



Iowa Trails 2000

Connecting People and Trails: Local Community Planning for Bicyclists and Pedestrians



A Handbook for Local Communities

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**Iowa Department
of Transportation**

Table Of Contents

LIST OF DEFINITIONS	iii
CHAPTER ONE	
Introduction: Connecting People and Trails	1
Why Plan Locally for Bicycling and Walking?	
What is Bicycle and Pedestrian Planning?	
Who Should be Involved?	
CHAPTER TWO	
Creating Your Community Bicycle and Pedestrian Plan	7
Step 1: Evaluate Existing Conditions	7
Land-Use and Transportation	
Evaluating Users	
Analyzing Crashes	
Area Attractions and Planning Efforts	
Step 2: Seek Public Input	13
Identify Interested Citizens	
Public Participation	
Communications	
Step 3: Planning Considerations	16
Connecting to the State Trails System	
Trails and Roadways for Non-motorized Transportation and Touring	
Land Use and Site Design	
Roadway Design and Traffic Operations	
Community Design Considerations	
Step 4: Create A Bicycle System Plan	24
Bicycle Network Criteria	
Priority Destinations	
Corridor Connections	
Alternative Evaluation	
Draft Bicycle Network Program	
Step 5: Pedestrian System Planning	32
Pedestrian Network Criteria	
Identifying Priority Service Areas	
Evaluating Current Conditions for Pedestrians	
Draft Pedestrian Network Plan	
Step 6: Develop Implementation Plan	39
Planning Context	
Programming Projects	
Funding	
Strategies and Policies	

CHAPTER THREE

Designing Local Bicycle and Pedestrian Networks47
The Importance of Good Design..... 48
Connecting to the State Trail System50
 Local Facilities
 Signing
 Amenities
Bicycle Facilities and Accommodations51
 Shared Roadways
 Removing Hazards
 Increasing Lane Width
 Paving Shoulders
 Bicycle Routes
 Sidewalks As Bicycle Routes
 Bicycle Lanes
 Bike Lanes At Intersections
 One-Way Streets
 Contra-Flow Bicycle Lane
 Finding Space For Bike Lanes
 Shared Use Paths
 Bicycle Parking
Pedestrian Facilities and Accommodations60
 The Sidewalk Corridor
 Crossing Streets
 Street Corners

APPENDICES

**Appendix 1: References and Resources for Non-Motorized
Transportation Planning**
Appendix 2: Technical Assistance Resources
Appendix 3: State of Iowa Bicycle and Pedestrian Accommodation Guidance
Appendix 4: Sample Pedestrian Audit and Hazard Reporting Forms
Appendix 5: “Do We Really Need Four Lanes of Traffic?”

List of Definitions

DEFINITIONS OF BICYCLE AND PEDESTRIAN FACILITIES AND TERMS

ADA

American With Disabilities Act of 1990. Broad legislation mandating provision of access to employment, services, and the built environment to those with disabilities.

Bicycle Facilities

A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including parking and storage facilities, and shared roadways not specifically designated for bicycle use.

Bicycle Lane or Bike Lane

A portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists

Bicycle Route System (Bike Route)

A system of bikeways designated by the jurisdiction having authority with appropriate directional and information route markers, with or without specific bicycle route numbers. Bike routes should establish a continuous routing, but may be a combination of any and all types of bikeways.

Bikeway

A generic term for any road, street, path or way which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Crosswalk

Any portion of a highway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface. Unmarked extensions of the shoulder, curb line or sidewalk are also referred to as crosswalks.

Curb Radius

A measure of the sharpness of the corner formed by two intersecting streets.

Curb Ramp

A combined ramp and landing within a public sidewalk to accomplish a change of level at a curbed street crossing.

Designated Shared Roadway

A shared roadway which has been designated by signing as a preferred route for bicycle use. (Same as Bike Route.)

Grade Separation

The vertical separation of conflicting travel ways with a structure, usually a bridge or underpass.

List of Definitions

Greenway

A linear open space established along either a natural corridor, such as a riverfront, stream valley or ridgeline; or overland along a railroad right-of-way converted to recreational use, a canal, or other route. A greenway, as a broad conservation concept, may or may not allow public access or formal trail development.

Median

A raised or painted portion of a divided highway separating travel lanes carrying traffic in opposite directions.

Parkway

The space provided to separate the sidewalk from the vehicular travel facilities, usually landscaped and used for various utilities and signing.

Pavement Markings

Painted or applied lines or symbols placed on a roadway surface for regulating, guiding or warning traffic.

Pedestrian Signal

The signal head that indicates the walk/don't walk phase of a traffic signal.

Public Walkway

A pedestrian facility on public or private space intended to provide passage for public use.

Rail-Trail

A shared use path, either paved or unpaved, built within the right-of-way of an existing or former railroad.

Raised Crosswalk

A variation of a speed hump in which a crosswalk is raised to sidewalk level and frequently surfaced to coordinate with the sidewalk rather than the street.

Refuge Island

A raised, curbed or painted area within an intersection that allows the pedestrian to cross a portion of the street in one movement and continue or wait to cross the next portion.

Right-of-way

The right of one vehicle operator or pedestrian to proceed in a lawful manner in preference to another.

Shared Roadway

A roadway which is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes, or a road with paved shoulders.

Shared Use Path

A bikeway physically separated from motorized vehicular traffic by an open space or barrier, and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users.

Shoulder

The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use and for lateral support of sub-base, base and surface courses. When paved and of sufficient

width, shoulders provide space for bicycle and pedestrian travel. A shoulder is usually separated from the travel lane by striping, and may be signed as a bike lane under moderate traffic conditions.

Sidepath

A two-way shared use path located immediately adjacent to a roadway, like an extra wide sidewalk. Not recommended in most applications due to space limitations, operational problems, and safety hazards at intersections.

Sidewalk

The portion of a highway, designed for preferential or exclusive use by pedestrians. (AASHTO) It is usually separated from the roadway with a curb and/or parkway and constructed of a hard durable material.

Speed Humps/ Tables

Raised street sections placed either at intersections or in other locations where they are intended to slow traffic. They are usually 10-12 feet in longitudinal length.

Traffic Calming

Roadway design measures used to slow or divert traffic to increase the safety and attractiveness of streets, especially for pedestrians.

Trail, Multi-Use Path or Bicycle Path

Same as Shared Use Path. However, the term bicycle path is becoming less common, since such facilities are rarely used exclusively by cyclists.

Wide Curb Lane

An outside or curbside travel lane of sufficient width for a bicyclist and motorist to share the lane with a comfortable degree of separation. The bicycle space is not striped, and generally the total width is less than a road with a paved shoulder or bike lane treatment.

Chapter One

INTRODUCTION: CONNECTING PEOPLE AND TRAILS

Many communities in Iowa have expressed a desire to develop a plan for better accommodating pedestrians and bicyclists in their community. This desire results from the recognition that walking and bicycling are popular recreational activities and, are increasingly important as "alternative transportation modes." Recognizing the desire on the part of communities to create better conditions for bicycling and walking, the Iowa DOT developed this handbook as part of *Iowa Trails 2000*.

This handbook outlines the steps and resources required to create a comprehensive system of bicycle and pedestrian facilities. Such a system can serve local needs and connect communities to the Iowa State Trails System and other regional attractions.

Iowa's trails have been, and will continue to be, developed through the combined efforts of citizens and state, regional and local governments. By working cooperatively, state and local governments can serve local bicycle and pedestrian needs and connect communities to the Iowa State Trails System and other significant regional attractions.

Why Plan Locally for Bicycling and Walking?

Everybody walks, and many people enjoy bicycling. Today, many communities are exploring ways to encourage these activities. Some reasons many communities are focusing on bicycling and walking today include:

- The enormous popularity of trails.
- State and national surveys indicate that pedestrians and bicyclists are the most common trail users, and Iowans would like more trail opportunities closer to home.
- Pedestrian and bicycle transportation provide many benefits, including:
 - transportation alternatives
 - increased physical activity
 - improved air quality (reduced auto emissions)
 - friendlier, livelier and more pleasant communities
- State and federal transportation programs encourage increased investment in alternatives to automobile travel and provide funding for bicycle and pedestrian facilities.
- Increasing motor vehicle volumes and speeds have degraded conditions for bicycling and walking.
- It is federal policy as expressed in The National Bicycling and Walking Study to
 - double the current (1994) percentage (from 7.9 percent to 15.8 percent) of total trips made by bicycling and walking, and to
 - reduce by 10 percent the number of bicyclists and pedestrians killed or injured in traffic crashes.

Why Plan Locally for Bicycling and Walking?



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Benefits of Walking and Bicycling

Health:

Inactivity is second only to smoking as a national health hazard according to the Center for Disease Control and Prevention: walking and bicycling by children appear to have fallen 40 percent between 1977 and 1995.

Transportation Alternatives:

One third of the population does not drive; independent mobility is important for everyone.

Air Quality:

Transportation sources are responsible for half of all pollution in the United States; bicycling and walking trips replace between 7.6 and 28.1 billion motor vehicle miles, saving between 4.4 and 16.3 million metric tons of exhaust.

What is Bicycle and Pedestrian Planning?

Not so many years ago, most urban and suburban communities had sidewalks and many low volume, low speed roads. Many rural communities had few sidewalks, but traffic was sparse and moved at lower speeds than today. Increases in population and automobile use have resulted in complex transportation systems that accommodate more traffic. Motorized traffic has been accommodated without always considering the needs of non-drivers. In response to a growing interest in walking and bicycling, planners and engineers have developed guidance to improve conditions.

Bicycle and pedestrian planning should be guided by the following principles.

Principle # 1: Local bicycle and pedestrian systems should provide safe and comfortable facilities.

Research has contributed to our understanding of the needs of bicyclists and pedestrians. For instance, there is unequivocal evidence that sidewalks protect pedestrians and contribute to overall traffic safety. Other research indicates that bicycle lanes increase the safety of bicyclists on roadways between intersections and enhance a bicyclist's sense of comfort in traffic. Research is inconclusive as to whether bicycle lanes help or complicate movements at intersections. Careful design judgment is required for the best application of many bicycle and pedestrian improvements.

There are many ways to increase the perception of safety. For example, attractive surroundings are more welcoming to pedestrians and bicyclists. Tree-lined streets with minimum traffic, traveling at low speeds, and well-maintained roads and sidewalks invite bicycling and walking. Buildings in good condition also increase an individual's sense of comfort and safety in a neighborhood. Higher density environments that provide sidewalks and short distances between residential and commercial areas also encourage walking.

Areas that are inherently unfriendly to bicyclists and pedestrians can be improved with practical design treatments. For example, the safety and comfort of pedestrians and bicyclists can be improved at multi-lane crosswalks with the addition of refuge islands and recessed stop lines. Furthermore, the addition of landscaping may also increase a person's sense of comfort and safety.

Principle #2: Direct access to destinations and continuity through connected facilities encourages the use of bicycle and pedestrian facilities.

Efforts should be made to connect local facilities with adjacent communities and state and regional trails.

Pedestrians need a continuous system of sidewalks and crossing

opportunities that connect residential areas to schools, jobs, shopping, and other services. There should be a pro-active approach by government that will require sidewalks in new developments and in-fill of missing sidewalk links.

Bicyclists are also dependent on continuity, especially if bicycles are used for transportation. A broad range of improvements can accommodate bicycling, including the signing and re-stripping of existing roadways, as well as, building off-road trails. The most efficient bicycle plans accommodate the highest priority destinations of local cyclists through connected facilities.

Access can further be improved by considering pedestrians and bicyclists in site design and transit planning. Walkways to and within large developments and shelters for transit users provide convenience and comfort for pedestrians. "Bikes-on-buses" programs increase the efficiency of public transit. Bicycle parking should be available at transit stations, shopping areas, schools, libraries and parks.



It is all too common to see sidewalks that end abruptly.

Principle #3: The design and extent of a bicycle and pedestrian system should reflect the needs of the community.

Communities differ in the type of bicycle and pedestrian facilities they require. The character of a community, its existing infrastructure and the needs of local bicyclists and pedestrians determine the opportunities and constraints that define a reasonable approach to planning. Rural communities that are characterized by relatively narrow roads with shoulders, limited public land holdings, and long distances between farms and towns are quite different from urban areas with high traffic volumes, curbed streets, and compact land uses. University and college towns, as well, have special needs.

Opportunities for off-road trail facilities also vary by community location and type. Suburban communities often fare well, especially if they have actively planned for open space preservation along rivers and abandoned railroad rights-of-way. They can develop inter-urban trails, create local bikeway networks, and include sidewalks in new development.

Opportunities to create linear trails in urban areas are sometimes constrained by dense land use and intense development pressure. However, in many cities, riverwalks and railroad corridors have been developed as important public spaces. Cities usually have the advantage of a grid street pattern and a relatively complete sidewalk system that offers alternatives for bicycle travel and places to walk.

Rural areas gain multiple benefits when shoulders of roadways are paved for bicyclists and town centers are designed to be pedestrian

friendly. A correlation exists between high levels of bicycling and walking and the presence of a college or university. Educational institutions should always be included in a community's non-motorized planning efforts.

Principle #4: A bicycle and pedestrian plan should be implemented in phases over a reasonable period of time.

The development of a bicycle system network and pedestrian circulation system will be determined, in part, by input from the public, the configuration of the existing infrastructure and linear corridors, and availability of funding. It is important to select popular initial projects that can be readily implemented. In addition, early projects should include low cost items that will make a difference to the community. Subsequent projects will include those that require more coordination and a longer funding horizon.

It is advantageous to secure local funding from a variety of sources. Demonstrating that a plan can be executed through a combination of already-planned transportation projects, various grant programs and local volunteer efforts builds support for allocating needed matching funds and accessing local budgets.

Who Should be Involved?

Many local, regional, and state agencies can impact trail, bicycle, and pedestrian planning. Included among these agencies are: transportation, public works, and planning departments at the local, county, regional, and State levels; county conservation boards; and the Iowa Department of Natural Resources (DNR).

It is essential that citizens also become involved in the planning process, partly because a strong public voice and vision will greatly empower local decision-makers. The business community, including private developers and Chambers of Commerce, represent some impacted constituents. Associations of homeowners and neighborhoods can also participate.

Citizen Advisory Committee

In most communities, there are individuals who are especially interested in trails, pedestrian issues, and/or bicycling. These people may be parents, environmentalists, homeowners, members of bicycle clubs, or advocates for the elderly or those with disabilities. They might be individuals who simply like to walk and bicycle and who want to enhance their communities with better recreational and transportation facilities. The involvement of these individuals in the planning process should be encouraged. A citizens' advisory committee can help to create consensus, identify issues and needs, and review planning efforts.

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Bicycle/Pedestrian Coordinator

Many communities will not hire or appoint a full-time bicycle, pedestrian, and trail planner. However, every community should assign one person to coordinate and oversee trail, bicycle, and pedestrian planning projects. Usually, several departments, including planning, public works, traffic, police, parks, and schools have reason to contribute to these efforts. It is extremely helpful to have one individual who can coordinate these various internal departments as well as work with other agencies.

Involved Public Officials

It is imperative that public officials express their support for the planning process. In smaller communities with minimal staff, public officials may provide leadership and fulfill the coordinator's role. In most communities, there will be dissension by someone at some time to some aspect of a trail, bicycle, or pedestrian plan. Creative and proactive leadership can diffuse problems that might stall or stop important projects.

Finally, it is important to know that technical assistance is available. The Iowa Department of Transportation (DOT) provides technical assistance through its Transportation Center Planners. The Iowa DOT also has a Bicycle and Pedestrian Coordinator who can answer many questions about planning, design, and funding. Many projects are funded through the Metropolitan Planning Organizations (MPOs) which, along with the Regional Plan Affiliations (RPAs), also provide technical assistance. Additional resources include the Iowa Department of Natural Resources (DNR), the local office of the Federal Highway Administration (FHWA), and the Bicycle and Pedestrian Clearinghouse, a national source for publications and information. (See Appendix Three for contact information for District Transportation Planners, MPOs/RPAs and other resources.)

The City of Seattle, Washington has found that the following entities facilitate the bicycle and pedestrian planning process:

- A Bicycle/Pedestrian and/or Trail Advisory Committee
- A Bicycle/Pedestrian Coordinator
- Committed Citizens and Public Officials

For Information and Assistance Contact:

Your District Transportation Planner (see map and list in Appendix Two) or the

State Bicycle and Pedestrian Coordinator
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010

Phone: (515) 239-1621

