments. This area can buckle over time, creating hazardous environment for bicyclists. Since it is the most likely place for bicyclists to ride, this issue is significant for bike travel.

Action items:

- Continue to require all new drainage grates be bicycle-friendly, including grates that have horizontal slats or a grid pattern on them so that bicycle tires do not fall through.
- Inventory all existing drainage grates and replace hazardous grates as necessary.
- Inspect grates and culverts every fall and after storms to remove accumulation of debris that may block storm water flow.

DRAINAGE GRATES AND CULVERTS

Drainage grates are typically located in the gutter area near the curb of a roadway. Many grates are designed with linear parallel bars spread wide enough that if a bicycle were to ride on them, the front tire would become caught and fall through the slot.

Also, drainage grates and culverts that become clogged can cause hazardous flooding along the bikeways.

Action items:

- Continue to require all new drainage grates be bicycle-friendly, including grates that have horizontal slats or a grid pattern on them so that bicycle tires do not fall through.
- Inventory all existing drainage grates and replace hazardous grates as necessary.
- Inspect grates and culverts every fall and after storms to remove accumulation of debris that may block storm water flow.

DRAINAGE

Mud or algae from frequent ponding can be extremely slippery and hazardous to both bicycle and pedestrian traffic.

Action items:

- Grade adjacent shoulders and sod buildup for positive drainage.
- Add subdrains to encourage better subsurface drainage.
- Add rain gardens to handle storm water by infiltration when possible.

PAVEMENT OVERLAYS

Pavement overlays are opportunities to improve conditions for cyclists by widening the paved area onto the shoulder or re-striping to include bike lanes. When repaving, a ridge should not be left in the area where cyclists ride (this occurs where an overlay extends part-way into a shoulder bikeway or bike lane).

Action items:

- Extend the overlay over the entire roadway surface to avoid leaving an abrupt edge.
- If there is adequate shoulder or bike lane width, it may be appropriate to stop at the shoulder or bike lane stripe, provided no abrupt ridge remains.
- Ensure that inlet grates, manhole and valve covers are within ¼ inch of the pavement surface.
- Pave gravel driveways to the property line to prevent gravel from spilling onto shoulders or bike lanes.

SIGNAGE

Bike lanes, quiet streets and shared use paths all incorporate signage for way-finding and regulations. Such signage is vulnerable to vandalism and wear, requiring regular maintenance and replacement. Most signage standards are covered in the Manual on Uniform Traffic Control Devices (MUTCD).

Custom signage is recommended in the 2012 Webster County Conservation & City of Fort Dodge Wayfinding Design Guidelines.

Action items:

- Check regulatory and way-finding signage placed along bikeways for signs of vandalism, graffiti, or normal wear.
- Replace signage along the trail and bikeway network on an as-needed-basis.
- Update maps as necessary
- Remain updated on changes to MUTCD standards and update signage accordingly.

LANDSCAPING

Trails, bikeways and sidewalks can be rendered inaccessible or dangerous due to overgrown vegetation that can become an obstacle or block an otherwise clear line of sight.

Action items:

- Trim landscaping such that it does not impede passage or clear view, particularly at intersections and along curves.
- Keep a 2-foot minimum clear zone horizontal on each side of the trail and a 10-foot clear zone vertical.
- After major damage incidents such as storms or nearby construction, remove fallen trees or other debris from trails, bikeways, and sidewalks as quickly as possible.

BIKEWAY AND SIDEWALK CLOSURES AND DETOURS

Because of the ease of mobility when biking and walking, many people will attempt to go through or around trail and sidewalk closures without the proper protections, which may be hazardous for the person and cause damage to the construction activity. Bikeway and sidewalk users need accommodation during construction and maintenance activities when segments may be closed. Users must be warned of impending closures and given adequate detour information to bypass the closed section. Wherever bicycles and pedestrians are allowed, measures should be taken to provide for the continuity of their trip through a work zone area. Only in rare cases should pedestrians and bicyclists be detoured to another street when travel vehicle lanes remain open.

Action items:

- Bicyclists and pedestrians should not be led into conflicts with work site vehicles, equipment, moving vehicles, open trenches or temporary construction signage.
- Efforts should be made to re-create the trail, bike facility, or sidewalk outside the construction zone if possible.
- Where there is insufficient space to provide a temporary bike facility adjacent to the construction zone, then a standard-width travel lane should be considered.
- Contractors should be made aware of the needs of bicyclists and pedestrians and be properly trained in how to safely route them through or around work zones.
- Users should be warned through the use of standard signage approaching each affected section (e.g., "Bike Lane Closed," "Sidewalk Closed"), including information on alternate routes and dates of closure.
- Alternate routes should provide a reasonable level of directness and equivalent traffic characteristics and be signed consistently.