3. Program Review & Recommendations

Many Moving Parts

Serving bicycle and pedestrian transportation involves many complementary actions and initiatives that include planning the system; funding, designing, constructing, and maintaining infrastructure; educating all users on traffic safety; encouraging people to bike and walk; enforcing traffic laws; and evaluating the success of these efforts.

There are numerous activities that occur as part of Iowa's bicycle and pedestrian program, many of which involve multiple Iowa DOT Bureaus and outside organizations. An example is Iowa's State Recreational Trails Program—the Local Systems Bureau manages the grant program and is often involved in reviewing contracts, local jurisdictions apply for grants and implement projects, and the Traffic and Safety Bureau often assists with implementing the projects. In practice, therefore, many organizations in addition to Iowa DOT are involved in and responsible for the various efforts that comprise Iowa's bicycle and pedestrian program.

This chapter is organized into three parts:

1. Agency and organization roles
2. Program assessment
3. Program recommendations

3.1 Agency and Organization Roles

Although it was developed by the Iowa DOT, this is a bicycle and pedestrian plan for the whole of Iowa. Cities, counties, Metropolitan Planning Organizations (MPOs), Regional Planning Affiliations (RPAs), the Iowa DOT, and the US Department of Transportation (USDOT) all have roles in planning, designing, constructing, and maintaining elements of the transportation system. Each also has a role in ensuring adequate bicycle and pedestrian accommodations are provided to improve access and connectivity.

This Plan is meant to guide the Iowa DOT's decision making, inform and influence local and regional agencies, and inspire the actions of advocates and non-profits. As such, the successful and effective implementation of this Plan depends on the support and actions of a variety of agencies and organizations.

US Department of Transportation

The USDOT supports bicycling and walking as integral parts of transportation systems. Many of its policies, guidance, and plans for bicycle and pedestrian transportation originate from its Federal Highway Administration (FHWA) arm. Several of the federal policies pertaining to bicycling and walking were discussed in Chapter 1. This includes FHWA's "mainstreaming policy," which requires the consideration of bicycling and walking to be integral to transportation planning and engineering processes. This position was further reinforced in 2010, when the USDOT stated that walking and bicycling should be considered as equals with other transportation modes and that adequate accommodations should be provided for people of all ages and abilities, especially children. The primary responsibilities of the USDOT and FHWA in the implementation of this Plan include:

- Implementing its policies pertaining to walking and bicycling (including the "mainstreaming policy") requiring that all projects in which federal funding is utilized (including local projects) consider accommodations for bicycling and walking based on the surrounding context.
- Leveraging FHWA Division Offices to ensure that USDOT and FHWA policies pertaining to mainstreaming bicycle and pedestrian transportation are being followed at the state level.

USDOT launched the "Safer People, Safer Streets Initiative" in early 2015. Over the course of a year and a half, the USDOT increased its work to address non-motorized safety issues and help communities create safer, better-connected bicycling and walking networks. USDOT rolled out a variety of new resources, issued new research, and highlighted existing tools for a range of transportation professionals. They engaged safety experts, existing and new stakeholders, local officials, and the public on a range of targeted strategies to help get these materials into use and encourage safety in and around streets, including bus stops, transit stations, and other multi-modal connections.

As part of the "Safer People, Safer Streets Initiative" the USDOT field offices convened transportation agencies to conduct road safety assessments in every state. They also launched a Mayors' Challenge for Safer People and Safer Streets and worked with stakeholders to identify and remove barriers to improving non-motorized safety.

The Initiative focused on four areas:

1. Bicycle and Pedestrian Trends
2. Walking and Biking Support National Goals
3. USDOT Responsibility
4. Responsibility of States and Local Transportation and Enforcement Agencies

More information can be found by viewing the "Safer People, Safer Streets Initiative" site at: https://www.transportation.gov/safer-people-safer-streets.

Iowa DOT

The Iowa DOT has the leading role in implementing this Plan on a statewide level and has direct responsibility for including bicycle and pedestrian facilities on state highways and providing technical and planning assistance to city, county, and regional units of government. Not only must it modify its practices and policies to mainstream biking and walking into the state highway transportation system, the Iowa DOT must also support and encourage cities, counties, and regional agencies to enhance bicycling and walking conditions on the local and regional levels. The primary responsibilities of the Iowa DOT regarding bicycle and pedestrian transportation include:

- **Federal policies**—Adopt and incorporate FHWA's "mainstreaming policy" and other federal policies pertaining to bicycle and pedestrian transportation into the Department's planning, funding, and design policies and practices.
- **State highways**—Enhance the state highway system to accommodate bicycling and walking in rural areas and within cities and metro areas by improving and increasing crossings and facilitating linear access. The Complete Streets Policy (see Chapter 6) reinforces this role and calls for the planning and design of bicycle and pedestrian accommodations on urban and suburban segments of state highways unless there are circumstances that make their inclusion unreasonable.
- **Local/regional support and assistance**—Encourage and support implementation by other units of government by providing technical assistance and training for the planning, design, construction, and maintenance of safe and comfortable bicycle and pedestrian infrastructure and encouraging cities, counties, and regional agencies to adopt Complete Streets policies.
- **Funding**—Ensure that state and federal funding is being effectively used to improve walking and biking in Iowa by coordinating and supporting the inclusion of bicycle and pedestrian accommodations on local projects when state and/or federal funds are used, adopting project selection criteria to identify the most beneficial projects, and assisting regional agencies in creative solutions for utilizing Transportation Block Grant-TA funding for its intended purposes.

- **Education and safety**—Partner with the Governor's Traffic Safety Bureau (GTSB) to provide education for all users on traffic laws and the rights of bicyclists and pedestrians through driver's education curriculum, public relations campaigns, and other avenues.
- **Statewide networks**—Develop and enhance coordination between the many agencies involved with developing a statewide network of trails and on-road bikeways.
- **Implementation performance**—Continually monitor implementation (via performance and input measures) to gauge the effectiveness of actions, including expanding programs to count or estimate bicycle and pedestrian use.

In practice, Iowa DOT's bicycle and pedestrian program is loosely organized across various offices and locations. Staff members that are part of the program can be divided into two categories:

1. Staff whose primary responsibilities include bicycle and pedestrian issues. These staff members are located within the Systems Planning Bureau (Bicycle and Pedestrian Planning Coordinator, Planning Team Leader), and Local Systems Bureau (Grant Programs Team Leader, State and Federal Recreational Trails Program Manager, Transportation Alternatives Program Manager, and multiple staff who focus on ADA issues), and the Design Bureau.
2. Staff members in the Design Bureau, Bridges and Structures Bureau, and District Offices who set standards and design streets and roads that contain bicycle and pedestrian accommodations, as well as multi-use trail projects. Although staff members are spread amongst multiple offices, project stakeholders consider Iowa to have a coherent bicycle and pedestrian program.

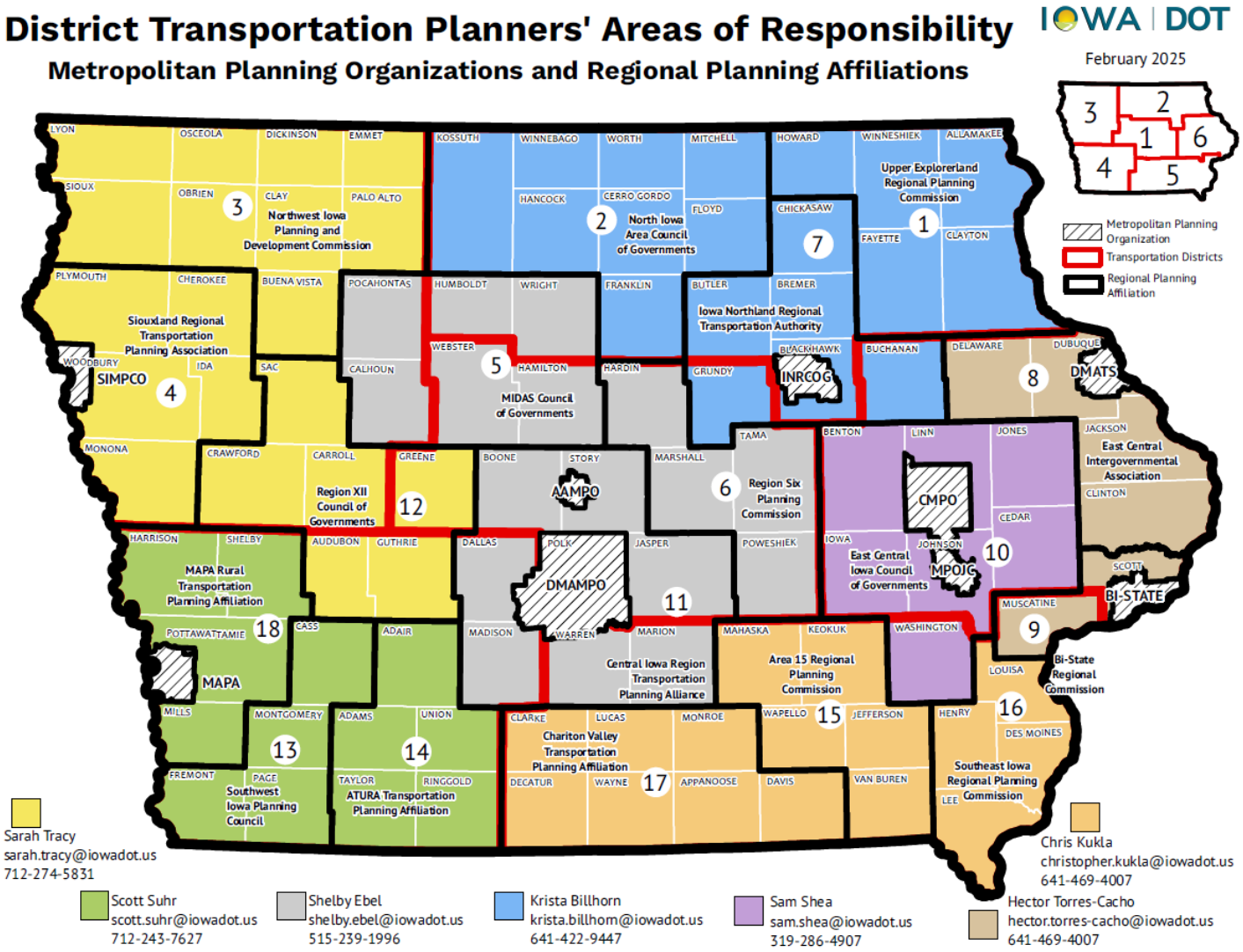
MPOs and RPAs

MPOs and RPAs are responsible for planning regional mobility improvements. This includes identifying priority transportation projects to be included in each agency's four-year Transportation Improvement Program (TIP) and allocating Transportation Alternatives Program (TA set-aside or TAP) funding for projects. These agencies are also responsible for distributing TA set-aside or TAP funding within their regions. There are four primary areas where MPOs and RPAs can help prioritize bicycle and pedestrian mobility:

- **Regional network plans**—Develop and regularly update regional bicycle and pedestrian plans that identify key needs and facilitate coordination between jurisdictions.
- **Regional priorities**—Prioritize funding to maximize benefits to all modes, including using prioritization methods for distributing TAP funds based on the ability of projects to improve bicycle and pedestrian access and safety.
- **Agency coordination**—Serve as a technical resource to communities and liaison to the Iowa DOT to ensure that the planning and design of bicycle and pedestrian infrastructure is coordinated and consistent across the state.
- **Creative funding solutions**—Optimize the amount of funding allocated to bicycle and pedestrian projects, including the STBG program and the STBG-TA set-aside. Small agencies especially should be open to creative ways to bank TA Flex funds or otherwise make use of TA Flex funding for its intended purpose.

MPOs and RPAs will play a vital role during the ongoing implementation of this Plan. Going forward, these organizations are encouraged to adopt regional Complete Streets policies that serve to prioritize transportation funding for projects that enhance mobility for all modes, not just motor vehicles.

Figure 3.1: Iowa DOT Districts and Locations of MPOs and RPAs



List of Metropolitan Planning Organizations (MPOs)

AAMPO: Ames Area MPO

BI-STATE: Bi-State Regional Commission (Davenport/Quad Cities)

CMPO: Corridor MPO (Cedar Rapids area)

DMAMPO: Des Moines Area MPO

DMATS: Dubuque Metropolitan Area Transportation Study

INRCOG: Iowa Northland Regional Council of Governments (Waterloo area)

MAPA: Metropolitan Area Planning Agency (Council Bluffs/Omaha area)

MPOJC: MPO of Johnson County (Iowa City area)

SIMPCO: Siouxland Metropolitan Planning Council (Sioux City area)

Counties

Counties are the primary agencies responsible for ensuring that Iowa's transportation system provides local access in rural areas. They are responsible for planning, designing, constructing, and maintaining thousands of miles of paved and unpaved rural roads that are not part of the state highway system. Therefore, these units of government are also responsible for providing and maintaining adequate bicycle and pedestrian accommodations along roads, especially in areas surrounding but outside of incorporated cities. All counties in Iowa receive funding from the state for transportation projects, but also use revenue generated primarily by property taxes. Therefore, the Iowa DOT and the state as a whole has an interest in seeing state and federal funding being used to provide bicycle and pedestrian infrastructure in compliance with state and federal policy.

Counties will play an important part in implementing this Plan, although the level of investment required of counties will likely be less than for other units of government. Namely, their implementation roles can include:

- **Provide accommodations**—Ensure that county road projects consider accommodations for bicyclists and pedestrians. Most county roads in Iowa have such low traffic that only wayfinding signs may be necessary.
- **Paved shoulders on high-traffic roads**—Identify the need for paved shoulders along county roads with high levels of actual or potential bicycle use and coordinate with regional agencies and nearby cities to develop funding strategies.
- **Maintenance**—Maintain roadway surfaces and strive to prioritize maintenance on roads that have high levels of actual or potential bicycle use (as identified by local or regional bicycle network plans).

Moving forward, counties are encouraged to adopt Complete Streets policies or follow the Complete Streets approach. Regardless of funding sources for projects, counties should plan and design roadway projects with the clear assumption that bicyclists (and often pedestrians) will be using them. Context is important and needs to be considered; for example, county roads outside of urban areas will rarely need sidewalks while roads/streets passing through unincorporated but developed areas may warrant sidewalks. The use of state and/or federal funds on a county project increases the importance that bicycle and pedestrian facilities are included in the project.

Cities

By length, city streets comprise approximately one-third of Iowa's paved streets and roads. Although municipalities receive some state aid for local street projects, locally generated revenue (e.g., property taxes) fund a considerable portion of city street projects. Furthermore, most biking and walking trips originate or occur within cities and the vast majority of crashes involving bicyclists and pedestrians occur within cities and metro areas. Municipalities therefore play a major role in making Iowa better for bicycling and walking. Here are a few areas where municipalities can help in implementing this Plan:

- **Local network plans**—Plan citywide bicycle and pedestrian networks to identify key cross-town routes, routes that connect to neighboring cities and/or regional bicycle and pedestrian networks, and infrastructure needs along arterial and collector streets as well as high-activity areas, such as downtowns.
- **Parking**—Provide or facilitate the provision of adequate bicycle parking (in terms of quantity and design) to accommodate and encourage bicycle use.
- **Encouragement and education**—Partner with advocates and community groups to sponsor bike to work and walk to workdays; bike rallies, ciclovías, and other special events; and education opportunities.
- **Legislation**—Adopt local ordinances that protect vulnerable road users, by requiring motor vehicles to provide adequate clearance when passing a bicyclist, pedestrian, construction worker, public safety officer, agricultural vehicle, etc.

Cities should use a two-pronged approach to bicycle and pedestrian planning:

1. **Community-wide planning**—The development of a comprehensive bicycle and pedestrian plan can lead to a number of implementation strategies with short, moderate, and long-term staging of key projects. These plans almost always include recommended bicycle and pedestrian networks and identify key gaps that need to be closed. They also often include a series of non-facility related recommendations (e.g., policies, education programs, bike route maps, enforcement strategies, etc.).
2. **Adopt a Complete Streets policy or follow the Complete Streets approach**—Regardless of funding sources for projects, cities should plan and design street projects with the clear assumption that bicyclists and pedestrians will be using them. The use of state and/or federal funds on a city or county project increases the importance that bicycle and pedestrian facilities are included in the project.

Ciclovias

Ciclovias are temporary closing of streets to automotive traffic to allow people to walk and bike freely. These events often take on the quality of a community celebration and can be organized as stand-alone events, or as part of existing events or festivals. *Ciclovías* can provide a great opportunity for people to get out and discover what it is like to bike and walk in their community. Most importantly, they demonstrate to participants the possibilities associated with walking and biking and hopefully entice people to continue biking and walking after these special events.

Advocacy Organizations

Advocacy groups represent the people walking and bicycling on Iowa's transportation system. As is common across the country, Iowa's advocacy groups primarily focus on bicycling while pedestrian advocates are uncommon. However, an emerging trend is for bicycling groups to join with pedestrian advocates to promote Complete Streets and the needs of all transportation users. The roles for advocates in implementing this Plan are:

- **Encouragement**—Support and encourage people to walk and bike for transportation and recreation purposes, participating in bike to work and walk to work events, holding bike rallies and other events, and providing education opportunities for the community.
- **Political involvement**—Communicate to local, state, and national elected officials the importance of laws that protect vulnerable road users and funding for improving infrastructure for bicycling and walking. Encouraging legislation and supporting elected officials that promote biking and walking.
- **Partnerships**—Support the efforts of cities, counties, and regional agencies by attending public meetings, providing insight into infrastructure needs, and speaking on behalf of bicyclists and pedestrians.
- **Recognition**—Encourage and assist communities and businesses in making improvements for bicyclists and pedestrians and applying to receive recognition by the Bicycle Friendly Community, Walk Friendly Community, and Bike Friendly Business programs.

3.2 Bicycle Friendly State Program

The League of American Bicyclists (LAB) is the nation's oldest bicycle advocacy organization, founded in 1880. LAB has programs that recognize bicycle-friendly communities, businesses, universities, and states.

The LAB's Bicycle Friendly State (BFS) program began in 2008 and ranks all 50 states based on publicly available data and a survey completed by state Departments of Transportation and/or state bicycle advocacy organizations. The 2024 BFS survey asks for the following items:

Program Assessment

Iowa's bicycle and pedestrian program was assessed by analyzing feedback from outside observers (the Bicycle Friendly State program), processing input from internal and external stakeholders, and a thorough review of Iowa DOT's project development process and design practices.

- Analysis of Transportation Alternative Set-Aside Reporting.
- Analysis of state statutory speed limits and local authority to set lower speed limits.
- Is there an active statewide bicycle or pedestrian advocacy group?
- Does your state define a safe passing distance for motorists overtaking bicyclists?
- Does your state have a complete streets policy?
- Does the state have a statewide bike plan and/or a combined bike and pedestrian plan that was adopted within 10 years?
- Has your state DOT set a target to reduce vulnerable road user fatalities and serious injuries?
- Analysis of people who bike.
- Analysis of bicyclist fatalities.

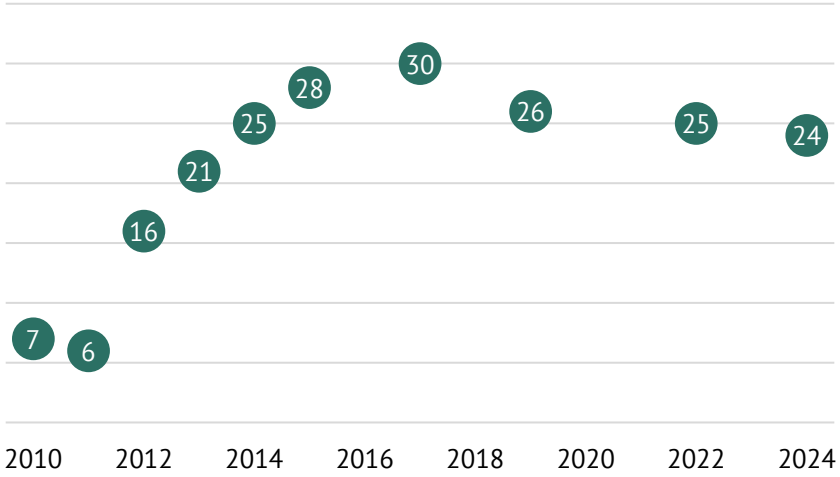
Based on the survey responses, the BFS program provides a national ranking for each state and a separate ranking based on its standing within its region. This provides good insight into the strengths and areas for improvement compared to programs in other states. The LAB also produces "report cards" for each state. Each report card includes feedback on how to improve the state's bicycle-friendliness, a written description of a state's status based on the survey, and five "Bicycle Friendly Actions" the LAB believes every state should take.

Iowa's Report Card

The ranking is calculated using the state's scores in each of the following five categories: Infrastructure and Funding, Education and Enforcement, Traffic Laws and Practices, Policies and Programs, and Evaluation and Planning. The LAB also uses discretionary scoring (10 percent) to account for erroneous survey data, missing data, and factors difficult to fit in the above categories.

In 2024, Iowa was ranked #24 in the country and #7 (out of 13 states) in the Midwest (Minnesota, Michigan, Illinois, Ohio, Indiana, and Kansas—in that order—outranked Iowa in the Midwest region). Historic rankings are shown in Figure 3.2. Changes in rankings are largely due to advances made in other states and changes to the five categories, survey questions, and the survey scoring rubric that have occurred throughout the program's history

Figure 3.2: Bicycle Friendly State historic rankings for Iowa



Iowa's Report Card rankings are shown in Table 3.1. The Bicycle Friendly Actions included on the report card are to develop a Complete Streets policy, safe passing law, statewide bike plan, and bicycle safety emphasis area, as well as spending two percent or more of federal transportation money on biking and walking. These are further described in the Feedback portion of the report card.

Table 3.1: Report card rankings (2024)

Category	Rank
Funding	3rd
Infrastructure	3rd
Laws	45th
Policies	35th
Capacity & Support	22nd
Safety	41st
Every Ride Counts	18th

These actions include metrics that LAB believes will improve the safety, comfort, and accessibility of bicycling in Iowa. In prior versions of the Bicycle Friendly State program these Actions were referred to as "Signs of Success."

Table 3.2: 2024 Bicycle friendly actions

Bicycle Friendly Actions	Progress
Complete Streets Law/Policy	Yes
Safe Passing Law (3 ft+)	No
Statewide bike plan in last 10 years	Yes
2% or more federal funds on bike/ped	Yes
Bicycle Safety Emphasis Area	Yes

Specific Feedback

LAB feedback specific to Iowa includes the following recommendations, many of which are wholly or partially addressed by the adoption of this plan:

"Iowa has adopted a Complete Streets policy, which ensures that improvements for bicyclists are made during resurfacing, restoration, and rehabilitation projects. This is often the most cost-effective time to make improvements."

"Adopt a safe passing law with a minimum distance of three feet to address bicyclist safety."

Iowa has a law (IAC 321.281) that prohibits motorists from steering "unreasonably close to or toward a person riding a bicycle." While it does pertain, this law is not specific to passing. It is supplemented by another law (IAC 321.299), which requires passing at a "safe" (yet undefined) distance when one vehicle overtakes another vehicle. A 2012 opinion from the Iowa Attorney General's office states that this law applies to overtaking a bicyclist (this is supported by IAC 321.234, which states that bicycles have the same rights and responsibilities as motorists in Iowa). There have been a number of Senate and Assembly bills in the last few years that have attempted to pass a defined-distance safe passing law.

"Spend at least two percent of federal transportation funds on biking and walking improvements."

Iowa is not spending a significant amount of federal funds on stand-alone bicycle and pedestrian projects. This is partially due to TAP Flex funding being transferred to STBG funds by MPOs and RPAs. More significantly, the state is not spending any significant amount on accommodations provided as parts of larger projects—therefore, HSIP, CMAQ, NHPP, and STBG funds are not often utilized for accommodations.

"Adopt a law prohibiting a motorist from opening an automobile's door unless the motorist is able to do so safely. Iowa is one of only eight states that has not adopted this type of law to reduce "dooring."

Iowa does not have any such law, but the Drivers Manual does encourage motorists to exercise caution when opening their door.

"The League is excited to congratulate the Iowa DOT for adopting rumble strip standards and creating a prioritization process for rumble strips and shoulders in its Complete Streets process. This is a great improvement, and we hope other states learn from it as well."

Additional information regarding the LAB ranking of the State of Iowa can be found at the LAB web site at https://www.bikeleague.org.

3.3 Interviews with Internal and External Stakeholders

In order to gain a broad perspective of Iowa DOT's Bicycle and Pedestrian Program, 12 interviews were held with numerous DOT staff (seven of the interviews) and individuals outside of the DOT (five interviews including MPO staff, a county engineer, the Governor's Traffic Safety Bureau of the Department of Public Safety, and the Iowa Bicycle Coalition). Each interview took 30 to 60 minutes to conduct, depending on the length of each interviewee's responses. The same questions were asked during each interview (see Figure 3.3) but in many cases additional discussion occurred outside of the scripted interview questions. The additional discussion was unique to the interviewee based on the nature of their relationship with the DOT.

Overall, two major themes stand out from the interviews:

1. Most of the interviewees agree that the lack of funding or lack of flexibility in funding is the primary challenge for improving bicycling and walking conditions in Iowa. The lack of funding is also an indication of a reactive approach to bicycle and pedestrian accommodation.
2. Interviewees are generally positive about the bicycle and pedestrian program, citing the Iowa DOT's efforts to improve guidance, strive for multi-modalism, and partner with other organizations as positive steps.

Taken together, these two themes suggest that the Iowa DOT is successful in its existing programs that serve bicyclists and pedestrians. However, there are several sub-themes that support the finding that the DOT is not currently doing all that is needed (providing adequate staff resources for technical assistance for bicycle and pedestrian projects, adopting effective policies for the provision and design of accommodations, ensuring consistency between District Offices and between state, regional, and local efforts, etc.).

Figure 3.3: Interview questionnaire

Defining the Relationship

1. Briefly describe your job or position emphasizing those parts which have brought you in contact with the Iowa bicycle and pedestrian program?
2. We would like to know more about your relationship with the DOT. With what function of the DOT are you most in contact?
3. Do you work with or are you associated with another group or state agency providing a bicycle and pedestrian service? Please tell us which ones.
4. Do you have a daily, weekly, or monthly contact with the DOT with respect to bike and pedestrian services?

Evaluating the Relationship

5. Do you consider the DOT bicycle and pedestrian program to be in a reactive or proactive mode?
6. Please indicate your level of satisfaction with DOT's handling of bicycle and pedestrian program using a 1 to 10 scale with 10 being best. If associated with more than one aspect of the program, please feel free to provide individual scores.
7. What should DOT's top program priority be?

Discussion of Potential Changes

8. What are the greatest challenges and opportunities for improving bicycle and pedestrian accommodation in Iowa?
9. Do you think bicycling and walking should be accommodated in all practical situations or should there be some qualifier/threshold?
10. Can the planning and design of bicycle and pedestrian accommodations be improved with respect to central office and district office coordination? Is there an increased role for the central office? District office? Fine as is?
11. Which practices/policies should be modified to facilitate accommodation? How should they be changed?
12. Explain how project scoping and design is affected by bicycle and pedestrian issues. What about ADA?
13. What enforcement, education, evaluation, or encouragement efforts should occur in Iowa and who should take the lead?
14. What do you think is the best untapped source of funding for bicycle and pedestrian projects?
15. What are the top two or three things this plan should accomplish in order to be successful in your mind?

3.4 Project Development Process Review

Successful implementation of bicycle and pedestrian accommodations into the transportation system is dependent on the process by which accommodations are selected, designed, and constructed. Far too often, bicycle and pedestrian accommodations are not included in street and road projects or are added as an afterthought. This often results in inadequate accommodations for the context, or a lack of accommodations altogether. The project scoping process is the critical stage in the development of transportation infrastructure when it is determined whether and how bicycle and pedestrian accommodations are included.

Process Overview

The Iowa DOT project development process for new and reconstruction projects is based on a scripted list of events, leading to the eventual bid letting and construction of the project. While the DOT does not have a unified, stand-alone procedural manual or document to guide the scoping process for projects, there are several sections in the Design Bureau's Design Manual that provide guidance for the scoping of road design projects. The scoping process typically takes two to six months and occurs two to 10 years before ribbon-cutting, depending on the complexity, funding availability, and scale of the project. Scoping for projects generally follows this process:

Draft Project Concept Statement

The process starts with the initial development of the Project Concept Statement, which can be led by several groups, including District Staff or staff from the Design or Bridges and Structures Bureaus. The Iowa DOT uses a "shell" document that provides the basis for the concept statement letter. The shell includes guidance paragraphs and lists typical topics that need to be addressed. Consultants also assist with the concept development phase of projects.

Project needs are identified from many sources, and are often planned and programmed with very basic, heuristic cost data. Today, most projects are envisioned by District Staff, since they have the most knowledge of the transportation and improvement needs of their respective Districts. The concept development process takes a contemplated project, defines the issues to be solved by the project (sometimes identifying outstanding bicycle and pedestrian needs), establishes the criteria that will be used to design the project, and sets the overall direction.

Design Criteria Worksheets

An important tool used early in the process is the Design Criteria Worksheet (Design Manual Chapter 1 Section 1C-1). A unique worksheet exists for each type of project (rural two-lane highway, urban multi-lane roadway, rural expressway, etc.). The worksheets assist the designer in choosing lane widths, design speed, maximum grade, etc. These worksheets present the first opportunity where bicycle and pedestrian accommodations could be added to a project. Currently, the worksheets only include preferred and acceptable paved shoulder widths for roads where bicyclists are to be accommodated. Sidewalks or sidepaths within the typical cross section are not mentioned. They do not provide any guidance as to whether accommodations should be included, nor is there any requirement to justify the omission of accommodations.

Project Management Team and Jurisdictional Coordination

After the development of the Design Criteria Worksheet, there is typically a significant amount of thought and work put toward refining the project concept. This effort often involves an assigned Project Management Team (PMT), which is assembled to include personnel with either the appropriate technical expertise or authority to set the direction of the project.

The PMT considers the project improvement needs and goals, the criteria suggested by the worksheets, and the context of the project environs. Local jurisdictions and other affected stakeholders are consulted at this point in the concept development. Currently, this is the only opportunity for a local entity to identify a desire to include a bike or pedestrian improvement during the concept process.

Typical Roadway Sections

Typical Roadway Sections (Design Manual Chapter 3 Section 3A-1) are available for each type of project. After completing the Design Criteria Worksheet and the PMT refines the project concept, the designer develops a "project typical section" that coordinates with the selections in the Design Criteria Worksheet. The project typical section is the basis for the ultimate design of the project. It should include any accommodations for bicycles and/or pedestrians that are to exist within the right-of-way.

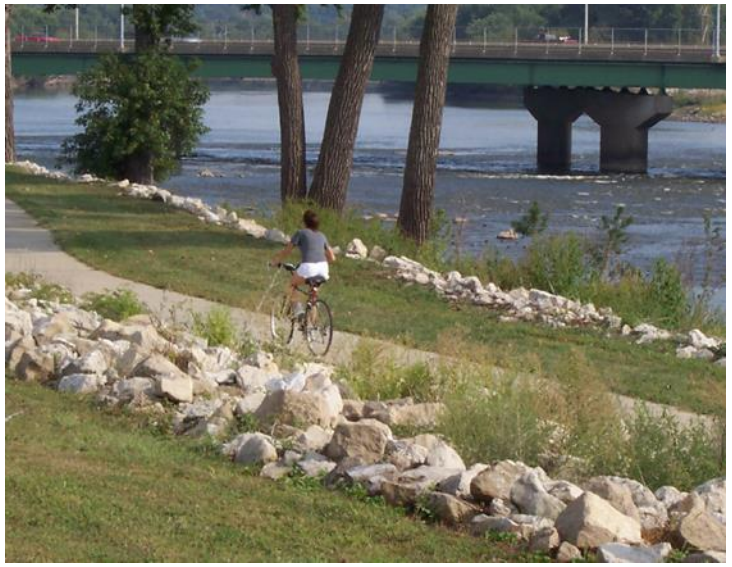
Final Project Concept Statement

The work of the PMT and project designer culminates in a variety of developed data that could include study reports; map exhibits; plan and profile sheets; bridge type, size, and location (TSL) drawings; and design correspondence. This data is summarized in the revised Project Concept Statement. At this point, the project designer and the District Engineer or Assistant District Engineer must document any variances from the DOT's guidelines. Relevant guidelines are listed in the Design Manual Chapter 1 Section 1C-8. The documentation must identify the design exception, provide supporting information for the exception, identify mitigating measures, and justify the need for the exception. No accommodation or complete streets policies or guidance are listed in this Design Manual section, meaning that justification or explanation for not accommodating bicycling/walking on a project is not required.

Once finalized, the Project Concept Statement is circulated to an established list of personnel for review and comment. This represents the last opportunity for the inclusion of pedestrian and bicycle accommodations within the concept phase. Once comments are addressed and the Project Concept Statement is finalized, the project may move forward to the preliminary design process.

Process Analysis

The current scoping process falls short in that it does not include any requirements to consider (and include or rule out) bicycle and pedestrian accommodations or complete streets approaches during the scoping process. Namely, it does not reference the need to consult Iowa DOT's 1999 Bicycle and Pedestrian Accommodation policy, which provides direction for considering the needs of bicyclists and pedestrians during primary highway construction projects. This policy was updated in 2004 to include a method to justify further bicycle accommodation on primary highways and guidelines to determine types of accommodations and cost sharing. This guidance is also not usually electively consulted, since it does not have the necessary degree of clarity and specificity for designers to make rational decisions.



Instead, the way in which accommodations or complete streets elements become incorporated into projects is that someone taking part in the scoping process identifies the need. This need typically must be consistent with an existing plan, or otherwise be justified with evidence of the need for accommodation. In most situations, it is someone from a local partner agency that identifies these needs, since bicycle and pedestrian accommodations (other than federally mandated ADA compliancy activities) have not traditionally been emphasized on highway projects. In these situations, Iowa DOT has often asked local agencies to partially or fully fund the accommodation.

This presents a strong opportunity for a policy change to make a substantial difference on the inclusion of bicycle and pedestrian accommodations on Iowa DOT projects. The local cost share requirement often eliminates accommodations from projects, since the local funding requested may not be available within the time parameters of the project, or even affordable by the local government. Local entities are often unprepared to commit, or are not in touch with their local constituency that may desire the accommodation.

Public and Stakeholder Involvement

Public and stakeholder involvement is an important part of the project development process, although past public engagement efforts (such as a recently completed Planning and Environmental Linkages (PEL) study or Environmental Impact Statement (EIS) for the corridor) may reduce the level of engagement necessary.

The typical public engagement approach is to provide early information about the project on Iowa DOT's website, hold one or more public meetings during the scoping and conceptual design phase, and present the proposed scope of the project at a later public meeting or online.

As a result, project development often continues without the inclusion of accommodations, potentially precluding bicyclists and pedestrians from using the roadway once the project is completed.

Process Recommendations

To adequately implement the Complete Streets Policy, the Iowa DOT's project scoping process must be modified to mainstream bicycle and pedestrian accommodations. The following recommendations were developed to modify the Iowa DOT's project development process to ensure effective implementation of the Complete Streets Policy. However, cities and counties can benefit as well by incorporating elements of these recommendations into their project development processes.

Draft Project Concept Statement

The shell letters should be modified to require the designer to specifically state expectations for accommodating bicyclists and pedestrians through the project, including whether local or regional plans call for any specific accommodations along or across the project. During this phase of the process, the designer should also note and record the On-Road Bicycle Compatibility Rating (see Section 4.2) for each segment of the project. If the rating is "poor" or "moderate," efforts should be made to improve conditions.

Design Criteria Worksheets

Modify the Design Criteria Worksheets (Design Manual Chapter 1 Section 1C-1) so that they default to including accommodations (sidewalks and bike lanes in urban areas and paved shoulders in rural areas). This may involve adding a line item with preferred and acceptable values for sidewalk width, modifying the acceptable paved shoulder width (specific widths are discussed in further detail later in this chapter), and adding provisions for bike lanes to the urban worksheets.

Project Management Team and Jurisdictional Coordination

When assembling the scoping team, appoint one person who will represent bicycle and pedestrian interests and ensure accommodations are adequately considered. This could be the District Planner, another staff member from the District, or someone from Central Office.

Typical Roadway Sections

Modify the Typical Roadway Sections (Design Manual Chapter 3 Section 3A-1) so that they default to including accommodations based on context. The changes should be studied further, but will generally include:

- Adding 5-foot wide sidewalks to each urban typical section;
- Adding 5-foot wide bike lanes to each 2-lane urban typical section and both 4-lane undivided urban typical sections; and
- Ensuring each variation of the 2-lane rural typical section (such as 2-lane highway with a right turn lane) includes 4-foot wide paved shoulders.

Final Project Concept Statement

Modify the design decision documentation requirements of this section (Design Manual Chapter 1 Section 1C-8) to include the Bicycle and Pedestrian Facility Selection Guide (see Chapter 5) and the Complete Streets Policy (specifically Section 2: Exemptions) to the list of guidelines requiring justification and documentation of variances.

Potential Challenges Posed by Functionally Obsolete Bridges

Including bicycle accommodations on a more regular basis means that more reconstruction and repaving projects will include the addition of bike lanes or paved shoulders wide enough for bicycle use. These projects do not always include new bridges, however, and it is therefore highly likely that there will be inconsistent shoulder widths between existing bridges and new road sections. This will result in bicyclists leaving the shoulder and entering the travel lane in order to cross substandard bridges (warning signs are recommended in these instances). From a safety perspective, it is undesirable for a bicycle facility to be discontinuous in this manner. However, compared to other types of bicyclists, those that ride longer distances in rural areas are typically better prepared to mix with motor vehicle traffic and ride within the travel lane, especially across short bridges on lower-volume roads. This is a distinctly different situation than a trail or shared use path approaching a bridge without dedicated accommodations, in which case bridge modifications or a separate bicycle/pedestrian bridge would be required.

Resurfacing, Restoration, or Rehabilitation (3R) Projects

3R activities are valuable ways to extend the life of rural and urban roadways in a cost-effective manner. They consist of three types of projects:

- **Resurfacing**—Adding additional pavement or overlays that result in less than a 4" increase to the pavement thickness. These projects may include small areas of reconstruction, but generally do not require additional right-of-way.
- **Restoration**—Adding additional pavement that results in more than a 4" increase to the pavement thickness. These projects may include small areas of reconstruction as well as pavement widening and sometimes require additional right-of-way.
- **Rehabilitation**—Reconstructing intersections, widening or replacing pavement, adding shoulders, and improving drainage to improve traffic flow and safety. These projects sometimes require additional right-of-way.

Federal-aid 3R projects require consideration of safety improvements. This includes reviewing culverts, bridges, and other objects within clear zones; providing traffic control devices in accordance with the MUTCD; and analyzing recent crash data. For all federal-aid 3R projects, the addition of shoulders is required, but there is not a requirement for any portion of the shoulders to be paved.

3R projects typically require pavement markings to be reapplied. This represents an opportunity to provide bike lanes or other on-road bicycle facilities where adequate pavement width exists or is added.

The 3R program functions differently from the standard scoping process for new/reconstruction projects. Specifically, it is a much faster process and typically revolves around a one-year plan and budget. Each Iowa DOT District develops and designs its own 3R projects each year. A project concept statement is developed for each, and Local Partner Agencies (LPAs) are often involved.

Many LPAs initiate 3R projects. In these cases, the scoping, design, and programming processes are managed by the Iowa DOT Local Systems Bureau and are outlined in Instructional Memorandums to Local Public Agencies and the Federal-Aid Project Development Guide. Instructional Memorandum No. 3.214 outlines 3R project requirements.

3R projects are opportunities for including on-road bicycle accommodations. Since they typically involve the reapplication of pavement markings or shoulder widening, it is important that 3R projects include accommodations for bicyclists and pedestrians when possible. This may include striping bike lanes or paved shoulders where excess pavement is available, providing additional pavement width when a road is being widened, or marking high-visibility crosswalks. Due to the sheer volume of 3R projects each year, the fact that each Iowa DOT District develops and designs its own 3R projects, and the lesser degree of LPA and public involvement, ensuring compliancy will be more challenging. However, some Districts are already in the practice of adding 4-foot wide paved shoulders as part of 3R projects.

3.5 Summary of Program Opportunities and Challenges

Overall, the analysis finds that many of Iowa DOT's existing official programs (grant programs, coordination with MPOs/RPAs, etc.) are functioning well and that those individuals whose primary job responsibilities include bicycle and pedestrian issues (the Bicycle and Pedestrian Coordinator, Planning Team Leader, Grant Programs Team Leader, Transportation Alternatives Program Manager, State and Federal Recreational Trails Program Manager, and ADA staff in the Local Systems Bureau) are performing their jobs effectively.

However, the Iowa DOT has three primary challenges regarding its approach to bicycle and pedestrian accommodation:

1. **Project scoping**—ensuring that bicycle and pedestrian accommodations are considered during the scoping process;
2. **Project design**—ensuring the design of accommodations is adequate and consistent across the state; and
3. **Project funding**—ensuring adequate funding is available and that accommodations for bicyclists and pedestrians are funded as promptly and fully as are facilities for other transportation modes.

These challenges are interrelated and pertain to issues of coordination between Central Office and District Offices, lack of clear policy and guidance, and lack of motivation or ability to adequately fund bicycle and pedestrian accommodations.

3.6 Program Recommendations

Making Iowa a better place for walking and bicycling (thereby achieving the vision and goals of this Plan set forth in Chapter 2) requires changes to the programs, practices, and policies of the Iowa DOT as well as each regional, county, and municipal agency, all of which are involved in planning, designing, building, and maintaining Iowa's transportation system. Policies adopted and enacted by the Iowa DOT and other agencies serve as the foundation of such a change. This chapter outlines a comprehensive set of policy recommendations intended to guide decision-making, enhance design and planning practices, and facilitate the expansion of intercity and intracity bicycle and pedestrian networks.

The following policy recommendations are intended to be comprehensive to address identified challenges and issues uncovered during the development of this Plan based on stakeholder input, staff experience, and an analysis of practices and policies in Iowa. Many of these policies will fall under the purview of the Iowa DOT, but some do not. These policies are intended to be comprehensive and far-reaching, even if they go beyond the Iowa DOT's purview—for some of the following policies, municipalities, counties, or MPOs and RPAs will be the primary responsible parties.

Policies and Practices

1.1 Adopt and implement the Complete Streets Policy that applies to all Iowa DOT projects.

The term "Complete Streets" refers to the practice of considering the needs of and accommodating all modes of transportation (including bicycling and walking) on every road and street. Complete Streets is a process, not a specific outcome, and is therefore sensitive to the context in which the project occurs. For example, a low to moderate traffic rural road might not need sidewalks and bike lanes, but adding paved shoulders to accommodate bicyclists may be warranted. The Complete Streets Policy is presented and explained in Chapter 6. This policy applies only to projects on Iowa DOT roadways (including projects initiated by MPOs/RPAs); however, MPOs, RPAs, counties, and municipalities are encouraged to adopt Complete Streets policies, perhaps using the Iowa DOT policy as a basis.

1.2 Continue to ensure compliance with Title II of the Americans with Disabilities Act on all transportation projects.

The Iowa DOT and regional, county, and municipal agencies in Iowa actively ensure that transportation projects reduce barriers for persons with disabilities by complying with Title II of the Americans with Disabilities Act (ADA). The Iowa DOT and other agencies in the state should continue utilizing the Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG) when designing a project. In addition to ensuring compliance when constructing, reconstructing, resurfacing, and rehabilitating roadways, the Iowa DOT and regional, county, and local partners should identify segments of urban primary and secondary roads that are not ADA-compliant and prioritize the reconstruction of those sidewalks and curb ramps.

1.3 Update the Design Manual and Bridge Design Manual to increase the quality and consistency of accommodations design across the state.

The Iowa DOT should increase the quality and consistency of accommodations design on state highways across Districts by providing updated and expanded guidance. To do so, the Design Bureau and Bridges and Structures Bureau should modify the Design Manual and Bridge Design Manual to reflect national best practices regarding the design of bicycle and pedestrian accommodations to provide clear and thorough standards and guidance for Districts to use when designing projects. Specific recommendations include:

a) Develop an on-road bikeways section for the Design Manual based on the AASHTO Guide for the Development of Bicycle Facilities. Coordinate this section with the on-road bikeways section from the Statewide Urban Design and Specifications (SUDAS) manual.

b) Modify and add clarity to standard road plan files, especially noting that the minimum effective paved shoulder width for bicyclists is 4 feet from edge of pavement to the rumble strip.

c) Reference the Facility Selection Matrix for accommodation types and treatments (see Chapter 4) to help designers deal with unique situations, such as bike lanes in the presence of on-street parking, climbing lanes, contra-flow lanes, paved shoulders at rural intersections, bridges, etc.

The SUDAS manual, the local equivalent of the Iowa DOT Design Manual, should also be updated based on national best practices and to coordinate with the Iowa DOT's Design Manual.

1.4 Provide technical expertise in the Central Office.

District Office designers may not have the time or familiarity to design accommodations, so Central Office could provide an increased level of technical support. This could include providing technical assistance on typical design elements (such as signals, crosswalks, bike lane markings at intersections, bikeway design in general, etc.) or becoming involved in problem solving on specific projects. Such a role will necessitate having engineers with expertise in bicycle and pedestrian infrastructure within Central Office (either in the Systems Planning, Local Systems, or Design Bureaus), which can be achieved by hiring new staff or assigning existing staff. These engineers may also provide a significant amount of oversight (including reviewing plans for individual projects) for the first few years after these policies are implemented to ensure a thorough understanding by project designers.

1.5 Develop and implement maintenance guidelines to address bicyclist and pedestrian needs.

Bicyclists rely on clean and smooth surfaces to balance and to negotiate turns and stops. Tire scraps, litter, broken glass, vegetation, and pavement damage all pose significant hazards for bicyclists, who are much more affected by these issues than motorists. Similarly, sidewalks and paths must be clear of debris and tripping hazards for pedestrians, not only to enhance the operation of the pedestrian network but also to maintain ADA compliance. The Iowa DOT should develop and implement maintenance guidelines to ensure that bicycle and pedestrian accommodations are properly maintained on a regular basis. In developing the guidelines, the Iowa DOT should decide what level of maintenance is adequate, identify who is responsible for which element (the Iowa DOT District Offices, counties, municipalities, etc.), and determine how maintenance will be funded. The resulting guidelines should be made available for use by counties and municipalities. In general, paved shoulders and on-street bikeways should be swept at least twice per year (once after most snow has disappeared and once during the autumn leaf fall) and inspected annually for pavement and pavement marking damage. The Iowa DOT District Offices should continue to respond to public requests for maintenance of its roads if hazards are reported.

Interagency Coordination

2.1 Provide training for planners and engineers on how to effectively plan, select, and design appropriate and accessible accommodations.

Once the Complete Streets Policy has been adopted and the Design Manual and Bridge Design Manual have been revised (policy recommendations 1.1 and 1.3), the Iowa DOT should provide training to planners and engineers. This training should be provided to the Iowa DOT, MPO, RPA, county, and municipal staff and should include an overview of new practices, guidance on how to select appropriate accommodations (based on the selection matrix, see policy recommendation 1.3), and examples of common design challenges and solutions. Training sessions should be provided up front in each District and then annually at the Iowa DOT's Central Office.

2.2 Continue to develop and enhance coordination between the agencies involved with developing a statewide network of trails.

The statewide trail network as it stands today is a result of the efforts of many municipal, county, and regional governments as well as the Iowa Department of Natural Resources (DNR), the Iowa Natural Heritage Foundation (INHF), and the National Parks Service. Each of these agencies has a role in funding, planning, developing, and managing these trails. These agencies should strengthen coordination in conjunction with the Iowa DOT to continue developing a network of statewide trails. It is especially important for these agencies to identify opportunities to eliminate gaps in the system and preserve corridors for future trail use.

2.3 Support the efforts of local and regional jurisdictions by sharing knowledge and providing guidance.

Numerous organizations are responsible for making Iowa a better place to walk and bike, including the Iowa DOT; other state agencies; regional, county, and local governments; and non-profit groups. The Iowa DOT should continue to develop and support such relationships by:

a) Assisting in revising SUDAS to reflect national best practices, as recommended in recommendation 1.3;
b) Providing training to regional, county, and local planners and engineers, as outlined in recommendation 2.1;
c) Providing technical assistance to regional, county, and local planners and engineers, as outlined in recommendations 1.4 and 2.4; and
d) Encouraging the prioritization of worthy projects by setting forth clear prioritization criteria, as outlined in the funding strategy described in Chapter 7.

2.4 Encourage and support local and regional bicycle and pedestrian planning.

Many of the regional agencies and municipalities in Iowa have bicycle and pedestrian plans that were created to expand the non-motorized network in a coordinated and logical manner. The Iowa DOT encourages each MPO and RPA, as well as cities and counties (especially those with populations exceeding 10,000), to develop or revise bicycle and pedestrian plans that coordinate with this statewide Bicycle and Pedestrian Plan. To do so, the Iowa DOT should support the development of regional and local plans by developing planning guidelines that outline the suggested content, approach, and methods for bicycle and pedestrian planning. In addition, the Iowa DOT should provide limited technical assistance as staff availability allows, which will also help the Iowa DOT be aware of community plans (both adopted and conceptual) for bicycling and walking.

Safe Routes to School (SRTS) plans are also important efforts that each school district in Iowa should develop. Dedicated funding for SRTS plans and programs has recently been eliminated, but it is still important to fund these efforts. A SRTS plan can often be efficiently developed as part of a community-wide bicycle and pedestrian plan.

2.5 Encourage communities to apply for bicycle friendly and walk friendly community status.

The League of American Bicyclists (LAB) ranks applicant communities on their level of "bicycle friendliness" on a scale from "Honorable Mention" through "Platinum." The Bicycle Friendly Community program provides a roadmap to enhance conditions for bicycling. The application process will help communities recognize their strengths and weaknesses regarding bicycling, and the response from the LAB will help guide each community in improving bicycling.

The Pedestrian and Bicycle Information Center (PBIC) awards communities that improve and prioritize pedestrian safety, access, mobility and comfort with either a bronze, silver or gold designation. PBIC, which is a partnership between the Federal Highway Administration and the University of North Carolina, provides a community assessment tool to evaluate existing pedestrian conditions and programs largely based on "4 E's"—education, encouragement, engineering, and enforcement. This walk audit can also be used in planning for future improvements and filling in the gaps in the other E's.

The Iowa DOT, MPOs, and RPAs should encourage Iowa communities to work toward and apply for both awards. These agencies should also provide support for communities that wish to apply, such as by reviewing applications and providing suggestions for minor improvements.

Network Planning

3.1 Reduce barriers created by major highways and other transportation facilities in cities and metro areas.

Many Interstate, US, and state highways pass through cities and can pose significant barriers to bicyclists and pedestrians. Limited-access roads (most Interstate highways and some US highways) offer very few street crossings, typically every one-half to three miles where an arterial or major collector street crosses. While these distances are negotiable for motorists, they are very limiting for non-motorized users. It is important to provide crossings for bicyclists and pedestrians (either as part of a street crossing or as a standalone overpass/underpass) where needed to improve connectivity and increase access for these users. Whenever a limited-access road is being constructed or reconstructed, the Iowa DOT should assess cross-access needs and build overpasses and underpasses accordingly. In general, a crossing of some sort should be provided at least every one-half mile in cities and metro areas.

There are also many at-grade US and state highways that pass through cities and create barriers. These highways often double as arterial streets and convey large volumes of traffic. The Iowa DOT and its regional and local partners should work to make these streets (especially US and state highways that serve as main streets in small communities) better for bicycling and walking. It is also important to make crossing these streets easier, such as by narrowing intersections where possible, shortening signal phases to reduce bicyclist and pedestrian wait times[i], providing longer crossing times, limiting right turns on red, upgrading pedestrian accommodations (enhanced crosswalks, median islands, pedestrian countdown signals, and curb ramps), lowering design speeds, etc. The Complete Streets Policy will help accomplish this task for streets that are part of the state highway system, but it is important for cities, MPOs, and RPAs to take the lead in improving major city streets not on the state highway system.

3.2 Expand connected bicycle and pedestrian networks in cities and metro areas to increase access and improve safety.

The bicycle and pedestrian networks need to be expanded by increasing the number of miles of accommodations provided. The sidewalk, multi-use trail, and on-street bikeway (bike lanes, shared lanes, cycle tracks, etc.) networks should be expanded—with a focus on reducing gaps in the system—to provide adequate connectivity for bicycle and pedestrian needs. The provision of on-street bikeways and the selection of accommodation type should be based on traffic volumes and speeds to reduce stress levels for bicyclists. Included in Chapter 4 is a Bicycle and Pedestrian Facility Selection Guide that features a toolbox and selection matrix that provides guidance on facility type based on various context parameters. It is especially important to provide bicycle and pedestrian accommodations that are appropriate for youth near schools. These efforts will mostly fall under the purview of local and regional governments and should be supported by the Iowa DOT through technical and planning assistance.

3.3 Expand connected bicycle and pedestrian networks in rural areas to increase access and improve safety.

In rural areas and within the metro area periphery (areas of transition between cities and the surrounding countryside), US, State, and county highways should be improved for bicycling in a context-sensitive manner by providing accommodations based on each roadway's On-Road Bicycle Compatibility Rating (see Chapter 4) with the goal of ensuring all non-Interstate rural roads have a rating of "good" or "moderate" for bicycling based on this methodology. In addition, MPOs, RPAs, the INHF, the Iowa DNR, counties, and other agencies should continue expanding multi-use trail systems into the metro area periphery to improve access to low-traffic rural roads. They should also continue to provide intercity trail connections where such connections are logical. Using abandoned railroads for rail-to-trail conversions is a great way to connect cities for transportation purposes, provide recreational opportunities, and encourage tourism and economic development.

3.4 Encourage transit integration with bicycle and pedestrian networks.

Connected bicycle and pedestrian networks increase the reach of transit systems by expanding the number of destinations that can be accessed. Every transit agency in Iowa should work toward providing bike racks on compatible transit vehicles in the near future. This is a relatively inexpensive action that can provide significant benefit to persons without motor vehicles. In addition, all transportation agencies in Iowa should use proximity to transit centers and bus stops as criteria when prioritizing the provision of accommodations for bicycling and walking.

3.5 Regularly assess bicycle and pedestrian network needs, identify gaps, and target improvements.

The current bicycle and pedestrian network (comprised of multi-use trails and on-road bikeways) has numerous gaps, whether they be physically disconnected pieces of infrastructure or roads with poor compatibility with on-road bicycling. While the Complete Streets Policy (recommendation 1.1) will significantly close gaps in the on-road bikeway system in the long term, it is important in the short term to identify key gaps and prioritize these locations for improvement in order to accelerate the development of a connected network for biking and walking. The following recommendations are made to identify needs:

a) The Iowa DOT should annually or biennially recalculate the On-Road Bicycle Compatibility Rating (see Section 4.2) for all rural and metro area periphery paved roads to identify the segments with the worst conditions for bicycling based on traffic volume, traffic speed, and pavement width. Roads in the metro area periphery should be targeted for improvement since they will generally be roads with greater existing and latent demand for bicycling, compared to roads in more rural areas;

b) MPOs and RPAs should regularly review their multi-use trail network and identify gaps in the networks. Shorter gaps should be prioritized for improvement;

c) Determine a method to assess the demand for bicycle and pedestrian accommodations to further justify the expense of providing accommodations. Several methods exist (e.g., the Latent Demand Score model[ii]) but are mostly comparative (rating one segment versus another segment) and do not estimate the actual number of users. A simpler method is to estimate the total travel demand and multiply by Iowa's bicycle mode share (1.0 percent of all trips according to the 2017 National Household Travel Survey) and pedestrian mode share (8.6 percent of all trips); and

d) Hold annual or semi-annual public meetings to gain feedback on proposed projects and receive ideas for specific network improvements. One opportunity is to hold a widely publicized open house concurrent with the annual Iowa Bike and Trails Summits (the open house should be open to those not attending the Summits). Another option is to hold a public meeting in each District once or twice per year.

Safety and Law Enforcement

4.1 Identify key bicycle and pedestrian related enforcement issues based on crash data and other evidence.

There are numerous traffic violations and bad behaviors regularly committed by bicyclists, pedestrians, and motorists. However, some violations are more likely to result in injuries and fatalities than others. For example, a bicycle equipped with a siren or whistle (prohibited by IAC 321.434) does not likely result in as many crashes as a bicyclist (or motorist) running a stop sign or red light, riding the wrong way on a one-way street, or failing to yield right-of-way. The Iowa DOT and the GTSB should collectively review crash data with law enforcement officers on a regular basis to identify the behaviors that most often result in crashes and develop enforcement tactics accordingly.

4.2 Incorporate bicycle safety-related education into training for new and experienced law enforcement officers.

Bicycle-related training for law enforcement officers often includes training that equips officers with the skills and knowledge to enforce the law on bikes. However, this training does not include any content regarding traffic interactions between motorists, bicyclists, and pedestrians. Law enforcement officers are not always aware of the types of traffic violations that are most likely to result in crashes between bicyclists and motorists. Brief education courses for law enforcement officials can provide information about these topics and potentially count toward continuing education requirements that many officers are required to pursue. In addition, annual reviews of bicycle and pedestrian crash statistics and reports will provide law enforcement agencies with knowledge of the specific behavioral issues and high-risk crash locations within Iowa. Furthermore, law enforcement officers should consider seeking League Cycling Instructor certification, which will allow them to effectively teach bicycle safety and skills courses to other officers and the general public.

4.3 Enact legislation designed to protect vulnerable road users.

Iowa's existing legislation related to vulnerable road users prohibits motorists from steering "unreasonably close to or toward a person riding a bicycle" (IAC 321.281) and requires overtaking vehicles to pass at a "safe" (yet undefined) distance (IAC 321.299). However, there are additional protections that could be enacted, as outlined below. Each of these recommendations has been adopted in multiple other states.

a) Modify IAC 321.299 to require motorists to change lanes when passing another vehicle (including cars, bicycles, agricultural equipment, construction equipment, etc.);

b) Adopt a vulnerable road user law that increases penalties beyond the current penalties outlined in IAC 321.482A for a motorist that injures or kills a bicyclist, pedestrian, construction worker, law enforcement officer, or any other vulnerable roadway user; and

c) Adopt a statewide, all-ages cell phone ban to combat distracted driving and increase safety for everyone on the road.

4.4 Evaluate key safety challenges pertaining to walking and bicycling and develop crash reduction strategies.

The development and implementation of Iowa's Strategic Highway Safety Plan (SHSP) is the state's primary way to identify, quantify, and develop countermeasures for safety problems on Iowa's roads. It also shapes how Highway Safety Improvement Program funds are used. However, in the past this document has not considered bicycle and pedestrian safety. Each time the SHSP is updated, it should include an analysis of crashes involving bicyclists and pedestrians as well as strategies for reducing and ultimately eliminating these crashes. In support of the SHSP and as general practice, it is important that planners and engineers conduct safety audits of intersections and corridors that have a high number of bicycle and/or pedestrian crashes. The Iowa DOT should develop a process and program for conducting these audits and work the MPOs, RPAs, counties, and municipalities to complete the audits.

Education and Encouragement

5.1 Provide education for all users on traffic laws and the rights and responsibilities of bicyclists and pedestrians.

Many people have a negative perception of bicyclists—that they ignore traffic laws or impede the flow of traffic. This perception is often tied to beliefs that bicycles do not belong on roadways or that they should be licensed and taxed. It is of critical importance that the general public understand traffic laws as they relate to bicycling and walking. Most notable is that the law gives bicyclists the right to use any roadway unless bicycling is specifically restricted (typically Interstate highways). It is also important that all users—bicyclists, pedestrians, and motorists alike—understand how to safely interact with each other on Iowa's roadways and trail facilities. The Iowa DOT and its partners should inventory current and past education efforts across the state. Then, building upon the successful programs, a comprehensive statewide education program should be developed and implemented in partnership between the Iowa DOT, the Iowa Bicycle Coalition, the Iowa Department of Public Safety, the GTSB, and others as appropriate.

This program should include:

a) A "Bicycle Awareness and Traffic Safety" public relations campaign distributed via the internet, billboards, the Iowa DOT's dynamic message signs, bus advertisements, and other media;
b) Revisions to the driver's education curriculum (including training for commercial drivers) adding the rights and responsibilities of bicyclists and pedestrians and current and future vulnerable road user laws;
c) Build upon the Iowa Bicycle Coalition's education program to provide safety and skills training courses annually for adults and youth. These courses should include practical (on-the-bike) training as well as classroom lessons to teach participants how to safely use the transportation system. Curriculum for school-aged children should also include pedestrian safety. The League of American Bicyclists has recently released a new Smart Cycling Quick Guide, which can be used to reach a broader audience than those willing to participate in more intensive bicyclist training programs.; and
d) Investigate offering a bicycle and pedestrian education course as an alternative for bicyclists, pedestrians, and motorists who are first-time minor offenders of bicycle and pedestrian-related rules of the road. Consider requiring such a course in addition to regular fines and penalties for habitual offenders.

The education program should reach all users of the transportation system in Iowa, but targeted efforts should be made to reach younger drivers.

5.2 Encourage more people to walk and bicycle in conjunction with education efforts.

The adage of "knowledge is power" is true for bicycling and walking. When people receive training on how to safely bicycle and walk while interacting with other users, they become empowered and encouraged to utilize active transportation regularly. The design of online and print safety and how-to materials, training courses, maps, and other education efforts should consider the need for encouragement and espouse the health, safety, environmental, and economic benefits of bicycling and walking. This is true for adult bicyclists and pedestrians as well as children and their parents.

5.3 Coordinate education and encouragement efforts with partners and events to reach broader audiences.

There are many organizations and groups other than the Iowa DOT that encounter bicyclists and other road users. Leveraging the contacts made by these groups is a good opportunity to further spread the education and encouragement message. The Register's Annual Great Bicycle Ride Across Iowa (RAGBRAI), which draws thousands of participants each year, is an example of such an opportunity. Bicycling and walking advocates should continue to use RAGBRAI, the Iowa Bicycle Summit, and other events to encourage bicycling by introducing people to bicycling in Iowa, encourage daily active transportation, and convey key education messages and materials. In addition, The Register provides educational materials on the RAGBRAI website, which should be coordinated with a statewide education campaign. In terms of public agencies, the partnership with the GTSB of the Department of Public Safety can be broadened and strengthened as a way to coordinate with law enforcement agencies across Iowa to provide more face-to-face education in communities.

5.4 Encourage the provision of incentives for people who choose to walk and bicycle to work.

Walking and bicycling to work has many benefits. For the individual, it saves money, improves health, and is enjoyable. In addition, the more people who walk and bicycle instead of drive, the less traffic congestion and air pollution there will be. The private sector can encourage more walking and bicycling by providing employees with incentives. Employers will find that more walking and bicycling leads to healthier employees, which leads to lower health insurance premiums and higher productivity. In addition, as part of the Bicycle Commuter Benefit—a qualified transportation fringe benefit (26 U.S.C. sec. 132(f))—employers may provide up to $20 per month of reimbursement for employees who bike to work.

[i] This will also increase bicyclists and pedestrian compliance with traffic/pedestrian signals.

[ii] Landis, B. and Toole, J. Using the Latent Demand Score Model to Estimate Use. In Pro Bike/Pro Walk 96 Resource Book. Presented at the Ninth International Conference on Bicycle and Pedestrian Programs, Portland, Maine, September 1996, pp. 320-325