

COMPLETE STREETS

BICYCLE TRAIL  
AND ROUTES



BIKE TO WORK



BICYCLE  
HELMETS



BICYCLES ARE VEHICLES

# Bicycle Plan

2007 Sioux Falls, South Dakota



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# City of Sioux Falls Bicycle Plan 2007

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# I. Introduction

Bicycling is an important mode of transportation in the Sioux Falls area that is available to people of all ages and socioeconomic levels. Bicycling is a particularly efficient and convenient form of transportation in urban areas. Like the automobile, bicycling provides a high degree of independence, flexibility, and freedom of choice relative to schedule and destination. Recreational bicycling also continues to be very popular. Bicycling is a particularly efficient and convenient form of transportation in urban areas. Door-to-door travel times for short trips of up to five miles are comparable to driving. Although bicycling levels are much higher during warmer weather months, the development of hybrid and mountain bicycles and the availability of lightweight, waterproof clothing have increased wet and cold weather bicycling.

## ***Bicycle Plan Purpose***

This plan serves to update and supersede the 2001 Bicycle Transportation Plan for Sioux Falls. The plan follows the recommended comprehensive approach to bicycle transportation planning with the following purposes:

- Refine the Bicycle Plan Element of the adopted 2025 Sioux Falls MPO Long-Range Transportation, which provides the overall policy framework for development and transportation improvements within the Sioux Falls MPO area.



- Serve as a blueprint for continuing to improve bicycling conditions and safety and increase bicycling levels.
- Identify desirable bicycle routes within the city of Sioux Falls and Minnehaha and Lincoln Counties, including routes into and out of the Sioux Falls area and connections between other cities in Minnehaha and Lincoln Counties, such as Brandon, Tea, and Harrisburg.
- Serve as a framework for cooperation between state agencies, counties, and local governments in planning for and developing bicycle facilities.
- Educate citizens and policy makers on bicycle transportation and the needs of bicyclists.
- Provide guidelines for planning, designing, and maintaining bicycle facilities.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) includes a specific requirement





that bicyclists and pedestrians be given due consideration in the MPO transportation planning process and in designing and constructing transportation facilities. The Sioux Falls Bicycle Plan provides policies that will further that requirement.

## ***Title 23 U.S.C. §217: Bicycle Transportation and Pedestrian Walkways (g) Planning and Design.***

1. In General. Bicyclists and pedestrians shall be given due consideration in the comprehensive transportation plans developed by each metropolitan planning organization and state in accordance with Sections 134 and 135, respectively. Bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use are not permitted.
2. Safety considerations. Transportation plans and projects shall provide due consideration for safety and contiguous routes for bicyclists and pedestrians. Safety considerations shall include the installation, where appropriate, and maintenance of audible traffic signals and audible signs at street crossings.



## II. Current Situation

### A. Facilities

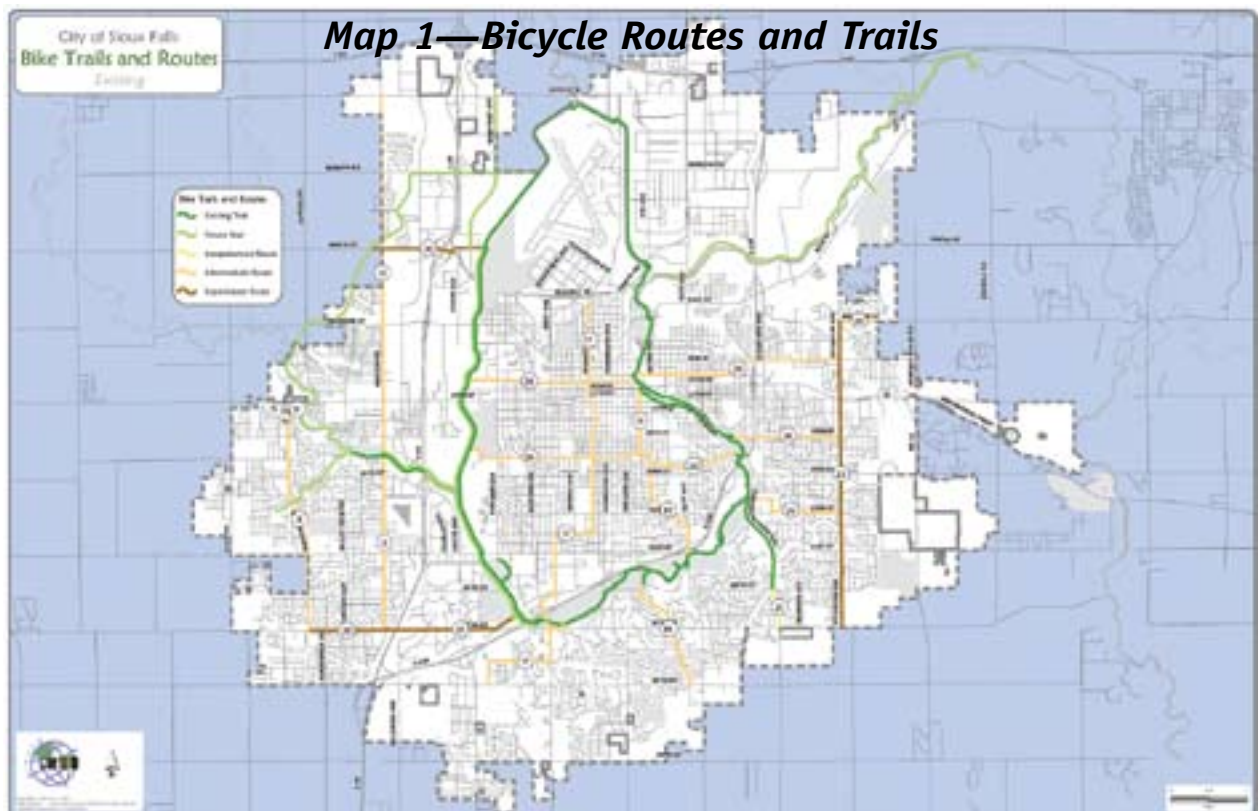
#### Trails and Supporting Facilities

Sioux Falls has a well-developed system of recreational bicycle trails which generally follows the Big Sioux River and Skunk Creek greenway, as the river loops around the city. The existing trail provides access to scenic areas along the river and provides recreational opportunities for many parts of the city. The recreational trail mixes bicycles with walkers, joggers, in-line skaters, and other recreational uses. The trail also links many of the City's parks, and therefore provides a system of supporting facilities, such as rest rooms and drinking fountains.

The bicycle trail system was developed and constructed in the 1970s as a part of the Big Sioux Recreation Greenway Program. The greenway is designed as a mitigation tool in the floodplain. Therefore, spring and other seasonal flooding along the bicycle trail system is considered normal. Users of the bicycle trails should be aware of possible trail closures during flooding periods.

#### **Key Trail and Supporting Facility Facts**

- There are currently 19 miles of existing trails.
- Existing bathrooms and parking are located along the trails at Cherry Rock, Dunham, Elmwood, Falls, Riverdale, Rotary, Sertoma, Sherman, Spencer, Tomar, and Tuthill Parks.





**Bike Trail Counts 2005**

	2001 Weekday	2001 Weekend	2003 Weekday	2003 Weekend	2005 Weekday	2005 Weekend
8th Street Bridge near Falls Landing Restaurant	563	542	352	870	382	922
Cherry Rock Park	913	1,326	NA	1,188	1,396	1,167
Pasley Park	947	1,379	652	1,005	1,119	1,219
Yankton Trail Park	640	950	436	990	978	995
By the Great Plains Zoo and Westward Ho	522	766	NA	456	400	528
By Elmwood Golf Course off Maple Street	162	153	NA	200	211	272

**2005 Counts by Type of User**

Category	Weekday		Weekend	
	Count	Percentage	Count	Percentage
Bicyclists	2,867	64%	3,618	71%
Joggers	366	8%	471	9%
Rollerbladers	214	5%	157	3%
Walkers	1,039	23%	857	17%
Total	4,486	100%	5,103	100%







- Water fountains are located close to or adjacent to the bicycle trail at Falls Park Visitor Information Center, Cherry Rock Park, Rotary Park rest room, Cliff Avenue by the river, at Spencer Park rest room, and Yankton Trail Park rest room.

**On-Street Bicycle Routes**

Sioux Falls’ citizenry has shown a desire to enhance the convenience and attractiveness of using nonmotorized modes of transportation. There are designated bike routes on numerous city streets guiding bicyclists from their neighborhoods across town to work, school, and the bicycle trails.

There are currently 11 designated bicycle routes within the city of Sioux Falls. The routes have been signed for the past ten years with mixed success. Most of the routes have been identified on low-volume streets. The routes would be better designed on collector streets, where possible, for the best connectivity and comfort combination. An update of the bike routes is recommended within this Bicycle Plan. On page 3 is a current Bicycle Routes and Trails Map (Map 1).

**B. Bicycle Usage**  
**Trail Volumes**

Every two years, City of Sioux Falls Public Works conducts a bicycle trail count along the City’s bicycle trail system. The counts are taken at various locations along the trail, with infor-

mation for mode of travel and weekday or weekend. The trail counts assist the City in programming trail improvements and maintenance. Counts were observed in the same time frame, late July and the month of August. Traffic was observed from sunrise to sunset, typically between 6 a.m. to 9 p.m.

**2005 Trail Volume Count Key Facts**

- Heaviest trail volumes during weekdays were counted at Cherry Rock Park (1,396).
- Heaviest trail volumes during weekends were counted near Pasley Park (1,219).
- Lightest trail volumes during weekday and weekends were counted by Elmwood Golf Course (211 and 272).

**2005 Long-Range Transportation Plan Market Research Study**

- 6 percent of residents frequently travel to work, school, and other destination by bicycle.

In the 1999 survey, only 3 percent of residents answered that they ride to their destinations by bicycle. This finding illustrates the increasing importance of multi-modal design considerations in the future.

- 25 percent of residents think that a bicycle should never be ridden in the street.
- 56 percent of residents think that a bicycle should sometimes be ridden in the street.





This survey finding indicates that citizens are not informed about the rights of bicyclists to ride on the streets of the city. Also, it indicates that citizens feel unsafe riding their bicycles on the street facilities, and bicycle considerations should be included where feasible.

- 42 percent of residents think that a bicycle should most of the time be ridden on the sidewalk.
- 41 percent of resident think that a bicycle should sometimes be ridden on the sidewalk.

In addition, a majority of residents do not think that bicycles should be ridden on sidewalks most of the time. Residents, in this case, might be worried about the safety for pedestrians or might also be worried about the safety of some sidewalks.

Most residents felt that bicycles should be ridden on paved recreational trails. Because the Sioux Falls bicycle trail system has very few conflicts with vehicles, the safety of the residents is very important. It might also lead to the perception that residents consider bicycles as recreational modes of transportation, while the percentage of people using bicycles to commute is actually increasing.

- 31 percent of residents think that it is very easy to travel to and from your home to the parks and recreational trails in Sioux Falls.
- 56 percent of residents think that it is somewhat easy to travel to and from your home to the parks and recreational trails in Sioux Falls.
- 23 percent of residents thought lack of bicycle trails to be a current or emerging problem (15 percent emerging problem).

Almost 9 out of 10 residents of the Sioux Falls area feel that it is at least somewhat easy to travel to and from the bicycle trails in Sioux Falls. Less than one quarter of the residents felt that there was a lack of bicycle trails in the area.

- 44 percent were very supportive of requiring developers to provide sidewalks and trails between homes and within drainageways to help provide better pedestrian and bicycle connectivity between neighborhoods (35 percent were somewhat supportive).

A fairly strong number of residents would like the City to require developers to start looking at ways to provide better bicycle connectivity between neighborhoods. This would include



expansion of the bicycle trail system into new growth areas and access to the trail system.

- 54 percent of residents were willing to have their tax dollars used to support developing new pedestrian and biking facilities (19 percent very willing, 35 percent somewhat willing).
- 59 percent of residents were willing to have their tax dollars used to support improving existing pedestrian and biking facilities (20 percent very willing, 39 percent somewhat willing).

A majority of residents would like to see continued use of their tax dollars for the expansion and maintenance of the bicycle trail system.

## C. Safety

### Statistics (from the website of the Pedestrian and Bicycling Information Center)

The development of effective measures to help prevent bicycling crashes is hindered by insufficient detail on computerized state crash files. Analysis of these data can provide information on where bicycling crashes occur (city, street, intersection, two-lane road, etc.), when they occur (time of day, day of week, etc.), and characteristics of the victims involved (age,

gender, injury severity, etc.). These data cannot provide a sufficient level of detail regarding the sequence of events leading to the crash.

In the 1970s, a methodology for typing bicycle crashes was developed by the National Highway Traffic Safety Administration to better define the sequence of events and precipitating actions leading to pedestrian-motor vehicle crashes.<sup>1</sup> In the early 1990s, this method was refined and used to determine the crash types for more than 3,000 pedestrian crashes in the states of California, Florida, Maryland, Minnesota, North Carolina, and Utah.<sup>2</sup>

A brief summary of the results showed the following:

**When the motorist and bicyclist were on initial parallel paths, either in the same direction or opposing directions, the three most frequent categories of crashes were:**



- **Motorist turning or merging into the path of a bicyclist** (12.1 percent of all crashes). Almost half (48.8 percent) of these crashes involved a motorist making a left turn

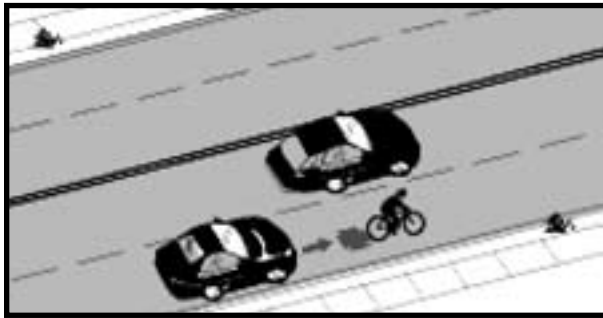
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1. A Study of Bicycle/Motor Vehicle Accidents: Identification of Problem Types and Countermeasure Approaches, Volume I (Publication No. DOT HS-803 315), K.D. Cross and G. Fisher, National Highway Traffic Safety Administration, Washington, DC, 1977.
2. Pedestrian and Bicycle Crash Types of the Early 1990's, Publication and C.L. Cox, Federal Highway Administration, Washington, DC, June, 1996. No. FHWA-RD-95-163, W.H. Hunter, J.C. Stutts, W.E. Pein.





in front of a bicyclist approaching from the opposite direction.



■ **Motorist overtaking a bicyclist** (8.6 percent of all crashes). Of these crashes, 23 percent appeared to involve a motorist who misjudged the space required to safely pass the bicyclist.



■ **Bicyclist turning or merging into the path of a motorist** (7.3 percent of all crashes). Within this category, 60 percent involved a bicyclist making a left turn in front of a motorist traveling in the same direction.

**When the motorist and bicyclist were on initial crossing paths, the three most frequent categories of crashes were:**

■ **Motorist failed to yield right-of-way at a junction** (21.7 percent of all crashes). Of these crashes, more than a third (37.3 percent) involved a motorist violating the sign or signal

and drove into the crosswalk or intersection and struck the bicyclist.

■ **Bicyclist failed to yield right-of-way at an intersection** (16.8 percent of all crashes). Within this category, 38 percent involved a bicyclist who had stopped for a sign or flashing signal and then drove into the intersection and was struck by the motor vehicle.

■ **Bicyclist failed to yield right-of-way at a mid-block location** (11.7 percent of all crashes). Almost half of these crashes (43.4 percent) involved a bicyclist riding out into the roadway from a residential driveway.

In 1999, the crash typing methodology was incorporated into a software product known as the Pedestrian and Bicycle Crash Analysis Tool (PBCAT), and is intended to assist state and local bicycle coordinators, planners, and engineers with enhancing bicycle safety. PBCAT accomplishes this goal through the development and analysis of a database containing details associated with crashes between motor vehicles and pedestrians or bicyclists, including the crash type that describes the pre-crash actions of the parties involved. With the database developed, the software can then be used to produce reports and select countermeasures to address the problems identified.

### **Bicycle Accidents**

The City of Sioux Falls tracks bicycle accidents each year through police reports. During 2006, 39 pedestrians and 36 bicyclists were involved in vehicle crashes in Sioux Falls. There were





two reported bicycle and pedestrian fatalities in 2006. Alcohol was involved in two of the reported bicycle crashes and five of the reported pedestrian crashes in 2006. Of the five pedestrian crashes involving alcohol, the pedestrian was intoxicated in all five and a driver was intoxicated in only one. It should be noted that this information consists of state-reported crashes only.

For 2006, the winter month of December had the highest amount of pedestrian crashes, with nine crashes. The bicycle crashes peaked in May and June, with eight crashes each month. Late afternoon/early evening are the times during which most of the bicycle and pedestrian crashes occurred.

### **Head Injuries and Helmet Usage**

Bicycling accidents can cause many serious head injuries. A case-control study of the effectiveness of bicycle safety helmets concluded that riders with helmets had an 85 percent reduction in the risk of head injury and an 88 percent reduction in their risk of brain injury (*New England Journal of Medicine*, May 25, 1989).

### **Laws (city and state)**

State and municipal laws affect bicyclists in their operation upon streets, highways, and trails. All too often, bicyclists are not aware of the laws affecting them, and this lack of infor-

mation results in the violation of a law.

Violating the laws is not only an offense, but can also lead to accidents involving the bicyclist and vehicles, pedestrians, or other bicyclists. All bicycle laws of the City and of the State of South Dakota are listed in the Appendix.

#### Key Bicycle Laws

- Bicycles must have a lighted lamp that can be seen from 300 feet on the front and a reflector on the back that can be seen from 200 feet for night riding.
- Every bicycle must have adequate brakes.
- Every bicycle must be registered with the City of Sioux Falls. Registration will provide information to police in case of an accident or stolen bicycle.
- All bicyclists have the rights and duties of any other driver, other than exceptions specifically noted.
- Bicyclists are prohibited from interfering with pedestrians.
- Bicyclists shall drive upon the roadway as close as practicable to the right-hand curb or edge of the roadway, except when passing or preparing to make a left turn.





## Safety Programs

Within the Sioux Falls area, several safety programs are available to train and encourage safer bicycle riding. Many of the programs are targeted towards children.

### Key Bicycle Safety Programs

- Elementary Bike Safety Program (Sioux Falls Police Department).
  - Rules of the road
  - Helmet “thump-your-melon”
  - Preparing your bicycle
  - 30-minute class (18-minute video) to every fourth- and fifth-grade class in Sioux Falls (public and private schools)
- Bike Helmet Program (Sioux Falls Police Department).
- Bicycle School (Sioux Falls Police Department).
- “Kids First” Program (Sanford Health Care).
  - The advocacy group focuses on the reduction of unintentional childhood injuries. The focus on bicycle safety includes safety fairs, a summer safety program, and reduced-price bicycle helmets.
- Bicycle Rodeo (City of Sioux Falls and Sioux Falls Safe Kids). The Sioux Falls Optimists also has a Bicycle Rodeo.

## D. Bicycle Promotion

Currently, the Sioux Falls area does not have a significant amount of bicycle promotion. The Sioux Empire Bicycle Club is the area’s bicycle advocacy group. In addition, the City of Sioux Falls has, for several years, printed a bicycle trail and route map to inform people of the locations of the bicycle facilities. In addition, in the last few years, the City’s website has added a bicycle planning page to promote bicycling as a recreational and commuting option.

### Key Bicycling Promotion Facts

- Falls Area Bicyclists, Sioux Empire Bicycle Club, and Bike Sioux Falls are all bicycle organizations in the city.
- City of Sioux Falls Bicycle Trail and Route Map.
  - Provides an easy-to-read reference of location of the City’s bicycle routes and trails. The map also includes park facility information, bicycle laws, and safety tips. Five thousand maps were distributed to almost 30 locations in the Sioux Falls area.
- City of Sioux Falls’ website (siouxfalls.org).
  - The Sioux Falls Planning Office has a bicycle planning website as a part of the department website. This site includes information on the Bicycle Plan, the bicycle trail map, and bicycle events such as Bike-to-Work Day and the Bicycle Rodeo. Also, the website has information in regard to bicycle safety.



# III. Mission Statement, Goals, and Objectives

## **Mission Statement:**

*“Preserving, enhancing, and expanding safe bicycling in and around Sioux Falls, as a mode of transportation and a recreational experience.”*

The bicycle committee developed the mission statement to serve the needs of Sioux Falls and areas surrounding the city. The statement encompasses the intent of the plan and assists in its development of bicycling-related improvements and activities. The following goals, objectives, and policies have been developed to guide future bicycle planning activities for the City of Sioux Falls.

## **Key**

- High Priority
- Medium Priority
- Low Priority

## ***Goal #1***

***Make bicycling a safer environment for both bicyclists and motorists.***

**Objective A.** Continue the current level of bicycle education programs for elementary school children.



- Policy 1 Continue the school bicycle safety programs sponsored by the Sioux Falls Police Department.
- Policy 2 Continue the summer bicycle rodeo in Sioux Falls through the use of community partners.
- Policy 3 Continue the Sioux Falls Police Department’s bicycle helmet program and cooperate with other organizations to help provide helmets for low-income children.
- Policy 4 Have a member of the bicycle committee participate on the





school physical education curriculum review process to add bicycling skills and fitness.

**Objective B.** Promote greater safety for bicyclists and motorists at all levels of ability and safer interaction with users of other transportation modes.

- Policy 1 Continue to provide safety information on the bicycle trail maps. Also, include safety information on the city website including links to other bicycle safety websites.
- Policy 2 Promote greater driver awareness of bicyclists through driver education, driver exams, and development of public service announcements (PSAs). Also, include bicycle rules and laws with motorist licensing manual.
- Policy 3 Educate the public on the importance and need to wear bicycle helmets, including a PSA on helmet safety, the City website, the bicycle rodeo, and other educational events.
- Policy 4 Recommend updates to city and state laws that facilitate safer bicycling (such as hand signals, bicycle lane ordinances, bicycle

parking zoning update, and having to yield instead of stop when riding across an intersection on a sidewalk).

- Policy 5 The City Planning Office will obtain other state and national PSAs and how-to guides on biker safety and education and include these on CityLink—Channel 16 and the other media outlets.
- Policy 6 Develop a local “Share the Road Campaign” by utilizing CityLink—Channel 16, the City website, and strategically placed road signs.
- Policy 7 Increase the number of citizens who register their bicycles. The registrations will provide information to police in case of an accident or stolen bicycle.
- Policy 8 Find a sponsor for “Effective Cycling” classes for adults
- Policy 9 Find a sponsor for “Share the Road” affinity license plates.
- Policy 10 Find an organization to work with bicycle helmet vendors to find ways to educate the public on importance of wearing helmets.

**Objective C.** Ensure there is equitable and consistent enforcement of all traffic laws affecting motorists and bicyclists.

### **Key**

- High Priority ● Medium Priority ○ Low Priority







- Policy 1 Bicyclists should be treated as vehicles in regard to city and state laws, enforcement of those laws, and in sharing the road with motorists.
- Policy 2 The City Police Department and Planning Office will sponsor workshops and informational pamphlets to help train police, judges, and city and state’s attorneys on bicycle rules and responsibilities.
- Policy 3 Increase the enforcement of traffic laws for bicyclists. Law enforcement personnel should cite cyclists for not following the law. Bicyclists should be encouraged to share the road by riding appropriately and following normal traffic procedures.
- Policy 4 Change the state law on hand signals to allow updated right turn signal.
- Policy 5 Accidents involving bicycles should be reported with at least the same degree of information as motor vehicle accidents, including location, directions of travel, speeds, extent of injury, and accident causes—at a minimum.
- Policy 6 Track minor accidents involving bicyclists or pedestrians which

may not be reported otherwise through a website reporting center. This would be a voluntary action from cyclists, but should be actively promoted by the City of Sioux Falls.

## Goal #2

**Expand and enhance bicycle transportation trails, routes, and facilities.**

**Objective A.** Develop a comprehensive bicycle network that takes into consideration the needs of all bicyclists. (See Chapter IV for designing for the rider.)

- Policy 1 Create a network of bicycle trails and routes that connects residences with work, school, play, entertainment, and shopping areas. All trails and routes should be clearly identified with appropriate signage. Either a bicycle trail or route should be spaced generally within one-mile intervals, including accessible connections to the trail.
- Policy 2 Staff shall review all new subdivisions through consistent enforcement of the subdivision ordinance and new or improved transportation facilities through the construction review process to ensure that safe bicycle transportation facilities such as





collector street connectivity, bicycle trails, sidepath connections, and safe crossings of major streets are compatible with a “complete streets” philosophy.

- Policy 3 Educate and encourage developers and builders to incorporate bicycle- and pedestrian-friendly facilities and amenities into new and existing developments.
- Policy 4 Incorporate safe and convenient bike routes and trails as a part of the 41st Street Study Projects to gain bike access to the 41st Street corridor (49th Street sidepath/bike/pedestrian bridge at confluence of Skunk Creek; path extension on west side of dike from I-29 to Sertoma Park; access points to trail).
- Policy 5 Encourage the South Dakota Department of Transportation to cost-share interstate highway bicycle trail and route crossings of interstate highways and SD 100 to improve bicycle circulation through the city.
- Policy 6 Incorporate safe and convenient bike routes and trails as recommended in the Downtown Plan

to enhance bike access to the trail system and downtown area.

- Policy 7 A Metropolitan Planning Organization (MPO) Bicycle Plan shall be developed to consider general policies to follow, create linkages, and develop a standard bicycle-friendly rumble strip policy throughout the Sioux Falls MPO area (include Brandon, Tea, Harrisburg, Hartford, and counties).

**Objective B.** Expand and enhance the trail system through the bicycle trail master plan and the City of Sioux Falls Capital Improvements Plan (CIP).

- Policy 1 Generally, a Sioux Falls residence should be located no further than one mile from a bicycle trail.
- Policy 2 Trail facilities should be designed for beginning bicycle riders.
- Policy 3 When funding for paving is not available for a new trail, consider building an initial trail with an interim crushed rock section to help develop new trail corridors.
- Policy 4 Construct and retrofit the trails to reach AASHTO safety guidelines. All safety improvement projects—including poor sight-lines, drainage control, and narrow

### **Key**

● High Priority ○ Medium Priority ○ Low Priority





trails—should be programmed through the Bicycle Trail Plan and the CIP.

- Policy 5 The City of Sioux Falls obtains and/or utilizes easements or right-of-way within floodplains, drainageways, and other significant natural areas as they become available to expand the bicycle trail system.
- Policy 6 It is generally desirable for Sioux Falls Parks and Recreation to maintain the trail system through a systematic approach as included in the Bicycle Trail Master Plan and City of Sioux Falls CIP.
- Policy 7 Additional drinking fountains should be placed along the routes as indicated in the Bicycle Trail Master Plan and programmed into the Sioux Falls CIP.
- Policy 8 A bicycle sidepath should be constructed within SD 100 and the West Corridors right-of-way. The bicycle sidepath should be at least 10 feet wide. Underpasses or overpasses should be constructed approximately every one mile and where feasible to provide safe connections to the sidepath and to connecting trails.



- Policy 9 Potential trails (especially east-west routes) traversing across the city should be investigated to add connectivity to the trail system.
- Policy 10 Areas for bicycle rentals should be encouraged near the trail system through a private business.
- Policy 11 Generally, the City of Sioux Falls will widen the major bicycle trails to 12 feet in areas that are possible and develop parallel trails where trail volumes are high. Consideration should be given to parallel trails and/or soft shoulders as an option. Bicycle feeder trails (off the main trail system) will be 8 to 10 feet in width.
- Policy 12 Generally, the City of Sioux Falls will only continue to light the bicycle trail system in limited areas, such as under bridges and within Fawick Park and Falls Park.





- Policy 13 Ensure the trail is accessible to emergency vehicles and emergency communications.
- Policy 14 Generally, Sioux Falls Parks and Recreation will clear snow from the Big Sioux Greenway bike trails after other priority routes have been completed.

**Objective C.** Develop and maintain on-street bicycle routes and other bicycle-related facilities.

- Policy 1 Develop a “complete streets” policy by ensuring all development and street projects integrate all modes of travel into the site or design plan. This includes developing a design plan and cost estimate for the addition of bicycle, pedestrian, and transit-related improvements consistent with the Bicycle Plan. This policy should be interpreted to go above and beyond “consideration” as required by federal law (23 U.S.C. § 217).
- Policy 2 The City shall add bicycle facilities based upon the Bicycle Facility Design Guidance and consistent with the Future Bicycle Route Map. To measure the effectiveness of the on-street bicycle facilities, the City

shall do a pilot project study including bicycle lanes, wide curb lanes, shoulder bikeways, signed destination routes, side-paths, and sharrows. Based upon the results of pilot projects, there should be more widespread implementation of the bicycle facilities.

- Policy 3 Develop and keep updated Bicycle Compatibility Ratings for all collector and arterial roadways, and provide the information to the general public on the City website. (See compatibility ratings map in Section IV.)
- Policy 4 Encourage installation of bike racks consistent with the Bicycle Facility Design Guidance.
- Policy 5 Encourage businesses and the City of Sioux Falls to place bicycle parking in commercial areas and other destination areas, such as parks and schools. In addition, the city should encourage secure bicycle storage (i.e., bicycle lockers) in areas such as downtown.
- Policy 6 Maintain the streets for bicycling (especially the sections within 5 feet of the curb), including street sweeping and pothole repair. Information to

### **Key**

- High Priority
- Medium Priority
- Low Priority



the condition of the roadways should also be helped through an on-line street hazard reporting center.

- Policy 7 Develop safe transitions from roads to trail facilities.
- Policy 8 Sidepaths should be developed as last resorts when trail or on-road facilities are not feasible, or the roadway design speed and volumes are so high that safety of on-road bicycling becomes an overriding concern. Sidepaths can then be placed as an option when collector on-street route connectivity is not available.
- Policy 9 Develop a City-initiated bike rack program with businesses.
- Policy 10 Vehicle rumble strips should be constructed with a bicycle-friendly design. The rumble strips constructed within the driving lane near stop signs should be especially considered. Develop a standard policy and determine and describe plates acceptable for bicycle-friendly rumble strips.



### **Goal #3**

***Promote bicycling as an important transportation mode and recreational experience.***

Sioux Falls would benefit from a promotion of increased bicycle use for the commuter for the following reasons:

- Reducing trips made by car by increasing bicycle commuters.
- Reducing air pollution and fuel consumption.
- Reducing roadway congestion.
- Promoting better physical condition of citizens.
- Reducing costs for commuters.

Promoting Sioux Falls as a bicycle-friendly city would also create many recreational and tourism benefits for the city, including:

- Better quality of life for residents.
- Safe and aesthetically pleasing areas to bicycle.
- Better physical condition of citizens.





- More tourism opportunities for the community through bicycling events and recreational trails.
- Economic development opportunities created for local merchants with more visitors here to bicycle.

**Objective A.** Promote bicycling through advocacy, events, and training.

- Policy 1: There is needed staff support for the provision of bicycle advocacy, whether through staff support at the City of Sioux Falls or through a nonprofit organization. According to the City of Austin (Texas) bicycle plan, "This is the single most effective and important step to increase bicycle use for transportation, as well as improving safety for existing and future bicycle users." The advocacy organization would help put together events encouraging people to bicycle and to advocate for additional bicycle facilities. Other activities would include:

- Serving as the voice of transportation and recreational cyclists.

- Working with city and county bicycle advisory committees to coordinate the county bicycle plans into an integrated regional network.
- Helping to identify missing links in the city's and county's bicycle transportation network that prevent the safe and efficient use of bicycles, and proposing corrective designs.
- Fundraising for trails and facilities.
- Facilitating communication between city and county agencies for transportation issues related to bicycles.
- Working with other organizations and agencies to bring about changes in the planning process and the infrastructure to better accommodate bicycles.
- Monitoring governmental workings at state, regional, and local levels, and monitoring comments on legislation as to potential effects on cycling. Responding to environmental documents from a bicycling perspective.
- Presenting cultural and educational workshops and events that help city and metro area

**Key**

- High Priority ● Medium Priority ○ Low Priority





residents realize the cycling possibilities within the Sioux Falls area. These workshops and events build the culture of bicycling in the Sioux Falls metro area and help increase the pro-bike constituency, which will be more active in policy/urban planning issues. These workshops and events include family bike rides through historical parts of town, bike rides to the movies or to cultural events, seasonal rides and sightseeing tours, workshops on shopping by bike, transporting children by bike, how to dress for rain/snow, etc.

- Policy 2: Expand upon the annual “Bike to Work Day” and encourage people to commute year-round on bicycles.
- Policy 3 Bike to Work Day event should become a citywide event with a program to encourage bicycle commuting throughout the year.
- Policy 4 Work towards gold-level Bicycle Friendly Status with the League of American Bicyclists.
- Policy 5 The area’s bicycle clubs should develop community bicycle ride events each year as a fund raiser for bicycle-related projects, training, and advocacy.

**Objective B.** Inform the public.

- Policy 1 Proactively inform the public regarding bike trail construction activities. It should be a multifaceted approach, including news releases, consistency, [bikesiouxfalls.org](http://bikesiouxfalls.org) or [siouxfalls.org](http://siouxfalls.org) as a portal, and advance signage (time and location).
- Policy 2 The City of Sioux Falls Planning Office will develop, print, and circulate an accurate and up-to-date bicycle trail and route map every two years.
- Policy 3 Provide a yearly bicycle plan status report to the Bicycle Committee and the MPO committees (CAC, TAC, UDC). The Bicycle Committee will be a standing committee of the City of Sioux Falls and will continuously make recommendations on issues regarding bicycling to the City.
- Policy 4 Continue to have the bicycle plan available on the Sioux Falls website and inform through the media when policies are being implemented.





- Policy 5 Provide convenient and accessible information about the bike trail, route, and parking system on the City of Sioux Falls website.
- Policy 6 Produce and play bicycle informational videos on CityLink—Channel 16 and stream the videos on the City website.
- Policy 7 Create and print bicycle route maps for bike trails and for routes outside of town.
- Policy 8 Meet with civic groups to promote plan goals, objectives, and policies.

**Objective C.** Create a partnership with Sioux Falls Transit to allow citizens more commuting options.

- Policy 1 Encourage usage of the bicycle racks on the front of all Sioux Falls Transit buses to provide bicycle commuters with the option of using transit services to enhance their commuting options. Each year, allow anyone who bikes and rides during Bike to Work Week to ride the bus for free.



**Key**

- High Priority
- Medium Priority
- Low Priority





## IV. Bicycle Facility Design Guidance

These design guidelines are intended to serve as an aid to engineers, designers, planners, and others in accommodating bicycle traffic in different riding environments, and to encourage predictable bicycling behavior. The design guidance is not meant to act as design standards, but rather as a list of acceptable bicycle facilities and the situations in which they are acceptable. All bicycle facilities will need to be further designed to conform to the City of Sioux Falls Engineering Design Standards, the AASHTO 1999 “Guide for the Development of Bicycle Facilities,” and the MUTCD (Manual of Uniform Traffic Signals).

Use the following criteria to determine if a bicycle facility will be effective and desirable. The network will include whether the facility is an existing or proposed bicycle facility.

- **Accessibility**—Residential areas and high-priority destinations (schools, shopping areas, business centers, parks, etc.) should all have reasonably safe access by bicycle.
- **Directness**—Studies have shown most bicyclists will not use even the best bicycle facility if it greatly increases the travel distance or trip time over that provided by less-desirable alternatives.
- **Continuity**—The network should have few missing links.

- **Route Attractiveness**—Low perceived threat to personal safety and high visual aesthetics.
- **Low Conflict**—Few conflicts between bicyclists and motor vehicles.
- **Cost**—Costs should be reasonable to implement.
- **Ease of Implementation**—Room to place facility; does not unduly impact traffic operations.

### *Designing for the Rider*



**Advanced riders**—Experienced riders who can operate under most traffic conditions, they comprise the majority of current users of collector and arterial streets and are served by the following:

- Direct access to destinations usually via the existing street and roadway system.
- The opportunity to operate at maximum speed with minimum delays.
- Sufficient operating space on the roadway or shoulder to reduce the need for either





the bicyclist or the motor vehicle operator to change position when passing.

Types of facilities on which to focus—arterial and collector roadway improvements including bicycle lanes and wide curb lanes.



**Basic riders**—These are casual or new adult and teenage riders who are less confident of their ability to operate in traffic without special provisions for bicycles. Some will develop greater skills and progress to the advanced level, but there will always be many millions of basic bicyclists. They prefer:

- Comfortable and safe access to destinations, preferably by a direct route; either low-speed, low-traffic-volume streets, or designated bicycle facilities.
- Well-defined separation of bicycles and motor vehicles on arterial and collector streets (bike lanes and shoulders), or on separate paths.

Types of facilities on which to focus—bicycle trails, collector bicycle lanes, and residential street routes to specified

attractions or sidepaths, and sidewalks where no other option is available.



**Child riders**—Pre-teen riders whose roadway use is initially monitored by parents.

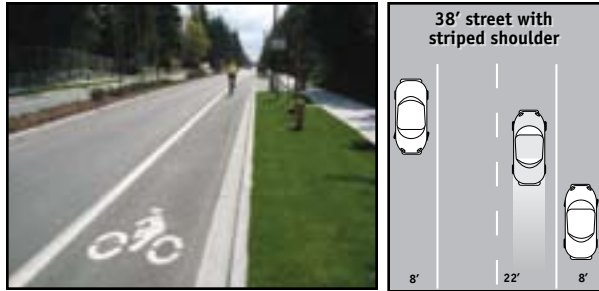
Eventually they are accorded independent access to the system. They and their parents prefer the following:

- Access to key destinations surrounding residential areas, including schools, recreation facilities, convenience shopping, or other residential areas.
- Residential streets with low motor vehicle speed limits and volumes.
- Well-defined separation of bicycles and motor vehicles on arterial and collector streets—or on separate bicycle paths.

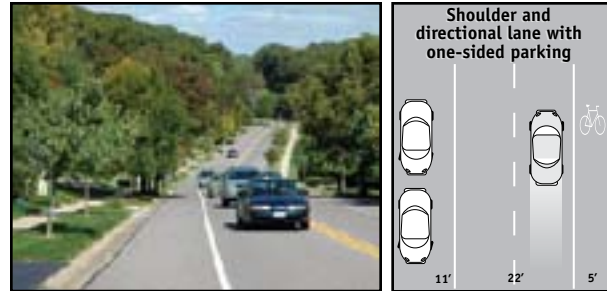
Types of facilities on which to focus—bicycle trails, residential street routes to specified attractions, and sidepaths where no other option is available.

Currently, Sioux Falls has many collector and arterial streets that are potential routes for





Source: City of Boulder, Colorado



Shared parking/bicycle shoulder (St. Louis County, Missouri)

bicyclists to cross the city. Some of these routes are comfortable for bicyclists, while other routes are stressful due to large traffic volumes, high speeds, and constrained space. The City of Sioux Falls has developed a Bicycle Compatibility Rating that divides roads into the following categories:

***Bicycle Compatibility Levels***

**Levels A–C**

Recommended street for all levels of bicyclists (except maybe children).

**Level D**

Recommended for moderately experienced bicycle riders.

**Level E**

Recommended for only experienced bicycle riders.

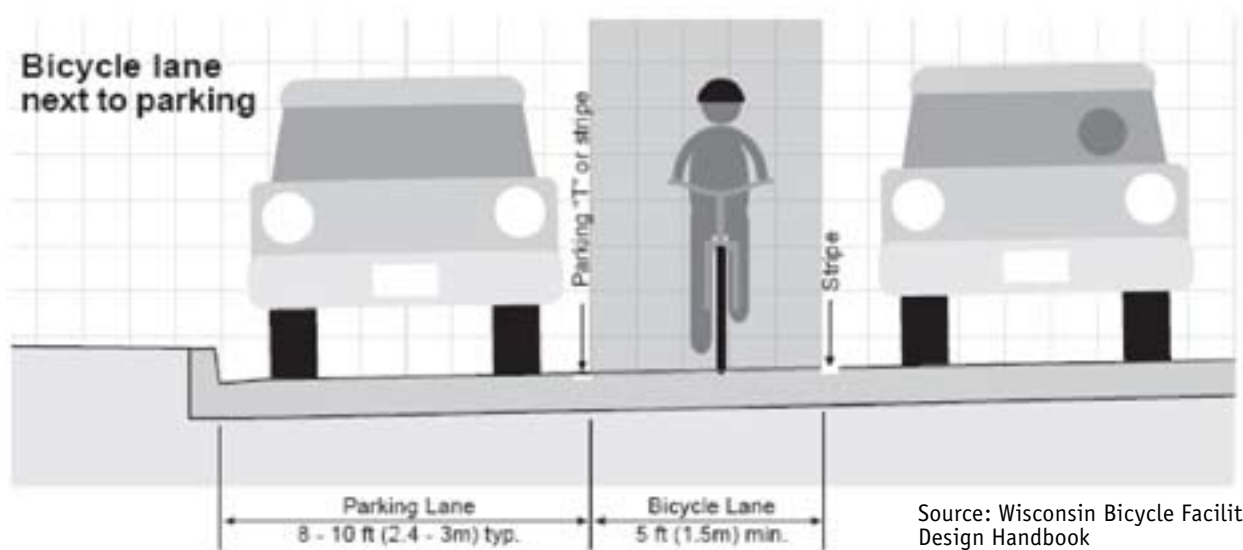
**Level F**

Not recommended for any level of bicycle rider.

**NA**

Roadways and interstate that, by law, prohibit bicycles.

Selected bicycle riders will bicycle all preliminarily rated streets. The riders review the





routes to either concur on the preliminary rating or change the rating based upon the following criteria. With the maps provided, the bicyclists ride each route and determine if the preliminary rating is accurate or should be upgraded or downgraded.

Factors for riders to consider when rating:

#### **Curb lane condition**

- If good condition, leave at same level.
- If poor condition, lower one level.
- If condition makes it difficult to ride, lower two levels.

#### **Turning traffic and driveways**

- If there is very little turning traffic, leave at same level.
- If there is significant turning traffic, lower one level.

#### **Curb Lane Width**

- If 15 feet or greater, raise one level (includes parking lane).
- If 13 to 15 feet, leave at same level.
- Less than 13 feet, lower one level (feels like riding in same lane as traffic).

On the following page is the draft **Bicycle Compatibility Map** (Map 2) for all arterial and collector streets in Sioux Falls. This map, when completed, will be included on the Sioux Falls City website to provide bicyclists with information on which streets are the best routes according to their ability. Also, the map is a planning tool to help prioritize bicycle facility improvements.

### **Types of Bicycle Facilities**

Bike lanes are feasible when:

- A portion of the roadway has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.
- The minimum width for a bike lane is 5 feet, at least 4 feet of which should lay to the left of the gutter pan seam.
- Possible on collectors and two-lane arterials with parking lanes if street is at least 44 feet wide with no continuous turn lane. With continuous turn lane, the street must be at least 52 feet in width.
- Field studies confirm bike lanes have a strong channelizing effect on motor vehicles and bicycles.
- Bike lane stripes can increase bicyclists' confidence that motorists will not stray into their path of travel if they remain in the bike lane.

Likewise, with more certainty as to where bicyclists will be, passing motorists are less apt to swerve towards opposing traffic in making certain they will not hit bicyclists.

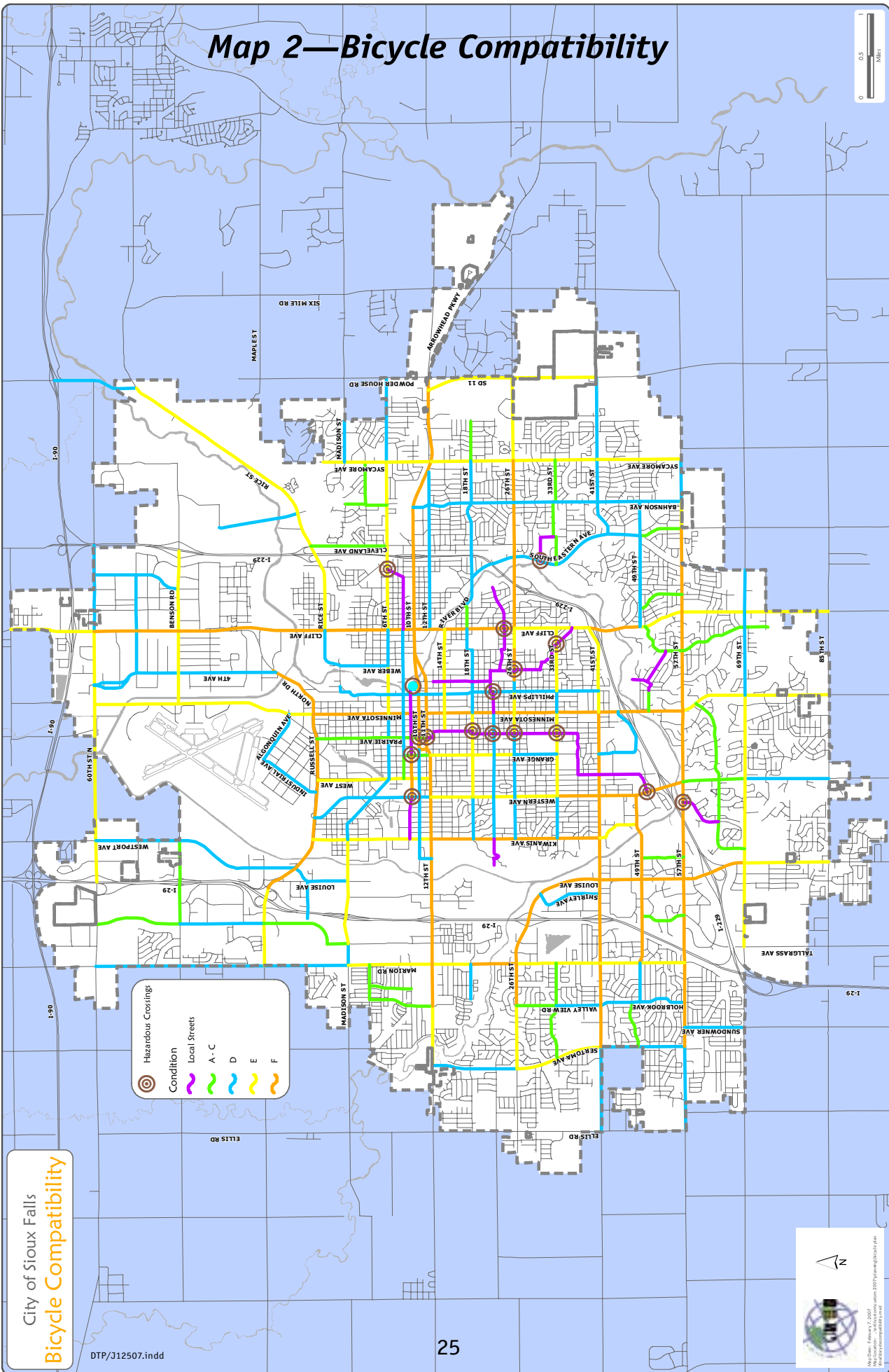


*Not acceptable*

Source: Wisconsin Bicycle Facility Design Handbook



# Map 2—Bicycle Compatibility



**Hazardous Crossings**

**Condition**

Local Streets

A - C

D

E

F

City of Sioux Falls  
Bicycle Compatibility

DTP/J12507.indd

City of Sioux Falls  
1000 East 10th Street  
Sioux Falls, SD 57105  
605.338.2000  
www.siouxfalls.gov



*A typical suburban arterial shoulder designated for cycling.*



*Sharrows as an alternative to the bike lane (above and below).*



Wide curb lanes on collectors and arterials.

- Right-most through-traffic lanes that measure at least 14 feet (measured from the lane stripe to the edge of the gutter pan). When traffic exceeds 10,000 Average Daily Traffic, 15-foot lanes are desirable.
- On two-lane collectors, very possible if parking lane is utilized infrequently.
- Advantages:
  - Accommodate shared bicycle/motor vehicle use without reducing roadway capacity for motor vehicle traffic.
  - Minimize both the real and perceived conflicts between bicycles and motor vehicles.
  - Increase the roadway capacity by the number of bicyclists capable of being accommodated.



*Sidepath. Source: City of Boulder, Colorado*





### Sidepath links

- Where no other alternatives exist and continuity of the network requires a sidepath.
- On roadways where speed limits exceed 45 mph.

### On-street signed destination routes

Located on collector or some residential streets.

- Update current route network to be more destination-based.
- Improve separate routes that have wide-curb lanes.

### Shoulder bikeways (on rural section roadways)

- Smooth paved roadway shoulders provide a suitable area for bicycling, with few conflicts with faster-moving motor vehicle traffic.
- Roadway shoulders for bikeways under ideal circumstances should be 6 feet wide or greater. A minimum 4-foot shoulder may be used if there are physical width limitations.<sup>1</sup>

### Sharrows as an option—when not enough room for a bike lane

The shared lane pavement marking is typically used where a bike lane is desired but cannot be implemented due to insufficient roadway width

or other constraint. Use of the shared lane marking would be applicable in the following situations:

- In a wide lane (12 feet or greater) on a two-lane roadway.
- In the right lane of a four- to six-lane arterial.
- On a signed bike route where lane widths narrow (12 feet or less), or where traffic volumes and speeds are relatively high, possibly in conjunction with “Share the Road” signs.
- For route continuity between sections of roadway where a more desirable facility can’t be implemented.
- Within a shared bus/bicycle lane.

The pavement marking warns the motorist of the presence of bicycles, while helping the bicyclist determine which part of the road they may use to be most visible to drivers, and to help avoid conflicts with parked cars. It can also serve to identify a link in a bicycle route network and assist in wayfinding.

Periodic use of the “Share the Road” sign is recommended to accompany the shared lane marking. If “Share the Road” signs are used, they may be located immediately adjacent to the pavement marking and may include a downward arrow (45 degrees down and left) pointing directly at the symbol, making it clear what the symbol means.

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<sup>1</sup> Source: **Bicycle Facility Selection: A Comparison of Approaches**  
Prepared by Michael King for the Pedestrian and Bicycle Information Center  
Highway Safety Research Center  
University of North Carolina—Chapel Hill  
August 2002





## **Which Bicycle Facilities Should We Use?**

### **Wide curb lane versus bicycle lanes— which are better?**

*Excerpt from Federal Highway Administration  
(FHWA) 1999 Study*

“The overall conclusion of this research is that both BL (bike lanes) and WCL (wide curb lane) facilities can and should be used to improve riding conditions for bicyclists, and this should be viewed as a positive finding for the bicycling community. The identified differences in operations and conflicts were related to the specific destination patterns of bicyclists riding through the intersection areas studied. Given the stated preferences of bicyclists for BLs in prior surveys (e.g., Rodale Press, 1992) along with increased comfort level on BLs found in developing the Bicycle Compatibility Index (Harkey et al., 1998), use of this facility is recommended where there is adequate width, in that BLs are more likely to increase the amount of bicycling than WCLs. Increased bicycling is important because in the United States there are but a few communities that have a significant share of trips made by this mode. Overall, we have not yet reached the critical mass necessary to make motorists and pedestrians aware of the regular presence of the bicycle. When this critical level of bicycling is reached, gains in a “share the road” mentality will come much more quickly than at present. Certainly not all the problems will disappear, but

the ability to develop and implement solutions will be greatly enhanced.”

## **What Are Some Strategies for Adding Some of These Bicycle Facilities?**

### **Gaining Space on our Streets**

Following are strategies for gaining extra space that can be redistributed for bicycle use in the roadway as wide outside lanes, striped shoulders, or bike lanes. The following table, “Example Redistribution of Extra On-Street Width for Bicycle Use” shows possible uses depending on the amount of extra width obtained:

- On multilane roadways, travel lanes can be narrowed to 10 or 11 feet.
- On streets with raised medians, the median could be narrowed, providing more pavement width.
- Road diets can be employed, if appropriate, to eliminate one or two travel lanes or possibly the continuous left turn lane.
- If parking supply exceeds demand, parking can be consolidated and limited to one side of the street, or eliminated altogether if it is truly unnecessary.







**The following excerpt is from the “Bicycle and Pedestrian Information Center—Bike Lane Design Guide.” It helps show the importance of adding bike lanes as a bicycle facility.**

**Why put bicyclists on the street; why not on sidewalks or bikepaths?** Sidewalks are for pedestrians. Bicycle use on sidewalks with high numbers of pedestrians results in crashes and injuries for both bicyclists and pedestrians. In most cases, the street is the safest place for bicyclists to ride in the city. National studies have shown that riding on the sidewalk is a significant contributor to car/bike collisions because the motorist is not looking for a relatively fast moving vehicle on the sidewalk. Bicycles are legal vehicles and bicyclists have the same rights and responsibilities as motorists when traveling on the street. Bicycle paths (trails or shared use paths) are good facilities for some trips, but have limited usefulness for most trips throughout the city.

Bike lanes encourage bicyclists to use the street as opposed to the sidewalk, which eases congestion and improves safety on the sidewalks. Streets by their very nature serve the bicyclist in the same way they serve every other user: They get people where they want to go. The street system is already in place and streets provide access to virtually all destinations: homes, businesses, shops, schools, churches, parks, etc. There is not enough space or money to create separated bike paths all over the city.

**Why are bike lanes usually on the arterial streets?** Why not put more lanes on the side streets? Several criteria are used when determining which streets to put bike lanes on: Direct streets, streets with relatively low traffic speeds and volumes, and streets that have controlled (stop signs or stop lights) intersections. Quieter residential or side streets are great streets to ride on but can be dangerous when they cross big streets that do not have a controlled intersection and they therefore are not good candidates for bike lanes. Arterial streets offer directness and access to most destinations; therefore, they are popular choices for getting around. Bike lanes on arterial streets offer cyclists the assistance they need when in busier conditions.

**What happens to the car parking?** In many cases, on-street parking is not affected by installing bike lanes. The bike lane is striped between the parking lane and the motor vehicle travel lane. In some isolated instances, one or two parking spaces may be lost near an intersection to provide proper alignment and sight distances.

**Will the bike lane cause traffic jams?** Traffic jams result from too many cars trying to use the same space on streets. Bike lanes use only 5 feet of lane space—not enough to carry a motor vehicle. And bikes are twenty times as space-efficient as autos. Bike lanes can actually alleviate congestion. When some drivers choose to bike instead of drive, additional road space is freed up and everybody wins. Will bike lanes slow down traffic? Bike lanes have been shown to reduce the speeds of motor vehicles in adjacent lanes by about 5 miles per hour. This usually benefits most urban streets because they work best when cars are traveling between 25 and 35 miles per hour. Overall travel times on streets with bike lanes usually remain the same. Bike lanes help to calm and organize the traffic. That means fewer accidents. That’s because bike lanes help create a buffer zone at the edge of the traffic lane. This buffer improves safety for people entering or exiting their parked cars and makes it easier for drivers to see children about to enter the roadway—giving them more time to react. What happens at the intersections? At intersection approaches, the bike lane striping is usually dashed to indicate that motorists may be entering and crossing the bike lane to make a right-hand turn. There are pavement markings and signs to indicate this. Where there is not adequate width to stripe the bike lane up to the intersection approach, the curbside lane should be signed as a shared-use lane. In some cases use of the shared-use lane is restricted to buses, bikes, and right turns.





Example Redistribution of Extra On-Street Width for Bicycle Use (One Direction of Travel)		
Extra width obtained	Resulting Outside Lane Width	Use of Extra Width
5' or more	15' or more	Install a dedicated bicycle lane.
3' to 4'	13' to 14'	Install a wide outside lane, the "Shared Lane" (Sharrow) pavement marking or a striped shoulder.
2'	12'	Install a wide outside lane, with possible "Shared Lane" (Sharrow) pavement marking.
1'	11'	Make the outside lane wider than other lanes.

*\*Assuming minimum beginning lane width of 10'*

Source: City of Baltimore—Live, Earn, Play, Learn

### **Proposed Bicycle Routes**

The current bicycle route system has been in place in Sioux Falls for the past ten years. Additions and changes are needed to ensure that bicyclists feel safe and are safe, and are encouraged to ride on city streets. Generally, bicycle routes should be along collector streets that have good connectivity and somewhat slower speeds and volumes than arterial roadways. In some cases, arterial roads may be used as linkages, and in those cases sidepaths may be a better option for four-lane arterial roadways having outside lanes that are too narrow for comfortable and safe riding. The criteria for safe bicycle routes includes the following:

- Paved collector streets with good connectivity.
- Restricted or unused parking areas.
- Two-lane roadways without center turn lanes.

- Controlled intersections across arterial or other collectors (stop signs or signals).

**A Proposed Bicycle Route Map (Map 3)** is included on page 32. All routes will be further reviewed to determine a destination-based signage system. The review will include a street-by-street analysis of the above criteria. All routes will then be programmed in the City budget for the destination-based signage. Also, the routes will be candidates for pilot projects completed by the City for bicycle lanes, wide curb lanes, sidepaths, sharrows, and bicycle shoulders. All facilities will be reviewed based upon the guidance of this chapter.

### ***Bicycle Parking***

More than 1.5 million bicycles are reported stolen every year in the United States, and fear of bicycle theft is recognized as a significant deterrent to bicycle use. The availability of safe and convenient parking is as critical to bicyclists as it is for motorists, and yet it is frequently overlooked in the design and operation of shops, offices, schools, and other buildings. However, providing good-quality bicycle parking that is going to be used and useful is not quite as easy as leaving a "fence" or "grid" style rack out by the back fence of the shopping plaza or school yard and expecting cyclists to find and use it. Indeed, many agencies are now adopting quite-specific bicycle parking design, location, and installation requirements. When installing bicycle parking facilities, the below recommendations should be followed.

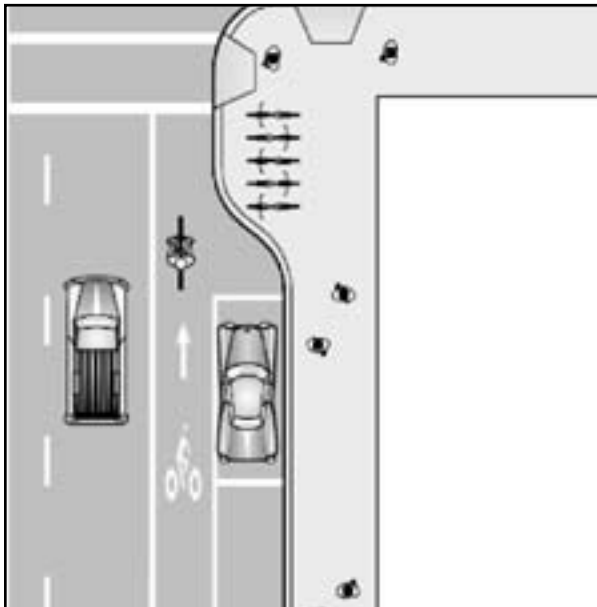


## **1. Planning**

Bicycle parking needs to be . . .

- Visible
- Accessible
- Easy to use
- Convenient
- Plentiful

Racks need to support the whole bike (not just one wheel) and enable the user to lock the frame and wheels of the bike with a cable or U-shaped lock. Parking should preferably be covered, well-lit, and in plain view without being in the way of pedestrians or motor vehicles.



## **2. Finding a Good Location**

- Racks are installed within the right-of-way, usually on a wide sidewalk with 5 or more feet of clear sidewalk space remaining.

- Racks are placed to avoid conflicts with pedestrians. They are usually installed near the curb and away from building entrances and crosswalks.
- Racks can be installed in bus stops or loading zones only if they do not interfere with boarding or loading patterns and there are no alternative sites.
- The City will only install bike racks in concrete, as they cannot be securely anchored in asphalt.
- Racks must be 4 feet from fire hydrants, curb ramps, building entrances, etc.

Bicycle racks that are sited poorly will not be well-used. Racks that are too close to the wall, or which don't have enough room between them, will end up sitting empty while nearby railings, trees, and light poles continue to be used by bicyclists.

## **3. Choosing the Type of Rack**

The inverted "U"-type bike rack is the preferred bicycle parking rack, although other racks may be proposed provided that they meet certain performance requirements. Racks should:

- Support the frame of the bicycle, and not just one wheel.
- Allow the frame and one wheel to be locked to the rack when both wheels are left on the bike.



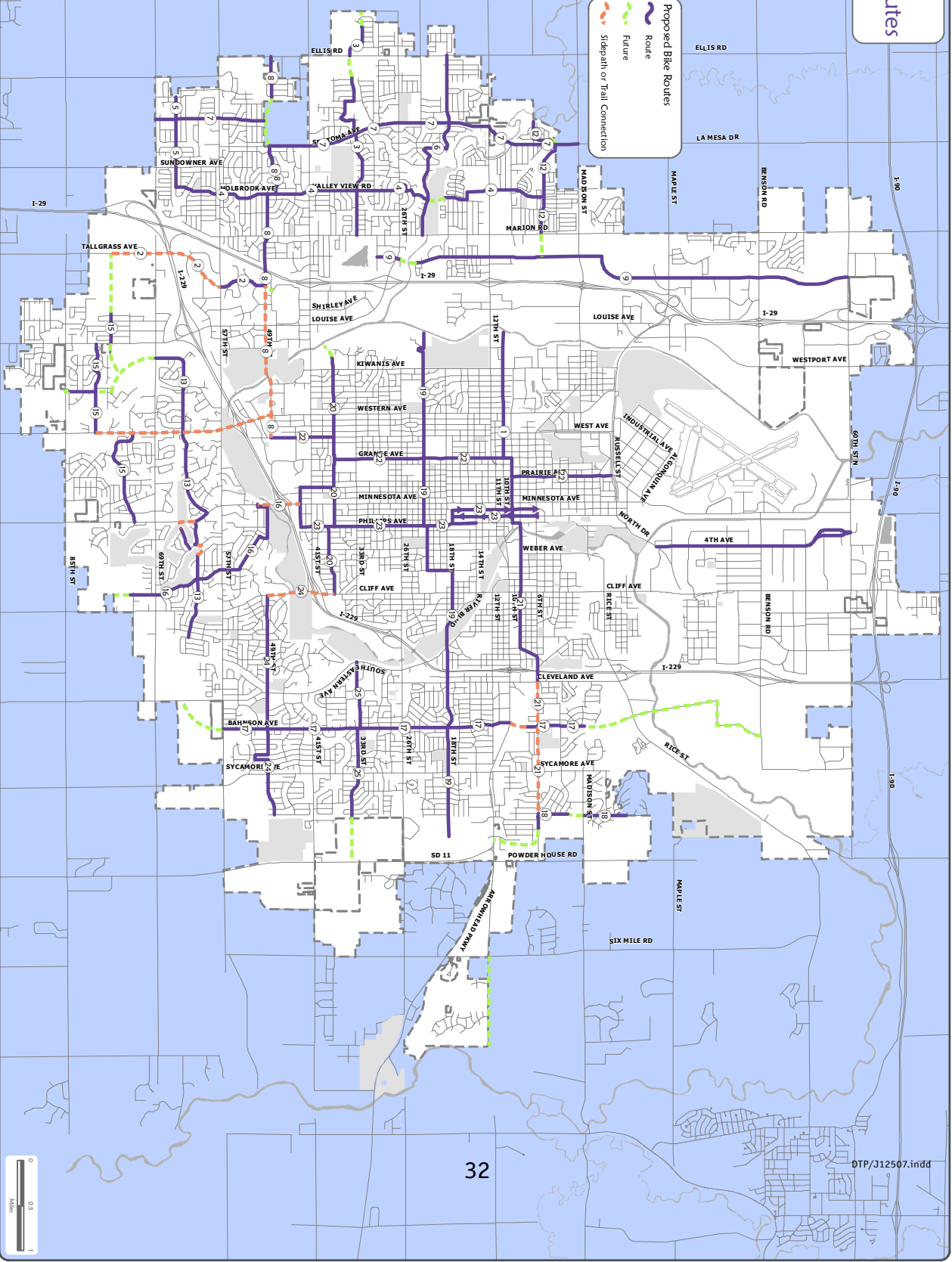
# Map 3—Proposed Bicycle Routes

City of Sioux Falls  
Proposed  
On-Street Bike Routes



**Proposed Bike Routes**

- Route
- Future
- Sidepath or Trail Connection



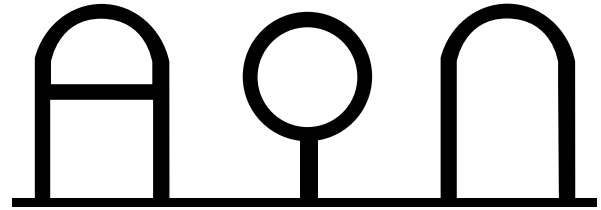
- Allow the frame and both wheels to be locked to the rack if the front wheel is removed.
- Allow the use of either a cable or U-shaped lock.
- Be securely anchored.
- Be usable by bikes with no kickstand.
- Be usable by bikes with water bottle cages.
- Be usable by a wide variety of sizes and types of bicycles.

Note that in downtown Iowa City, bikes can be locked to parking meters that have been adapted for the purpose.

### Parking Rack Recommendations

The rack area should be located along a major building approach line and clearly visible from the approach. The rack area should be no more than a 30-second walk (120 feet) from the entrance it serves and should preferably be within 50 feet. A rack area should be as close or closer than the nearest car parking space. A rack area should be clearly visible from the entrance it serves.

The following racks are recommended because one rack element supports two bikes and it supports the bicycle upright by its frame in two places.



*Recommended*

Bicyclists commonly use a “wave” rack as if it were a single inverted “U.” This limits the actual capacity of the rack to two bikes, regardless of the potential or stated capacity. Bicycles parked perpendicular to a wave rack (as intended by the manufacturer) are not supported in two places and are more likely to fall over in the rack. The advertised capacity of a wave rack is usually much higher than the practical capacity.



*Not Recommended*

### **4. Short-Term Bicycle Parking**

Short-term bicycle parking is usually defined as being two hours or less, such as might be necessary outside a store, or for visitors to an office building or government service center. Racks should be within 50 feet of the main entrance to the building, or entrances that are frequently used by cyclists. Other critical factors for short-term parking are that it be:





- Well-distributed (i.e., it is likely better to have four or five racks spread out along one city block rather than a group of four or five racks mid-block).
- Visible to the cyclist.
- In areas of high pedestrian activity to discourage would-be thieves.

### **5. Long-Term Parking**

Long-term parking usually suggests that the bicyclist is leaving the bike all day, or overnight, or for an even longer duration.

Obviously, the level of security and protection from the elements needs to be greater, but the immediate convenience of the parking facility may not be as important.

Long-term parking options include:

- Lockers—individual lockers for one or two bicycles.
- Racks in an enclosed, lockable room.
- Racks in an area that is monitored by security cameras or guards (within 100 feet).
- Racks or lockers in an area always visible to employees.

A growing number of communities are supporting the development of centrally-located secure bicycle parking garages that also offer bike rentals and repairs, easy links to transit, showers and lockers, and a variety of other services. There are three of these “Bikestations” in California, and similar facilities under develop-

ment in Fort Collins and Denver, Colorado; Seattle; Pittsburgh; and Chicago.

### **6. Covered Bicycle Parking**

Wherever possible, bicycle parking should be covered to protect the bicycle from rain, snow, and other elements. Covered parking areas should have at least 6 or 7 feet of clearance, but not so high as to allow rain and snow to easily blow under the roof.



### **7. Signs and Markings**

Provide bicycle parking identification signs where possible. The Manual on Uniform Traffic Control Devices (MUTCD) specifies a bicycle parking area sign (D4-3), and there are similar signs and markings in use in a number of communities.

### **8. Amount of Parking**

An increasing number of communities are adopting bicycle parking ordinances that specify a minimum level of bicycle parking for different building types and land uses. While these usually relate to new developments, the level of provision required can be used as a guide to retrofit communities also. The City of Sioux Falls has a bicycle parking density bonus and should look at updating that ordinance to incorporate bicycle parking standards discussed in the plan.





## Surrounding Community Facilities

Brandon has a bicycle trail leading through the Big Sioux Recreation area to Aspen Park. Minnehaha and Lincoln Counties have a number of roads that are used by bicyclists for longer duration rides. However, roads have not been designated by the counties as bicycle routes. Designated bicycle route signage and/or "Share the Road" signage would be helpful on these rural bicycle routes.

## Bicycle Route Signage

All shown bicycle route signs are MUTCD- (Manual of Uniform Traffic Signals) approved signage.

Current bicycle trail signage looks like this.



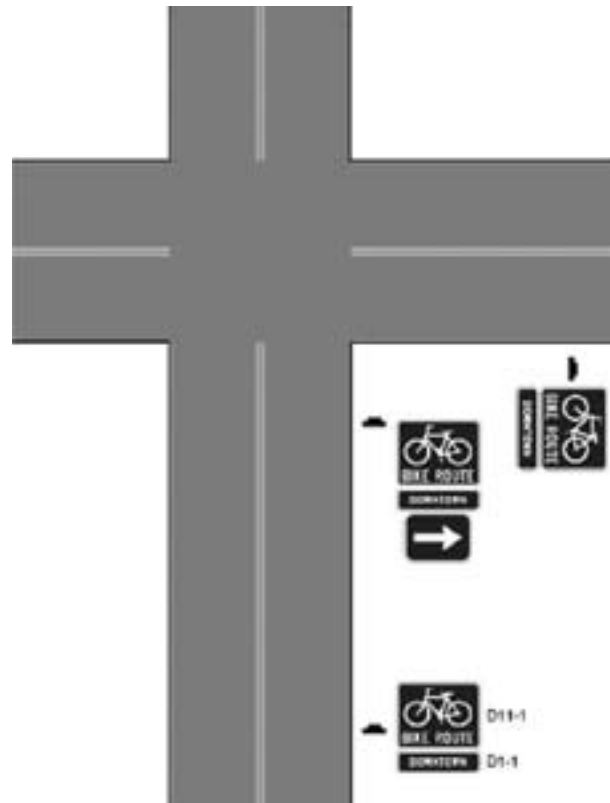
Many people have told City officials that they do not understand the significance of the route number, and the size of the sign makes it very difficult to notice.

Based upon that public input, the bicycle committee recommends that the bicycle route signage be changed to a destination signage system with larger bicycle route signs. The des-

ination would be posted underneath as illustrated below.



The next illustration provides information on the placement of the destination route bicycle signs.



*In urban areas, signs typically should be placed approximately every 400 meters (.25 mile) at every turn in the route, and at all signalized intersections.*





Along with the destination bicycle signs, “Share the Road” signs shall be strategically placed along the routes to stress to car drivers the importance for the need to share the road with bicyclists and to help develop an awareness for this.





## V. Bicycle Trail Plan

As Sioux Falls continues to grow, the bicycle trail will need to be expanded into those new growth areas. This Bicycle Plan has incorporated specific bicycle trail projects that are expected to occur during the next 15 to 20 years. More specific bike trail routes, connections, and funding levels will be established through specific bicycle trail master plans. **The Bicycle Trail Plan Map (Map 4)** is on the next page and illustrates these projects by category as listed below.

### ***Trail Access Improvement Projects***

1. New Trail access points at:
  - a. Ninth Street—Elmen trailhead
  - b. Elmwood Park
  - c. West Sixth Street and Helen Avenue
  - d. Benson Road connection
  - e. Hermosa Street
  - f. 54th Street North
  - g. Old railroad ramp ADA access ramp
2. Bridge at confluence of Skunk Creek and Big Sioux River—connection from west side of Sioux Falls.
3. Access to fairgrounds from 12th Street along dike on west side.



### ***Safety Improvement Projects***

4. Improve the drainage of many underpasses on the existing trail.
5. Low areas to raise in Yankton Trail.
6. Low areas to raise in Spencer Park.
7. Low areas to raise in Rotary Park in 2009.

There are a few dangerous curves/blind corners where signage should be added that says, "Blind corner—proceed with caution," The locations include:

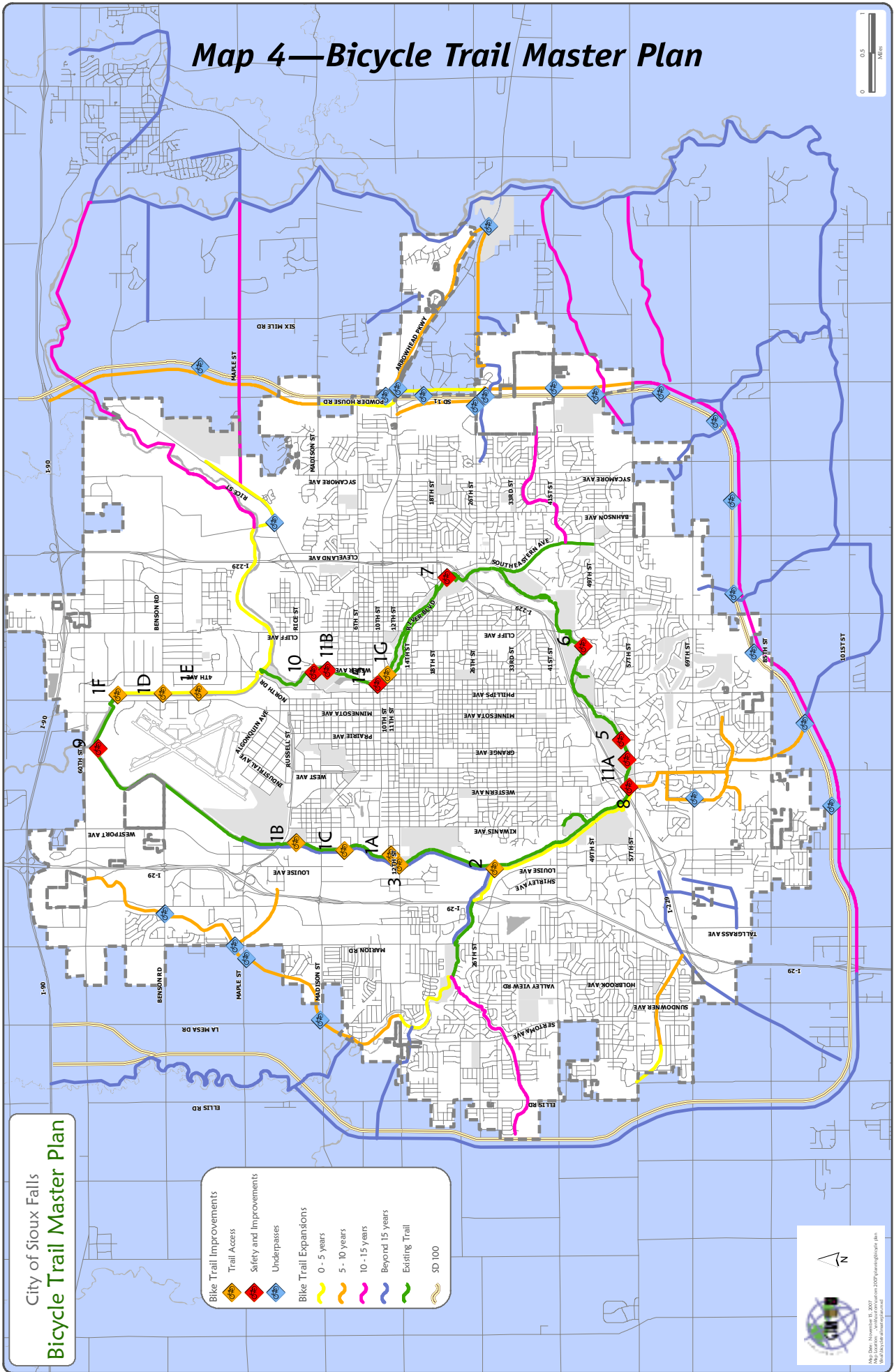
8. The Yankton Trail bridge area.
9. A curve near control gates on the Big Sioux River/Diversion Channel.
10. The Falls Park bridge-access route.

Other areas that have safety concerns that should be addressed include:

11. The bike trail street crossings at Yankton Trail Park (A) and Falls Park (B) could be safer. Could we paint crosswalks and bicycle warning signage here?



# Map 4—Bicycle Trail Master Plan



## City of Sioux Falls Bicycle Trail Master Plan

- Bike Trail Improvements
- Trail Access
- Safety and Improvements
- Underpasses
- Bike Trail Expansions
- 0 - 5 years
- 5 - 10 years
- 10 - 15 years
- Beyond 15 years
- Existing Trail
- SD 100

Map Date: November 15, 2017  
 Map Source: [www.siouxfalls.gov](http://www.siouxfalls.gov)  
 Map Scale: 1 inch = 1 mile



12. The I-229 bike trail underpass that has a concrete seam is getting too wide. Fill this in.
13. Access point to bike trail in Rotary Park needs maintenance work done. This work was completed in summer 2007.
14. Some benches are too close to the trail. Perhaps different benches with a single pedestal would help. Create a concrete pad to place benches off trail.
15. River Ramp bars curve in too far.
16. We need better communication on bike trail construction. It should be a multifaceted approach that includes news releases, consistency, [bikesiouxfalls.org](http://bikesiouxfalls.org) as a portal, and advance signage (time and location). Suggestions include:
  - a. Creating and distributing news releases and website notices.
  - b. Utilizing common bicycle web portals.
  - c. Posting signage advising about construction a week in advance.
  - d. Posting signage advising of construction ahead.
  - e. Recommend and post detour routes only when they are as safe as the current trail (take into account liability).
17. ADA slope compliance improvements (40 to 50 locations needed).
18. Consider adding a “soft shoulder” to areas where the trail is congested to allow

walkers and runners room to get over and let bikes and in-line skaters pass.

19. There is a concern about some portions of the bike trail that are disrupted by tree roots and uneven surface. (Example: main trail uneven to east of Cliff Avenue.)

### **Trail Expansion Projects**

- Paving of trail from North Drive to Minnesota Avenue (completed in 2007)
- Dunham Park to Legacy Park/12th Street (2008)
- Cliff Avenue to Great Bear Park (2008)
- I-29 to Sertoma Park—west side of river (2009)
- Diversion channel bridge to Cliff Avenue
- SD 100 sidepath from Madison Street to 26th Street
- SD 100 sidepath from 26th Street to 57th Street
- 12th Street to Benson Road
- Old Yankton Trail bridge to 85th Street
- SD 11 to Arrowhead Park
- Minnesota Avenue north to Tree Nursery Park

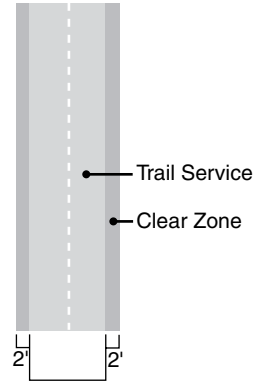
### **Other Bike Trail Improvements**

- Additional drinking fountains
  - Pumping station on North Minnesota Avenue
  - Other locations?





- Update kiosks/station points
- Bike racks in each park location along the trail
- Additional benches at every one-half mile along the trail
- Downtown trail improvements
  - Eighth Street Plaza—east side of river
  - Railroad bridge improvements, including ADA accessibility
  - East Bank redevelopment, including Schoeneman's and Zip Feed sites
  - Other greenway plan recommendations



Paved Multiple-Use Trails





# Appendix I

## ***Bicycle Laws and Statutes***

### **South Dakota State Bicycle Statutes**

**32-14-1.** Definitions. Terms used in Chapters 32-14 to 32-19, inclusive, 32-12 and 32-22 to 32-34, inclusive, mean:

(39) "Vehicle," a device in, upon, or by which any person or property is or may be transported or drawn upon a public highway, except devices moved by human power or used exclusively upon stationary rails or tracks; including bicycles and ridden animals.

*(This definition means that bicycles are included in the definition of vehicle—it is not clear, but a Supreme Court ruling clarified it to be so.)*

**32-17-25.** Bicycle lamps—Visibility and color—Violation as petty offense. Every bicycle shall be equipped with a lighted lamp on the front thereof visible under normal atmospheric conditions from a distance of at least three hundred feet in front of such bicycle and shall also be equipped with a reflex mirror or lamp on the rear exhibiting a yellow or red light visible under like conditions from a distance of at least two hundred feet to the rear of such bicycle. A violation of this section is a petty offense.

**32-20B-1.** Identifying number required on bicycle sold at retail—Violation as misdemeanor. A person engaged in the business of selling

bicycles at retail may not sell any bicycle unless the bicycle has an identifying number permanently stamped or cast on its frame. A violation of this section is a Class 2 misdemeanor.

**32-20B-2.** Operation on sidewalk or crosswalk—Rights of bicyclist—Duty to stop. A person operating a bicycle upon and along a sidewalk, or across a roadway upon and along a crosswalk, shall have all the rights and duties applicable to a pedestrian under the same circumstances, except as provided in § 32-20B-3, and except that bicyclists must stop before entering a crosswalk or highway from a sidewalk or sidewalk area.

**32-20B-3.** Operation on sidewalk or crosswalk—Duty to yield right-of-way to pedestrian—Violation as misdemeanor. A person operating a bicycle upon and along a sidewalk, or across a roadway upon and along a crosswalk, shall yield the right-of-way to any pedestrian and shall give an audible signal before overtaking and passing a pedestrian. A violation of this section is a Class 2 misdemeanor.

**32-20B-4.** Parking on sidewalk—Violation as petty offense. A person may park a bicycle on a sidewalk unless prohibited or restricted by an official traffic control device or ordinance. The parked bicycle may not impede the normal and reasonable movement of pedestrian or other traffic. A violation of this section is a petty offense.

**32-20B-5.** Operation on roadway—Riding close to right-hand curb required—Violation as mis-





demeanor. Any person operating a bicycle upon a roadway at less than the normal speed of traffic at the time and place and under the conditions then existing shall ride as close as practicable to the right-hand curb or edge of the roadway. However, a person operating a bicycle may move from the right-hand curb or edge of the roadway to overtake and pass another bicycle or vehicle proceeding in the same direction, to prepare for a left turn at an intersection or into a private road or roadway or to avoid conditions including, but not limited to, fixed or moving objects, parked or moving vehicles, bicycles, pedestrians, animals, surface hazards, or substandard width lanes that make it unsafe to continue along the right-hand curb or edge. For purposes of this section, a "substandard width lane" is a lane that is too narrow for a bicycle and vehicle to travel safely side by side within the lane. A violation of this section is a Class 2 misdemeanor.

**32-20B-6.** Turning, stopping, or starting signals required—Violation as misdemeanor. A person operating a bicycle shall give a continuous signal of intention to turn right or left during the last one hundred feet traveled by the bicycle before turning. The signal shall also be given while the bicycle is stopped waiting to turn. A signal by hand and arm need only be given intermittently if the hand is needed in the control operation of the bicycle. Except as provided in this section, a person operating a bicycle shall comply with the provisions of

§§ 32-26-22 and 32-26-22.1. A violation of this section is a Class 2 misdemeanor.

**32-20B-7.** Racing in approved event authorized—Approval of transportation commission or local authorities. Notwithstanding the provisions of § 32-25-23, a person may race a bicycle on a highway when competing in a racing event which has been approved by the transportation commission or local authorities on a highway under their jurisdictions. Approval of a bicycle highway racing event shall be granted only under conditions which assure reasonable safety for all race participants, spectators, and other highway users, and which prevent unreasonable interference with traffic flow which would seriously inconvenience other highway users. Tests of endurance are not considered bicycle racing.

**32-20B-8.** Racing—Exemption from traffic laws. The transportation commission or local authorities may exempt participants in an approved bicycle highway racing event on a highway under their jurisdiction from compliance with any traffic laws otherwise applicable thereto, provided that traffic control is adequate to assure the safety of all highway users.

**32-26-21.1.** Driving on sidewalk prohibited—Municipal restrictions on bicycle or electric personal assistive device operation—Violation as misdemeanor. No person may drive any vehicle other than a bicycle or an electric personal assistive device upon a sidewalk or sidewalk area except upon a permanent or duly authorized temporary





driveway. The local governing body of a municipality may restrict a bicycle or an electric personal assistive device from operating upon a sidewalk or sidewalk area. A violation of this section is a Class 2 misdemeanor.

**Sioux Falls Bicycle Ordinances**

**IN GENERAL**

**Sec. 10-1. Lights.**

Every bicycle driven upon any street, recreation trail, or sidewalk during the period from one-half hour after sunset to one-half hour before sunrise and at any other time when there is not sufficient light to render clearly discernible any person at a distance of 200 feet ahead shall be equipped with a lighted lamp on the front thereof visible under normal atmospheric conditions from a distance of at least 300 feet in front of such bicycle and shall also be equipped with a reflex mirror or lamp on the rear exhibiting a yellow or red light visible under like conditions from a distance of at least 200 feet to the rear of such bicycle.

(1957 Rev. Ords., § 13.306; Ord. No. 27-83, § 1, 5-2-83)

**Sec. 10-2. Brakes.**

Every bicycle, when operated in the city, shall be equipped with a brake adequate to control the movement and to stop such bicycle whenever necessary.

(1957 Rev. Ords., § 13.306)

**Sec. 10-3. Report of sale or purchase of bicycles.**

(a) A person engaged in the business of buying or selling new or secondhand bicycles shall maintain records which shall be accessible to the police department, giving the name and address of the person from or to whom each bicycle is purchased or sold, the description thereof, the frame number thereof, and the number of license plate found thereon, if any.

(b) A person engaged in the business of selling bicycles at retail shall not sell any bicycle or bicycle frame unless the bicycle or bicycle frame has an identifying number permanently stamped or cast on its frame.

(1957 Rev. Ords., § 13.309; Ord. No. 27-83, § 1, 5-2-83)

**Secs. 10-4--10-13. Reserved.**

**ARTICLE II.  
REGISTRATION\***

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\* Cross References: Licenses, ch. 23.  
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**Sec. 10-14. Required.**

Every bicycle owner shall list and register with the finance department his name and address, and the serial number, make, style, general description and registration of his bicycle.

(1957 Rev. Ords., § 13.302; Ord. No. 50-88, § 1, 6-20-88)



**Sec. 10-15. Records.**

The finance department shall provide and keep a suitable record in which shall be entered the information required by this article.

(1957 Rev. Ords., § 13.302; Ord. No. 50-88, § 2, 6-20-88)

**Sec. 10-16. Registration fee.**

The fee for the registration of each bicycle under the provisions of this article, and the issuance of the identification tag, shall be \$1.00.

(1957 Rev. Ords., § 13.303; Ord. No. 2166, 10-29-62)

**Sec. 10-17. Inspection.**

The police department shall have the authority to inspect all bicycles for mechanical fitness, and the finance department, upon the recommendation of the police department, may refuse to register, or revoke a registration, of any bicycle found to be in unsafe mechanical condition.

(1957 Rev. Ords., § 13.305; Ord. No. 50-88, § 3, 6-20-88)

**Sec. 10-18. Tags provided.**

The finance department shall provide suitable identification tags, upon which shall be marked or stamped a distinguishing registration number for each bicycle registered.

(1957 Rev. Ords., § 13.302; Ord. No. 50-88, § 4, 6-20-88)

**Sec. 10-19. Display of tag.**

The owner of each bicycle registered under the provisions of this article shall affix and maintain, at a prominent position on the bicycle, the identification tag issued upon such registration.

(1957 Rev. Ords., § 13.302; Ord. No. 50-88, § 5, 6-20-88)

**Sec. 10-20. Duplicates.**

For the replacement of any lost or mutilated tag issued under this article, a new identification tag shall be issued upon payment of a fee of \$1.00 and the original registration shall be deemed cancelled.

(1957 Rev. Ords., § 13.303; Ord. No. 2166, 10-29-62)

**Sec. 10-21. Expiration.**

Each registration required by this article shall expire only on change of ownership.

(1957 Rev. Ords., § 13.304; Ord. No. 2166, 10-29-62)

**Sec. 10-22. Transfer generally.**

Upon the change of ownership of a bicycle registered under the provisions of this article, the identification tag shall stay with the bicycle and be transferred to the person assuming ownership. A transfer fee of \$1.00 shall be charged for such transfer.

(1957 Rev. Ords., § 13.303; Ord. No. 2166, 10-29-62)

**Sec. 10-23. Report of transfer.**

Every person who sells or transfers ownership of any bicycle shall report, within ten days of the date of such sale or transfer, to the finance







department the name and address of the person to whom the bicycle was sold or transferred. The purchaser or transferee of such bicycle shall apply for a transfer of the registration thereof within ten days of the sale or transfer.

(1957 Rev. Ords., § 13.310; Ord. No. 50-88, § 6, 6-20-88) **Secs. 10-24--10-33. Reserved.**

**ARTICLE III.**

**OPERATION REGULATIONS**

**Sec. 10-34. Traffic regulations generally.**

Every person driving a bicycle shall have all of the rights and all the duties applicable to the driver of any other vehicle by this Code, except as to special regulations in this article and except as to those provisions of this Code which by their nature can have no application. (1957 Rev. Ords., § 13.301; Ord. No. 27-83, § 1, 5-2-83)

**Cross References: Traffic**, ch. 40.

**Sec. 10-35. Manner of riding.**

No person shall ride or propel a bicycle upon any street except in a careful or prudent manner and unless such person shall be capable of efficient control and operation of such bicycle. (1957 Rev. Ords., § 13.308)

**Sec. 10-36. Passengers prohibited; exception.**

No bicycle shall be used to carry more persons at one time than the number for which it is designed or equipped, except that an adult driver may carry an infant securely attached to his person in a back pack or sling or in an

infant carrier designed for bicycles with a safety belt firmly attached.

(1957 Rev. Ords., § 13.308; Ord. No. 27-83, § 1, 5-2-83; Ord. No. 50-88, § 7, 6-20-88)

**Sec. 10-37. Clinging to vehicles.**

Any person riding upon any bicycle shall not attach the bicycle or himself to any vehicle upon a street.

(1957 Rev. Ords., § 13.308)

**Sec. 10-38. Driving abreast.**

Persons driving bicycles upon a roadway shall not drive abreast at any time except while in the process of passing.

(1957 Rev. Ords., § 13.308; Ord. No. 2423, 6-13-66; Ord. No. 27-83, § 1, 5-2-83)

**Sec. 10-39. Carrying articles.**

No person driving a bicycle shall carry any package, bundle, or article which prevents the use of both hands in the control and operation of the bicycle. A person driving a bicycle shall keep at least one hand on the handlebars at all times.

(1957 Rev. Ords., § 13.308; Ord. No. 27-83, § 1, 5-2-83)

**Sec. 10-40. Acrobatic riding.**

No rider of a bicycle shall remove both hands from the handle or feet from the pedals or practice any acrobatic or fancy riding on any street.

(1957 Rev. Ords., § 13.308)

**Sec. 10-41. Speed; contests.**

(a) No person shall, while driving a bicycle upon a street or recreation trail, participate in





any race for speed with any other vehicle, except under permit from, and under the supervision of, the police department.

(b) By agreement with the police department, participants in an approved bicycle racing event may be exempted from compliance with any traffic laws otherwise applicable thereto, provided that traffic control is adequate to assure the safety of all highway users.

(c) Tests of endurance are not considered bicycle racing.

(1957 Rev. Ords., § 13.308; Ord. No. 27-83, § 1, 5-2-83)

State Law References: Bicycle races, SDCL 32-20B-7 et seq.

#### **Sec. 10-42. Interfering with pedestrians.**

No person shall ride or propel any bicycle upon any street in such manner as to interfere with any pedestrian thereon.

(1957 Rev. Ords., § 13.307)

#### **Sec. 40-77. Drive on right side of street— Vehicles generally; bicycles; exceptions.**

(a) Upon all streets except upon one-way streets, the driver of a vehicle shall drive the vehicle upon the right half of the street and shall drive a slow-moving vehicle as closely as possible to the righthand edge or curb of a street, unless it is impracticable to travel on such side of the street, and except when overtaking and passing another vehicle subject to the limitations applicable to overtaking and passing set forth in this chapter.

(b) The provisions of subsection (a) of this section shall not be deemed to prevent the marking of lanes for traffic upon any street and the allocation of designated lanes to traffic moving in a particular direction or at designated speeds.

(c) Any person driving a bicycle upon a roadway at less than the normal speed of traffic at the time and place and under the conditions then existing shall drive as close as practicable to the righthand curb or edge of the roadway except under any of the following situations:

- 1) When overtaking and passing another bicycle or vehicle proceeding in the same direction.
- 2) When preparing for a left turn at an intersection or into a private road or roadway.
- 3) When reasonably necessary to avoid conditions including, but not limited to, fixed or moving objects, parked or moving vehicles, bicycles, pedestrians, animals, surface hazards, or substandard width lanes that make it unsafe to continue along the righthand curb or edge. For purposes of this section, a "substandard width lane" is a lane that is too narrow for a bicycle and vehicle to travel safety side by side within the lane.

(d) Any person driving a bicycle upon a one-way highway with two or more marked traffic lanes may drive as near the





lefthand curb or edge of such roadway as practicable.

**Sec. 40-86.1. Same—Passing on right; circumstances under which permitted.**

The driver of a motor vehicle may overtake and pass to the right of another vehicle only under the following conditions:

- 1) When the vehicle overtaken is making or about to make a left turn.
- 2) Upon a street or highway with unobstructed pavement, not occupied by parked vehicles, of sufficient width for two or more lines of moving vehicles in each direction.
- 3) Upon a one-way street, or upon any roadway on which traffic is restricted to one direction of movement, where the roadway is free from obstructions and of sufficient width for two or more lines of moving vehicles.

**Sec. 40-91. Skateboarding and roller skating prohibited.**

(a) The city traffic engineer may designate and maintain by appropriate devices or by marks or lines upon the surface where the riding of coasters, skateboards, bicycles, roller skates, toy vehicles or similar recreation devices is prohibited. Areas may be designated where, in his opinion, there is particular danger to pedestrians, and at such other places as he may deem necessary.

(b) Owners or occupants of private property may post their property subject to the approval of the city traffic engineer.

(c) No person shall ride any coaster, skateboard, bicycle, roller skates, toy vehicles or similar recreation device upon any portion of public or private property as may be designated and posted in accordance with subsections (a) and (b) of this section.

**Sec. 40-226. Vehicles on parkways or sidewalks.**

(a) Generally. No person shall drive any vehicle or motor vehicle other than a bicycle or wheelchair upon the sidewalks or parkways or permit any such vehicle to be driven or remain on any sidewalk or parkway.

(b) Bicycles.

- (1) A person driving a bicycle upon and along a sidewalk, or across a roadway upon and along a crosswalk, shall yield the right-of-way to any pedestrian and shall give an audible signal before overtaking and passing such pedestrian.
- (2) A person shall not drive a bicycle upon and along a sidewalk, or across a roadway upon and along a crosswalk, where such use of bicycles is prohibited by official traffic control devices.
- (3) A person driving a bicycle upon and along a sidewalk, or across a roadway upon and along a crosswalk, shall have all the rights and duties applicable to a pedestrian under the same circumstances, except that a bicy-





clist must stop before entering a crosswalk or highway from a sidewalk or sidewalk area and must yield to all traffic on the highway.

**Sec. 40-243. Places where stopping, standing, or parking prohibited.**

Except when necessary to avoid conflict with other traffic, or in compliance with law or the directions of a law enforcement officer, no person shall stop, stand, or park a vehicle:

- 1) On the roadway side of any vehicle stopped or parked at the edge or curb of a street.
- 2) On a sidewalk; unless the vehicle is attended and is being loaded or unloaded and the area adjacent to the sidewalk has been designated by appropriate signs as a sidewalk loading zone by the traffic engineer or unless the vehicle is properly identified as a vehicle for transporting of disabled persons, it is necessary for the vehicle to be located on the sidewalk for loading and unloading purposes, and only two wheels on the loading/unloading side are on the sidewalk.
- 3) Within an intersection.
- 4) On a crosswalk.
- 5) Between a safety zone and the adjacent curb or within 30 feet of points on the curb immediately opposite the ends of a safety zone, unless a different length is indicated by signs or markings.
- 6) Alongside or opposite any street excavation or obstruction, when stopping, standing or parking would obstruct traffic.
- 7) Upon any bridge or other elevated structure upon a highway or within a highway tunnel.
- 8) On any railroad tracks.
- 9) Upon any street, alley or parkway for the purpose of selling or offering the same for sale or rent.
- 10) Any such vehicle which is parked or placed within 50 feet of the property of the residence of the owner of the vehicle is exempt from the provisions of this subsection.





# Appendix II

## ***Bicycle Route System Revision Notes***

### **Destination-Based Routes**

The City will investigate bike lanes where there is room and sharrows where there is heavy parking (such as downtown). Sidepath links are used only when no other alternative exists.

#### **Route #1—Elmen Trailhead/Downtown (current Route 28)**

1. Move to Tenth Street from Kiwanis Avenue to Western Avenue to be able to cross Kiwanis Avenue at a signal.
2. Extend route west on Tenth Street to proposed Elmen Trailhead providing bicycle trail access.
3. Dead-end route at Phillips Avenue (new route picking up from there).

#### **Route #2—Empire Mall/Tallgrass Avenue (New)**

1. This is a new route.
2. Solberg Avenue will be built with a sidepath now. What about wide curb lane?
3. Need to design wide curb lane on Tallgrass Avenue.
4. Sharrows on Solberg Avenue?

#### **Route #3—YMCA West/Kuehn Park (New)**

1. 32nd Street across Tea-Ellis.

2. Best route across Sertoma?
3. Signage south to Kuehn Park/Oscar Howe School?
4. No trailhead—extend further to east to Marion Road? If so, what is the end destination?

#### **Route #4—Bakker Park/Dunham Park/ Hayward School (New)**

1. Use Holbrook Avenue.
2. JFK School is along route.
3. How best to get to Dunham Park north of 26th Street (Holbrook Avenue dead-ends)?
4. Generally runs along Valley View Road (southern portions with jog on 16th Street to Christopher Avenue to entrance to park)
5. Add path at entrance to park to connect to trail?
6. Wide enough for lanes to the north of 12th Street?
7. How is 16th Street and Christopher Avenue for bikes?

#### **Route #5—Galway Park (West)/Bakker Park (East) (New)**

1. Generally runs along 66th Street from Galway Avenue to Holbrook Avenue.
2. Galway Park is planned to have trail.
3. Is this route too short to be meaningful (no true trailhead)?





### **Route #6—Discovery (West)/Dunham Park (East) (New)**

1. Generally runs along 22nd Street and Silver Valley Drive.
2. In future, develop route further to the west along Stoney Creek (jog to north).

### **Route #7—Galway Park (South)/Roosevelt High School and Memorial Middle School (North) (New)**

1. Generally runs along Sertoma and Galway Avenues.
2. First section to be developed between 12th and 26th Streets.

### **Route #8—New School Site/Sertoma Park (New)**

1. Generally runs along West Essex Drive and 49th Street.
2. Need to extend west toward proposed new school site.
3. -Or- could extend along 53rd Street (which goes to what)?
4. Would need to create a sidepath along 49th Street east of I-29 and/or a wide curb lane or possibly a bike lane (at least a sharrow).
5. With 49th Street extension, look for room to develop sidepath further to Minnesota Avenue.

### **Route #9—Lake Lorraine/Southeast Technical Institute/S.D. Public University Campus**

1. Generally along Ebenezer and Career Avenues.
2. Could much of this be bike lanes?
3. Ebenezer Avenue between 18th and 12th Streets currently too narrow.
4. Ebenezer Avenue between 18th and 26th Streets still needs to be constructed (make sure it accommodates bicyclists).

### **Route #12—Hustrulid Park/Hayward School**

1. Beginning with connection at Songbird Circle.
2. Need sidepath along La Mesa Drive to Third Street.
3. Alternative: Connection to Ninth Street.
4. Alternative in future: Use Eastern and Ellis Railroad railbed.

### **Route #13—Trail Ridge/Prairie Green/Judee Estates**

1. Use Ralph Rogers Road.
2. Route ends at Minnesota Avenue. Continue the trail to the east by the following options:
  - a. Cross Minnesota Avenue at Ralph Rogers Road in some way and travel down St. Andrews Drive.
  - b. Develop a sidepath along Minnesota Avenue to the golf bridge underpass, then to Carmel Circle to St. Andrews Drive.





- c. Create a new bike trail through Prairie Tree drainageway beginning just east of Western Avenue and continuing through the golf course (how to share?), then cross underneath the golf course underpass and to Carmel Circle to St. Andrews Drive.
- 3. This route could begin at Minnesota Avenue, go along St. Andrews Drive to a cart path, and go on the north side of hole #6 tees. Probably not feasible unless they move the northern-most tee somewhat south, but then small connection to end of cul-de-sac of 61st Street.
- 4. The route would then go along 61st Street to Glenview Park and follow along a bike trail in the park to the north.
- 5. The route could also then go south along Lewis Avenue to Judee Park.
- 6. Routes #13 and #14 could be combined if a connection across Minnesota Avenue is safe.

**Route #15—Platinum Valley/Prairie Meadows**

- 1. This route starts north up Beal Avenue to 77th Street, then across to Kiwanis Avenue south to Bitterroot Street, then across Western Avenue up to Laquinta Street to Prairie Meadow Park.

- 2. As an alternative, this route can include a significant amount of bike trail, as will be included within the future bicycle trail master plan.
- 3. As another alternative, Bitterroot Street could be used west to Louise Avenue, but there is not a corresponding street on the other side. This route would be dependent on a signal there. (Is there one there now or will there ever be?)

**Route #16—Tomar Park/Prairie Trail**

- 1. This route begins at the bike path and then follows Locust Drive, then Plum Creek Road to Tomar Road.
- 2. Tomar Road will be extended south into new developments. What is the attraction/main destination in this area?

**Route #17—Laurel Oak/Morningside/Frank Olson/Kenny Anderson**

- 1. This route would take Bahnson Avenue from north to south side of the city of Sioux Falls.
- 2. One major break is at Tenth Street with the cemetery.
- 3. Suggested project to take a bike trail path from Bahnson Avenue and Tenth Street across the cemetery to Locust Avenue, then Locust Avenue to Bahnson Avenue again. The cemetery seemed very hesitant to do this, but perhaps with some safety considerations such as fences it would work.





### **Route #18—Richmond 4 (attraction?)/ Dawley Farm**

1. This route would take Dubuque Avenue, Sixth Street, then Highline Avenue to Arrowhead Parkway. Once across it would take the future bike trail through Dawley Farm south to 26th Street (along the highline under 26th Street)
2. There will be future connections to the County Park Trail and Copper Creek Trail.

### **Route #19—Sherman Park/McKenna Park/ Riverdale Park/Frank Olson Park**

1. This route would take a bike trail spur in Sherman Park to 22nd Street using Indian Mound Road to 22nd Street.
2. The route then goes along 22nd Street past Sioux Valley Hospital and USF.
3. After crossing Minnesota Avenue, it continues on 22nd Street until Phillips Avenue where it jogs north to 21st Street and continues east past McKenna Park to Seventh Avenue. It then goes north on Seventh Avenue to 17th Street across Cliff Avenue to River Boulevard. The segment of River Boulevard has no sidewalk and it is very narrow up to Southeastern Avenue. Two options:
  - a. Create a sidepath to Southeastern Avenue and make intersection with Southeastern Avenue safer, especially considering all the heavy right-turning traffic.

- b. Construct a bicycle lane path with reconstruction of River Boulevard (or at least a wide curb lane with a sharrows).
4. After crossing Southeastern Avenue, then continue on 18th Street until Dawley Farm.
5. This east-west route has great continuity, and in the future could become better with a bicycle/pedestrian bridge crossing the confluence of Skunk Creek and Big Sioux River.

### **Route #20—O’Gorman/Lincoln and Spencer Park**

1. This route would follow 37th Street from O’Gorman across Kiwanis Avenue to Minnesota Avenue. The route would then continue on 37th Street to Phillips Avenue, then jog south to 38th Street to Cliff Avenue.
2. With some work on the O’Gorman campus, a bicycle trail connection could be made at this location to complete the route.
3. At Cliff Avenue the trail could continue down Cliff Avenue, but presently must cross the street to a sidewalk on the east side of Cliff Avenue. A project to include a wide sidewalk with barrier on the west side of Cliff Avenue would add a safer passage to Spencer Park.







**Route #21—Downtown to Washington High School**

1. This route would follow Eighth street out of downtown, then Sixth Street over I-229, then become a sidepath along Sixth Street east of Cleveland Avenue to Sycamore Avenue. Then the route would continue on as on-street route to Dubuque Avenue to the east to connect to Route #18.

**Route #22—Yankton Trail Park to Covell Lake?**

(It would have to go down different route than Prairie then. Or make a sign to direct people: "Covell Lake 2 blocks.")



**Route #23—Tomar Park to Downtown**

**Route #24—Spencer Park to Harmodon Park**

**Future Routes**

Future routes are identified on the map and are generally major collector streets as identified by the Sioux Falls Major Street Plan.





# Appendix III

## *Sioux Falls Bicycle Plan Public Participation*

### **Step 1—Determine Participation Goals**

- Resolution of Issues and Policies.
- Ten Bicycle Committee meetings over the course of a year.

### **Step 2—Identify the Public to be Involved**

- Bicycle Committee resolved issues and policies—listing of those involved attached.
- Draft Plan available for all citizens' review.

### **Step 3—Select the Appropriate Participation Methods**

- Draft Bicycle Plan on the City of Sioux Falls website.
- Emails to Bicycle Committee to keep updated of plan progress.
- Public open house held at downtown library.
- Channel 16—Sioux Falls Bicycle Plan video.
- Informal email comments from public.
- Parks and Recreation Board review.
- MPO committees review.

### **Step 4—Employ Appropriate Public Notification Techniques**

- Press release for public open house was sent out to all Sioux Falls media outlets and bicycle committee members.
- Website posting of draft plan and requesting draft comments.
- Agenda distribution of MPO meetings.
- Channel 16 video request for comments.

### **Step 5—Implement the Appropriate Participation Methods**

- During ten bicycle committee meetings, the members of the committee provided ideas for bicycle policies and helped prioritize those policies, and provided input into new trail and routes facilities.
- Open house was held at night to allow the general public to attend.
- Information and display was provided at Bike to Work Day to inform interested bicyclists.
- The downtown library was chosen as the open house location for its central location.
- A visual summary of the plan was provided for participants through maps and photographs of proposed bicycle plan initiatives. Copies of the full plan were available for participants. A short presentation was provided.





### Step 6—Evaluate Effectiveness of the Participation Technique(s)

- Over the course of the bicycle committee meetings, many suggestions were provided that were incorporated into the plan, especially in regard to prioritization of the policies.
- The website has had the draft bicycle plan available for review for three months.
- Channel 16 has continued to run the bicycle plan video for the past three months.
- The Bicycle Committee has reviewed the plan.
- The Parks Board has reviewed the plan.
- “How many people attended the open house?” There were 40 (combined open house with Bicycle Trail Master Plan).
- Over 150 people attended Bike to Work Day festivities.
- Four email comments have been received.
- One press release was distributed in regard to the open house to all Sioux Falls media outlets.

*Do the citizens believe that their voice was heard and mattered?*

### Step 7—Incorporate the Results of the Participation

*How have the results changed the document?*

The bicycle committee input included below was then incorporated into the plan.

- Need more of a “complete streets” policy.
- Consider a regional approach to some extent. The question will be then, “How do we do that?” Maybe even two plans may be warranted.
- We need a list of trail safety concerns.
- “Is there enough access to the bike trail?” Suggested access points were added to the plan.
- “How do we encourage more bicycle parking facilities in Sioux Falls?” Bicycle parking standards were added to the plan.
- We need to change and add some bicycle routes. New bicycle routes were suggested for further study.
- We need better communication on bike trail construction. It should be a multi-faceted approach including news releases, consistency, [bikesiouxfalls.org](http://bikesiouxfalls.org) as a portal, advance signage (time and location).
- Consider adding a “soft shoulder” to areas where the trail is congested to allow walkers and runners room to get over and let bikes and Rollerblades pass.
- Put up “share the road signs” on selected roads.





- Sponsor “share the road” affinity license plates.
- Advocate for City staff bicycle coordinator.
- We need to start looking at what streets as connectors could be bike lanes.
- This was added as a part of the design considerations section.
- Change state law on hand signals to allow updated right turn signal.
- The committee liked the idea of bicycle lanes for some facilities where the roadway is wide enough and no parking lane is needed. The committee thought the plan should include a recommendation of facilities to include bicycle lanes with a pilot project.
- The committee liked the idea of investigating further the striping of some—or a portion of—the parking lanes along certain bicycle routes. The routes are where parking is not used extensively to create a visual separation between the cars and bicyclists/parking area. Again, a pilot project to try this may be an option if found to be acceptable.





**Bicycle Committee Members**

Bill Draeger  
Brian Westerhuis  
Chad Pickard  
Chris Curro  
Dawn Reinicke  
Greg Boris  
Gregg Johnson  
Jack Mallek  
Jason Simons  
Jodi Harkness  
Joyce Johnson  
Larry Hayes  
Leroy Story  
Marilyn Zimmerman  
Michael Christensen  
Paul Fuller  
Patrick Lalley  
Risty Maddox  
Chris Pierson  
Sean Gallup  
Vince Purtell

**City Staff**

Sam Trebilcock—Planning  
Shannon Ausen—Public Works  
Loren Beard—Parks  
Jeff Des Lauriers—Public Works  
Tory Miedema—Public Works  
Denny Pottebaum—Police

**City Council**

Vernon Brown



