

# 4 Transportation Planning for Pedestrians

## 4.1. Introduction

Pedestrian planning does not have to be a complicated matter. Many agencies are involved in the different types of planning: metropolitan planning organizations (MPOs), regional planning commissions (RPCs), municipalities, and counties. There are four ways to plan for accommodating pedestrians in the transportation system:

- **Free-standing or separate pedestrian plan.** This plan discusses and recommends practices and policies that address pedestrian facilities, programs and services. Such a plan often includes a “network” or “system” component where pedestrian facilities are recommended by location, with an accompanying map (Exhibit 4-1).
- **Integrating pedestrian planning with other plans.** Pedestrian planning can

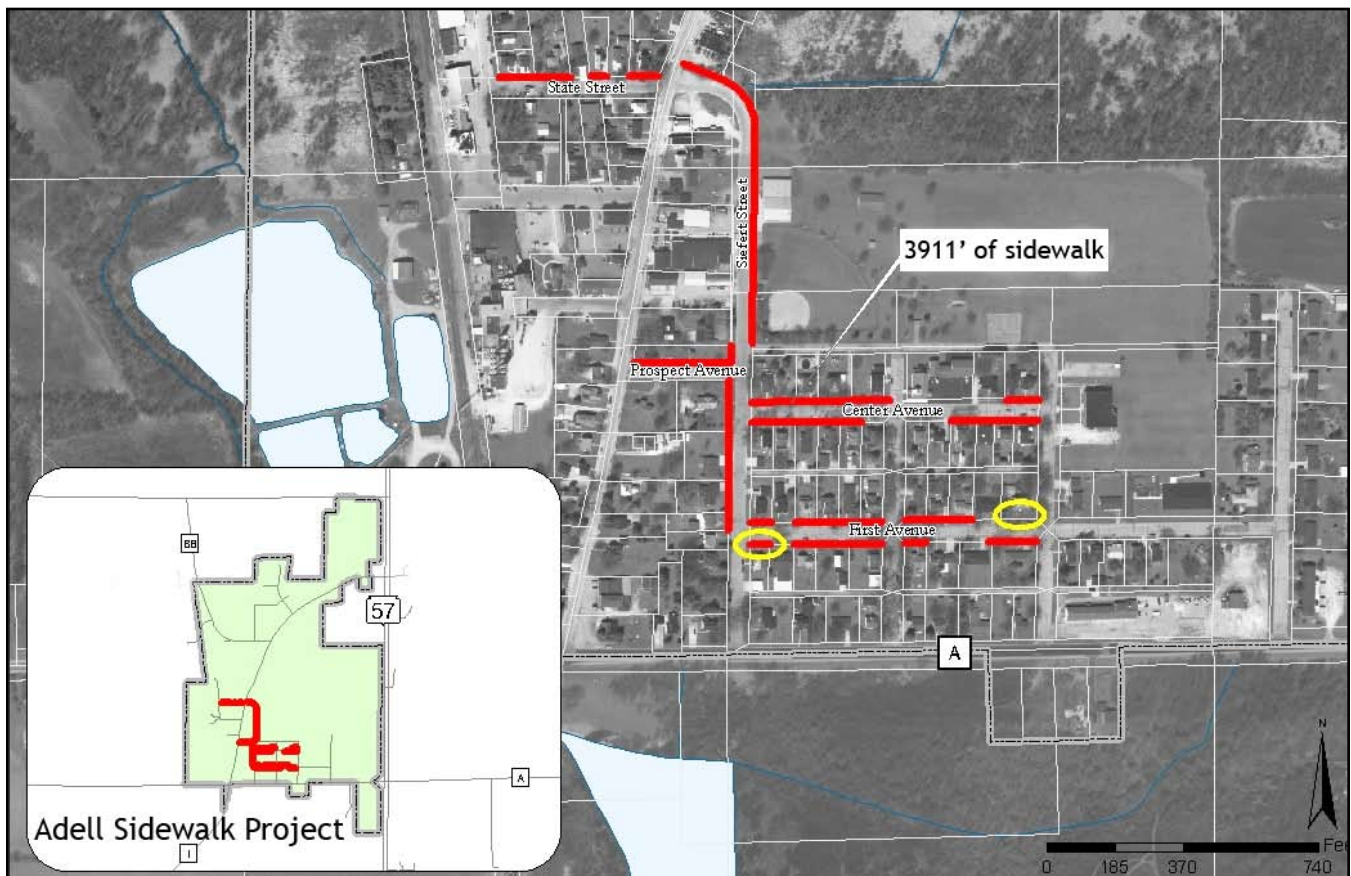


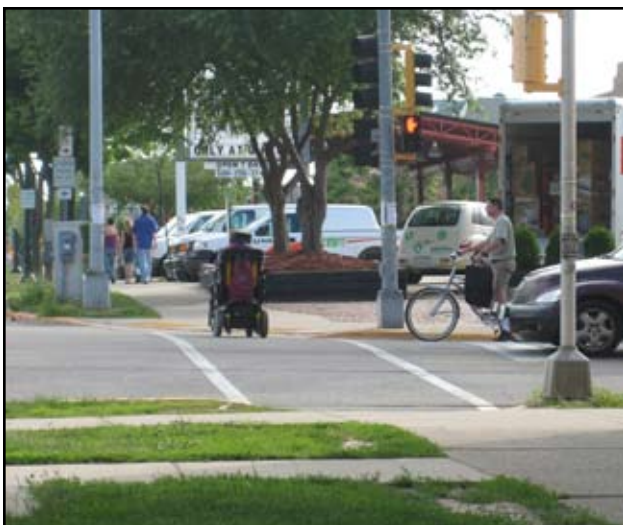
Exhibit 4-1: This aerial photograph was modified to visually display locations in the overall sidewalk network where deficiencies will be addressed.

be integrated into other plans, such as a comprehensive community plan, neighborhood plan, or a metropolitan area transportation plan.

- ▶ **Project-level planning.** Pedestrian planning can occur when planning and designing new streets or reconstructing older streets, streetscapes, intersection crossings, and sidewalk design details take shape at this level.
- ▶ **Specialty plans.** Pedestrian planning can occur when specialty plans are developed. These plans include safe routes to school plans, sidewalk retrofit plans, and pedestrian safety action plans.

Review of plats and site development plans is also a critical planning component that can be performed independent of pedestrian planning.

The plan types are not mutually exclusive. In fact, a community that is very supportive of pedestrian travel may conduct all four types of pedestrian planning. Similarly, a community that ensures that sidewalks and safe crossings are integrated into new and reconstructed street projects is conducting the most important aspect of pedestrian planning, project level pedestrian planning. Project level pedestrian planning is accomplished through strong pedestrian policies and ordinances that support the inclusion of sidewalks. This is not to underestimate the challenges that will exist on some major streets where engineers and planners will have to balance the needs of a variety of modes of travel in a confined right-of-way (Exhibit 4-2).



*Exhibit 4-2: Creating thoroughfares in a confined right of way where each travel mode is in balance with other modes are challenging, yet essential to achieving equity in transportation planning.*

While there are some common activities and elements that most pedestrian planning projects should include, other aspects of plans may vary depending upon particular conditions and situations. Each type of planning is summarized below after a brief discussion of factors that affect walking, and efforts necessary for involving the public in planning for pedestrian travel. This chapter is organized into the following sections:

- ▶ Walking decision factors
- ▶ Public participation
- ▶ Developing free-standing pedestrian plans
- ▶ Integrating pedestrian planning into other plans
- ▶ Conducting project-level planning
- ▶ Producing specialty pedestrian plans

## 4.2. Walking decision factors

According to the National Household Travel Survey, just over 7 percent of all trips in Wisconsin are made by foot. In many Wisconsin cities, the percentage exceeds 10 percent. In national surveys, a far greater percentage of people that currently do not walk indicated that they would prefer to walk if facilities were safer. However, safety is not the only factor affecting a person's attraction or aversion to walking. Other factors include trip distance, availability of alternatives, weather/comfort, aesthetic appeal of potential routes, integration of modes, and other limiting factors such as the need for travel flexibility. This section provides information that planners and officials may find helpful as they develop plans, zoning ordinances and other ordinances that may affect walking.

### 4.2.1. DISTANCE

According to the 2001 Household Travel Survey conducted in Wisconsin, 41 percent of all walking trips were less than two miles. The survey also noted that the average walking trip in the state was 1.3 miles. These facts suggest that there is considerable potential for Wisconsinites to make more short trips by walking.

The physical environment has a considerable effect on trip length. One of the most prominent impacts is population density or the compactness of development. When population densities are greater, community services like retail centers, schools and employment centers are closer. This

includes stores, services, schools, and even places of employment. Typically, land use patterns, especially mixed land-uses, are more conducive to walking due to increased variety of activities within a compact area. Mixed land uses include areas occupied by businesses that serve the daily needs of residents. Separating these businesses from where people live increases trip length and reduces walking.

#### 4.2.2. AVAILABILITY OF ALTERNATIVES

In many Wisconsin communities and neighborhoods, individuals and households have limited access to an auto. Twenty-one percent of the state's driving age population does not have a drivers license and 4.4 percent of households do not have access to a motor vehicle. Add in children too young to have a drivers license and the number rises to 29 percent of the population without a driver's license. In some areas of the state, households without access to a vehicle exceed 20 percent. As these percentages rise, so does the likelihood of a person walking for purposeful trips such as shopping, dining out, and getting to work. These trips are often made in conjunction with public transportation. Many of the shorter trips may be made entirely by foot.

Providing alternatives and choices in the transportation system allows all users to have access to affordable, safe, and convenient transportation, and equality in transportation regardless of their abilities, age, socioeconomic, or cultural differences (Exhibit 4-3).

#### 4.2.3. SAFETY

There are two elements of safety: traffic-related safety and personal security. Both can have a profound impact on a person's willingness to make a trip by walking. Traffic safety includes



*Exhibit 4-3: Providing a diverse and responsive array of alternative travel modes allows users to have access to affordable, safe and convenient transportation.*



*Exhibit 4-4: Crosswalk markings, medians, pedestrian signals and warning signs are important elements that enable pedestrians to safely cross a busy street.*

separating pedestrians from fast moving traffic, the availability of sidewalks, and adequate opportunities to cross busy streets (Exhibit 4-4). Streets that maintain an adequate separation for pedestrians and provide relatively short crossings are typically associated with characteristics such as medians, pedestrian signals and tighter curve radii. These characteristics will likely lead to both a perceived safety improvement and a net reduction in pedestrian-related crashes.

Personal security can be a more significant factor than traffic in deciding whether to walk. Streets that are continually busy with pedestrian traffic are typically more attractive for walking. Conversely, streets that have few pedestrians, especially at night, can be intimidating for people. Street designs that incorporate pedestrian-scale lighting and mixed land uses that generate activity on the street are likely to be the main physical design devices to counter personal security issues.

#### 4.2.4. WEATHER/COMFORT

People walk more often when they are comfortable. Comfort declines as the distance walked increases. Trips being made in hilly areas or under less than desirable weather conditions can also influence comfort. The type of trip can also make a difference in that a person can dress more or less comfortably for specific trips. For instance, a trip to visit a friend is likely to permit more flexibility in clothing than



Exhibit 4-5: In Wisconsin, many short walking trips can be made in the winter if walkways are cleared of snow and ice.



Exhibit 4-6: Walking trips are more appealing when natural features can be incorporated.

a trip to work. Unlike bicycle trips in Wisconsin, walking trips are not subject to significant reductions during winter months, especially if sidewalks are kept clear of snow and ice (Exhibit 4-5).

#### 4.2.5. AESTHETIC APPEAL OF ROUTES

A walking trip can have more appeal when interesting cultural or natural features visually enhance it (Exhibit 4-6). Because pedestrian speeds are lower than those of motorists and bicyclists, attention to detail along pedestrian routes tends to produce substantial safety payoffs for pedestrians. Taking advantage of opportunities to build sidewalks and trails along rivers and lakes may be one way to encourage more walking. Pedestrian-scale lighting, continuous pedestrian



Exhibit 4-7: It is essential to examine transfer facilities as part of a coordinated transportation system because they are accessed by many modes.

facilities, amenities like benches, and mixed uses that feature attractive window displays, are all part of the mix of features that can support walking. Pedestrian-scale development—including building height, proximity to the street, architectural detail and orientation—also has significant impact on the environment’s overall appeal for walking.

#### 4.2.6. INTEGRATION OF MODES

The transportation system is more than the sum of its parts. It connects and integrates various modes. Integrating transportation modes increases the overall quality of the transportation system. Park and rides, transit transfer centers, rail stations or stops, intermodal stations, and other facilities such as bus terminals used for intercity travel are places where it is important to consider and integrate transit and pedestrian linkages (Exhibit 4-7). It is important to consider not only how a pedestrian will transfer between modes, but also how well the facilities integrate into the overall pedestrian network. The decision to walk to these facilities is affected by how accessible they are to pedestrians.

#### 4.2.7. OTHER FACTORS

Even though other conditions may be right for a person to make a walking trip, it may not be possible due to personal or business-related responsibilities. For example, a person may be willing and able to walk to work, but that person’s work duties may require the use of a motor vehicle during the day.

### 4.3. Public participation

Public participation is essential to transportation planning and should begin early in the planning process. WisDOT encourages a proactive public involvement approach that includes an early and continuing role for the public. WisDOT also encourages using a variety of means to reach affected groups, particularly those traditionally underserved by the existing transportation systems, such as minority and low-income populations.

**Tell me, I forget.**

**Show me, I remember.**

**Involve me, I understand.**

– Chinese proverb

Community input and interest in plans can be obtained in a variety of ways. Developing a public participation plan and outlining the process are helpful tools that allow planners to:

- ▶ Identify stakeholders and define issues and decision points where input is needed.
- ▶ Identify the level of participation and techniques that may be needed or used.
- ▶ Communicate the planning and public involvement process and timeline so that participants and decision-makers understand how their interests and needs may be met.

Identifying the stakeholders requires asking key members of the community to be involved who can help identify groups and individuals who will most likely be interested in the planning effort. Groups and individuals may exist that are traditionally not involved in transportation planning who should be invited to participate. Pedestrian groups can be helpful in providing names and addresses of individuals and groups interested in pedestrian issues. It is important to reach out to other potentially interested parties besides those in organized groups. These may include teachers, students, people with disabilities, safety advocates, and parents' school groups. Once participants are identified, define and refine what issues and concerns will or can be addressed in the planning process.

Solicit input on the plan after identifying stakeholders. Develop a timeline of decision points and public participation activities. This can include information on how and when input will be obtained. This helps participants prepare their input for the planning process. The timeline may describe various techniques that may be used. Using several different types of public participation techniques will reach a broader audience. While holding public meetings on the pedestrian plan is common, it can also be important to attend meetings of existing groups (e.g., civic organizations, neighborhood associations, school board, and others). This is a good way to reach out to those who do not have time or the inclination to get directly involved, or who may not have heard about the plan.

For community-wide plans, extra attention can be focused on the planning process by conducting public meetings in different parts of the community and publicizing them through various media, including neighborhood newsletters and e-mail alerts. Surveys are also a useful tool in gathering public opinion for community-wide plans. Surveys may include telephone surveys, surveys included in local newspapers, surveys posted on the Internet or mail-back surveys distributed to particular locations such as public meetings or on public transportation.

An advisory committee can be an effective way to gain organized and sustained input on the pedestrian plan. Two planning approaches—*Safe Routes to School Planning and Developing a Safety Action Plan*—require this type of involvement by the public and stakeholders. Advisory committees can also lead to the creation of a permanent committee that oversees the community's pedestrian program.

### 4.4. Developing free-standing pedestrian plans

Separate, free-standing or independent pedestrian plans result in documents that exclusively address pedestrian issues and needs. Unlike comprehensive plans or multimodal transportation plans, these efforts focus solely on pedestrians, or bicycling and walking. Communities and MPOs most commonly prepare these types of plans. These plans usually include a pedestrian facilities element as a key chapter. In addition, they provide enough detail to list and prioritize existing streets to

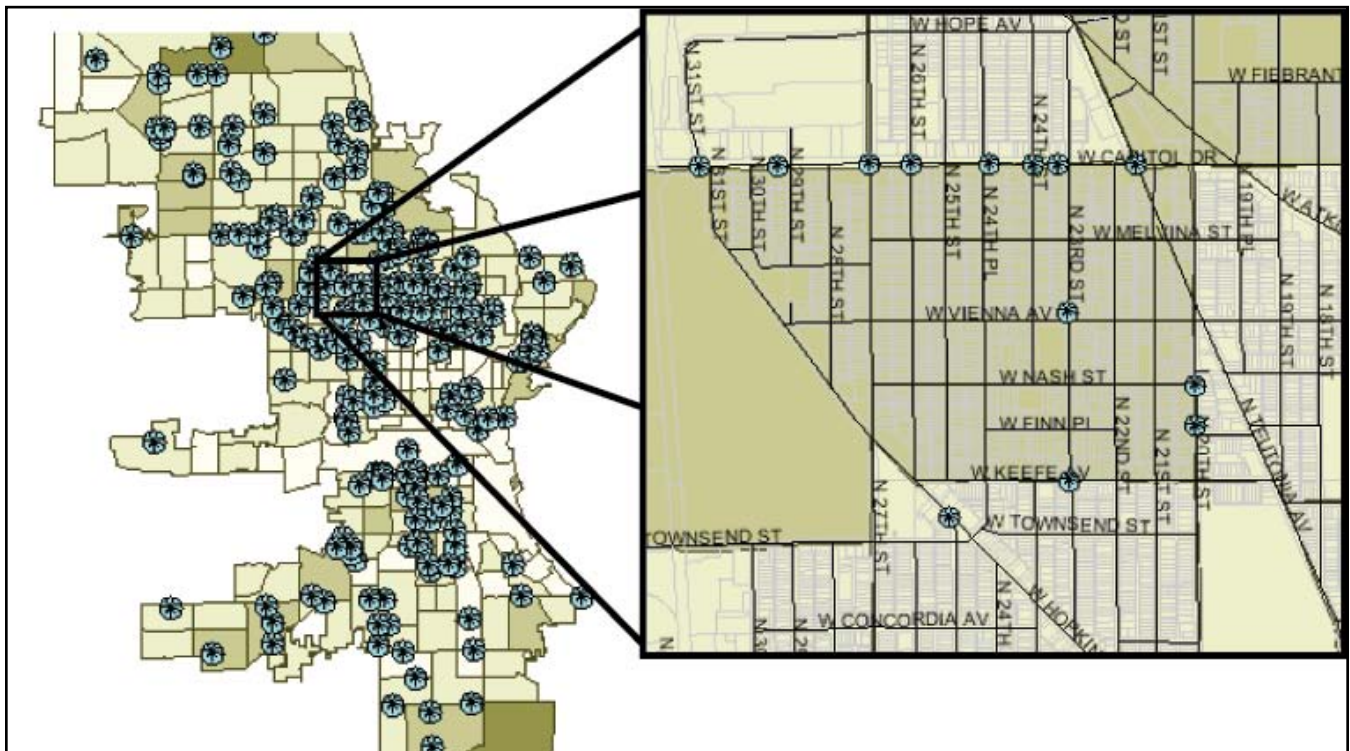


Exhibit 4-9: Mapping pedestrian crashes can help identify problem intersections and streets.

Exhibit 4-8: City of Madison

Pedestrian Plan contents include:

- » Importance and Viability of Pedestrian Transportation
- » Thinking Like a Pedestrian
- » Vision, Goals, Objectives
- » Issues, Current Conditions and Recommended Actions
- » Implementation Priorities & Future Planning

<http://www.cityofmadison.com/trafficEngineering/programsPlanTransportation.cfm>

retrofit with sidewalks. Exhibit 4-8 shows a table of contents in a typical free-standing pedestrian plan. All free-standing plans should have a public participation element (see Section 4.3).

The primary elements of a separate pedestrian plan are:

- Assessment of current conditions and inventory
- Facility plans
- Key design guidelines and procedures
- Land use plan and zoning
- Education and enforcement efforts
- Implementation strategy

#### 4.4.1. CURRENT CONDITIONS AND INVENTORY

Conducting an inventory of existing facilities and deficiencies is one of the first steps in developing a separate pedestrian plan. Depending on the size of the community, it may be desirable to inventory only a certain number of neighborhoods each year. This reduces the work level in any given year, makes the assessment manageable, and ensures that each neighborhood is inventoried every few years. Many communities maintain inventories of sidewalk conditions, including tripping hazards, non-complying curb ramps, and deteriorated sidewalk segments. These inventories provide valuable data for determining the walkability of each neighborhood.

The inventory of current conditions should also include an analysis of pedestrian injuries and fatalities. While most of this data will relate to pedestrian-motor vehicle crashes, it can be supplemented with hospital records to assess pedestrian injuries unrelated to motor vehicle crashes. Mapping the location of crashes involving pedestrian can help identify corridors and intersections where immediate remedial treatment is needed (Exhibit 4-9). The Traffic Operations and Safety (TOPS) system is available to law enforcement personnel in most communities.

The TOPS database provides information about pedestrian crashes involving motor vehicles that have been recorded on MV4000 forms.

The Pedestrian and Bicycle Crash Analysis Tool can be used to categorize specific types of crashes. Once a crash is categorized, the tool recommends available countermeasures that are believed to, or have been proven to, be effective in reducing the particular type of crash. The recommended countermeasures can be included in the inventory of current conditions, but should also be summarized in the safety and implementation chapters.

Walking audits are a relatively new tool in evaluating the pedestrian network. In a walking audit, residents, decision-makers, and agency staff evaluate transportation issues by walking the streets and discussing observations (Exhibit 4-10). This information can help identify areas conducive to walking, identify areas where changes are needed, and inform the solutions chosen to create the changes. This is an excellent way to inventory and evaluate existing conditions as well as prioritize main concerns at the same time. For engineers and planners, walking audits provide useful feedback and ideas that they can incorporate into their work. Audits might focus on a neighborhood, school site, troublesome pedestrian corridor, or an intersection that residents find difficult to cross. In addition to evaluating infrastructure and present conditions, audits can be used to examine proposed development plans or other projects that may introduce change into a neighborhood.

It is important to document and assess local policies and practices involving pedestrian



*Exhibit 4-10: In a walking audit, citizens, decision-makers, and agency staff personnel evaluate traffic safety issues by walking the streets and discussing observations. This can be a useful tool for evaluating pedestrian concerns.*

accommodations. Sidewalk and subdivision ordinances related to sidewalks should be included in the inventory of current conditions. If the plan is being prepared by a MPO, pedestrian treatments and practices will likely vary among communities. This review should also include zoning ordinances, since these affect pedestrian circulation and how buildings and developments connect to the public pedestrian facility network.

#### 4.4.2. FACILITY PLANNING

Planning for sidewalks involves the development of policies (ordinances) and design standards that provide for appropriate pedestrian facilities. Incorporating sidewalks on all new and reconstructed streets helps ensure the needs of pedestrians are routinely being met. When sidewalk and subdivision ordinances require sidewalks, little additional or special consideration of their need is necessary later since sidewalks are a required accommodation for new subdivisions from the start.

Nevertheless, a broader facilities element is important to identify, recommend and prioritize non-street related pedestrian facilities. These include paths and sidewalks located in separate corridors such as greenways, along waterways, abandoned rail corridors, and connections between subdivisions (Exhibit 4-11). Additionally, the broader plan should recommend the location of underpasses, overpasses and other crossing improvements of major barriers. This part of the plan can be thought of as an “overlay” to complement a complete set of sidewalk facilities that have been built as a routine part of street construction.



*Exhibit 4-11: One part of facility planning is to identify, recommend and prioritize areas where independent corridors can significantly contribute to comprehensive transportation facilities.*

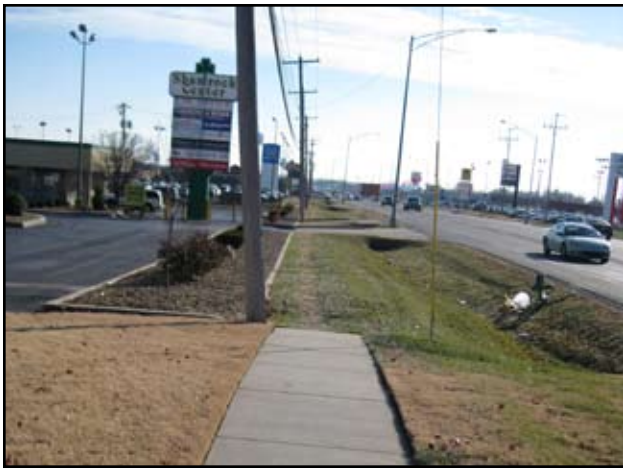


Exhibit 4-12: The worn pathway where the sidewalk ends shows an obvious gap in infrastructure. This deficiency can be addressed through the retrofit element of facility planning.



Exhibit 4-13: Land use and density are subject to changes over time. Because of the potential changes, it is critical to incorporate sidewalks onto all urban and suburban bridge projects.

The facility plan should include a retrofit element. Urban and suburban arterial and collector streets should be retrofitted to include sidewalks, especially those that serve schools, commercial areas, office complexes and bus routes. Table 4-1 provides guidelines for sidewalk installation based on land use, roadway functional classification, and in the case of residential areas, dwelling unit density. This table can be used to help prioritize the retrofitting of sidewalks into already built-up environments.

Once crash data and facility deficiencies are examined, existing streets are identified for these new, retrofitted sidewalks (Exhibit 4-12). Critical gaps in sidewalk connectivity will often appear when assessments are made. Additionally, crossing problems will appear from both the crash analysis and public input. Criteria that can help prioritize

**Table 4-1: WisDOT Guidelines for Sidewalk Placement**

Land-Use, Dwelling Density, or Functional Classification	New Urban and Suburban Streets	Existing Urban and Suburban Streets
Commercial and Industrial (all streets)	Both sides	Both sides. Every effort should be made to add sidewalks where they do not exist and complete missing links.
Residential (arterials)	Both sides	Both sides
Residential (collectors)	Both sides	Multifamily—both sides. Single family—prefer both sides; require at least one side.
Residential (local road) More than 4 units/acre	Both sides	Prefer both sides; at least one side required.
Residential (local road) 1 to 4 units/acre	Prefer both sides; at least one side required.	One side preferred at least 4 feet.
Residential (local road) Fewer than 1 unit/acre	One side preferred; shoulder on both sides.	At least 4 foot shoulder required on both sides.

the need to retrofit pedestrian facilities include existing and anticipated pedestrian volumes, major and minor pedestrian destinations, transit routes, school zones, street classification, neighborhood priorities (not necessarily adjacent landowner priorities), and street reconstruction opportunities.

Americans with Disabilities Act (ADA) transition plans and citizen requests are also important. ADA requires all public entities with more than 50 employees to have a “transition plan” that identifies non-compliant pedestrian facilities. Individual requests may also identify sidewalk and street crossing repairs needed to make pedestrian routes accessible. The goal of the transition plan is to affect a shorter-term resolution to accessibility issues rather than waiting for the street to be reconstructed with new ADA-compliant pedestrian facilities.

Other recommendations of the pedestrian facility element include:

- Policy to include sidewalks on all urban and suburban streets when they are initially constructed.
- Policy to include sidewalks on bridges. The useful life of a bridge is typically 40 to 60 years. In many cases, it is likely the density and type of land use around it will produce significant pedestrian traffic even



if there is little pedestrian traffic when the bridge is first constructed (Exhibit 4-13).

- Cost share policies for new construction and retrofit sidewalks.

Processes needed to fund the development of specific pedestrian projects over the life of the plan. The plan may need to recommend the development of a capital development fund for the replacement and retrofit of sidewalks.

Policy to encourage pedestrian-friendly site designs. The development and revision of subdivision, zoning and general municipal ordinances should include connections between subdivisions and cul-de-sacs. Similarly, land use plans and zoning ordinances should encourage mixed-use developments, making walking between buildings and land uses more practical and pleasant. See Chapter 3 for more information on the relationship between land use and pedestrian mobility.

Many communities, including Milwaukee, West Allis, Wauwatosa, and Eau Claire, have adhered to strong sidewalk inclusion policies. As a result, they require comparatively little retrofit work (in addition to replacement and maintenance of existing sidewalk facilities). Even in these communities, many improvements are still necessary, such as the construction of pedestrian and bicycle facilities over major barriers, ADA compliance efforts for sidewalks and curb ramps, and promotion of pedestrian safety and circulation through improved signalization.

#### 4.4.3. ESTABLISH KEY DESIGN GUIDELINES AND PROCEDURES

Having an established set of design guidelines and procedures is important for institutionalizing the consideration of pedestrians in planning projects and ensuring proper facility design. For example, many cities in Wisconsin have standard street “cross-sections” that show typical engineering dimensions for each roadway classification. The inclusion of sidewalk facilities for all functional types of streets—arterials, collectors and neighborhood streets—strongly reinforces the need for inclusion of pedestrian facilities. Often, communities develop and adopt their own set of design guidelines and procedures. A community may also rely on design guides and manuals available from state or national sources. Using these guides and manuals could save a community the time,

cost and effort of producing their own standards. A community may formally adopt these design guidelines as part of a city ordinance or include them as part of a pedestrian or comprehensive plan.

#### 4.4.4. LAND USE AND SITE PLANNING

The shorter the trip, the more feasible it is as a walking trip. The practicality of short trips is dependent on the proximity of potential destinations. Compact development with mixed land uses creates opportunities for residences to be close to locations with business and community services. The land use aspect of pedestrian planning is so important and integral to enabling and encouraging walking trips that an entire chapter of this guide has been devoted to this topic (see Chapter 3).

Most free-standing pedestrian plans do not have a land use component included as part of the plan. Instead, they rely on land use plans already prepared for the community. Land use plans can be done separately or as part of a transportation-land use plan or comprehensive community plan. The land use component of a pedestrian plan should:

- Identify all existing land use plans and practices that may affect the potential for walking. This should include any implementation tools such as sidewalk, zoning and subdivision ordinances.
- Assess how well the land use plans and implementation tools support compact and mixed-use development. This should include an evaluation of more specific processes, such as plat reviews, site design reviews, planned unit developments, permits, zoning variances, and traditional neighborhood developments for content, and for how well the process considers pedestrians.
- Make specific recommendations on how land use planning and implementation tools can effectively support pedestrian-friendly developments that in turn can induce more pedestrian trips.
- Planning for pedestrian education and enforcement efforts

Measures to improve pedestrian safety should not be limited to engineering treatments; education and enforcement efforts are also important for pedestrians. In many pedestrian plans, safety recommendations are folded into other chapters of the plan. However, having a



Exhibit 4-14: The Street Share program is designed to educate and encourage motorists about their rights and responsibilities regarding pedestrians.



Exhibit 4-15: Controlling motorist speeds is one aspect of an overall enforcement effort for pedestrian safety. Education, encouragement, and engineering solutions should be utilized where applicable.

specific education and enforcement element will generate more ideas and will focus more attention on the education and enforcement solutions to pedestrian safety and mobility.

Transportation officials often see the solutions to transportation problems in the framework of the four “Es”: engineering, education, enforcement, and encouragement. Education by itself may be less effective without also providing engineering and/or complementary enforcement measures. For example, even a well-designed crosswalk with properly timed pedestrian signals can be ineffective if pedestrians are not aware of the meaning of the signal’s commands, or motorists are not yielding to pedestrians when turning because of the lack of enforcement.

Education and enforcement programs teach motorists and pedestrians about safe practices as well as the laws that govern them. An important educational construct is how motorists think of pedestrians. Most motorists do not routinely look for pedestrians. This is, in part, a result of how transportation officials educate and influence (or fail to influence) certain motorist behaviors. Pedestrians are often considered negligent in pedestrian-vehicle crashes even when the motorist was at fault for not looking for and yielding to the pedestrian. Often

there is an underlying assumption that pedestrians should not be in the road. Educators and law enforcement officers need to work to change these views to ensure that pedestrians are accepted as legitimate users of the street network (Exhibit 4-14).

Direct enforcement efforts should be considered for inclusion in a plan because such efforts often make a difference in a community. Enforcement programs that involve frequent and reasonable motorist penalties are more effective than enforcement that is less frequent but imposes high penalties for a motorist violation. Enforcement-related efforts should be used to support pedestrian crossing rights and to control motorist speeds (Exhibit 4-15). This requires speed limits to be established at reasonable and desirable levels. Training programs should be available for police officers, district attorneys and judges regarding pedestrian-related laws and issues surrounding pedestrian safety.

A main effort of any pedestrian plan is assessing pedestrian-motorist crashes (see section 4.4.1). Several tools are available to help assess the crashes and provide some general recommendations for countermeasures. Most tools identify engineering solutions as countermeasures. Education and enforcement measures should be combined with the engineering solutions. A recently developed tool called a Pedestrian Intersection Safety Index can help assess intersections, and can identify the most dangerous intersections before an injury occurs. This tool can enable planners and engineers to consider countermeasures earlier in the pedestrian planning process.

Many Wisconsin communities use enforcement efforts that are appropriate for a pedestrian plan. The efforts include speeders hotline, targeted enforcement, speed boards, yard signs, and combining these activities into one campaign. Chapter 8 provides a more detailed discussion of enforcement options.

Education efforts have been in place for decades. Some have been institutionalized at the state level such as driver education and driver licensing. Motorist education is critical. Motorists must understand that pedestrians can legitimately use and cross roadways. It is important that education campaigns and plans target both pedestrians and motorists. Public awareness campaigns can continually remind motorists of their responsibilities, while pedestrians can be educated on using pedestrian signals and the best way to

communicate with motorists when using crosswalks. WisDOT has a pedestrian safety program that provides ideas, resources and funding for pedestrian safety strategies. Many of these ideas may be appropriate as plan recommendations. Chapter 8 discusses these education strategies in more detail.

#### 4.4.5. IMPLEMENTATION STRATEGY

One of the last steps in the preparation of a pedestrian plan is to identify how improvements will be made, including the timing and staging of the actions. Implementing a free-standing plan calls for the commitment of an entire agency or unit of government with sufficient funding, staff and public support. Agency staff that has a role or stake in the plan should be involved in developing the entire plan if possible, or, at a minimum, in developing the implementation strategy. It is not good practice to rely on just one or two people to develop or implement a pedestrian plan.

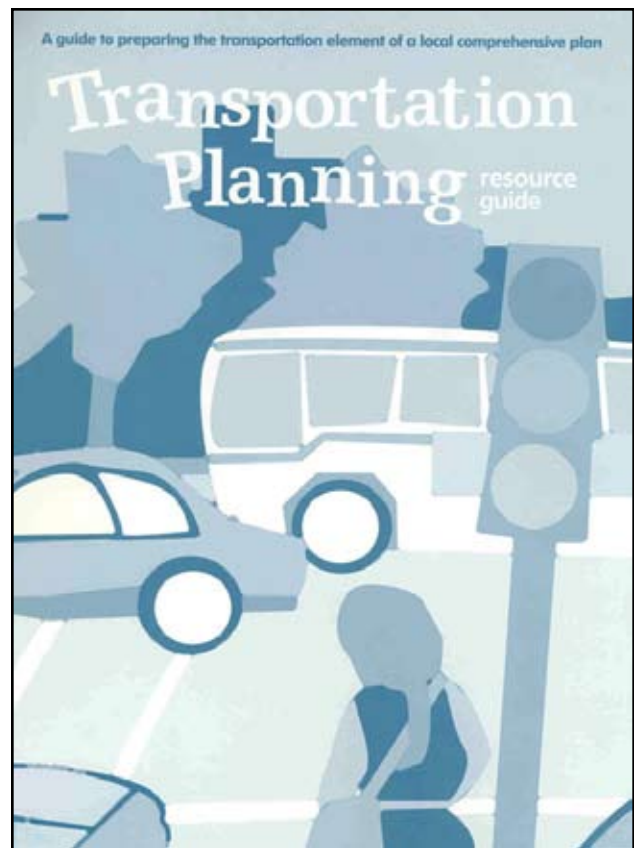
Following the steps in this guide, recommendations can be divided into two broad categories:

- Those that lead to physical changes in pedestrian facilities (including those related to education and enforcement programs)
- Those that lead to changes in design standards, ordinances, processes and practices

The implementation strategy should identify the key people who will carry out responsibilities and the timing for completion of improvements or provision of services. Actions can be divided into short, intermediate and long term timeframes. Actions should be placed into the appropriate timeframe after considering the complexity, cost and urgency of the action. For example, the creation of a sidewalk ordinance or a change in the subdivision ordinance to require sidewalks may be the most pressing need. On the other hand, a change to a community's land use plan to reflect pedestrian priorities may wait until the plan undergoes an update in a year.

Small and simple to implement measures are often done first. This creates visibility, support and momentum for change. Higher crash locations, critical sidewalk gaps, and accessibility problems may also have a high priority.

The implementation strategy should also discuss how projects would be funded. Funding is a key provision for any type of retrofit program. Funding options can include a line item in the



*Exhibit 4-16: WisDOT prepared a guide to help communities develop the transportation element of their comprehensive plan.*

municipal budget to cover the regular, predictable level of work or special assessments for larger projects such as replacing concrete slabs, street reconstructions with sidewalk replacement, and installation of original sidewalks. See Chapter 9 Funding for Pedestrian Facilities and Programs.

#### 4.5. Integrating pedestrian planning into other plans

The field of transportation planning has broadened over the past 20 years to reflect opportunities to include all transportation modes. In years past, it was unlikely that pedestrians were considered in long-range transportation plans or in comprehensive community plans. Now pedestrians are often included in these plans, although the level of discussion may vary. This section identifies planning processes that affect pedestrians and suggests ways of incorporating their needs in a meaningful way. The main planning processes covered are:

- Community comprehensive planning
- Long-range transportation planning

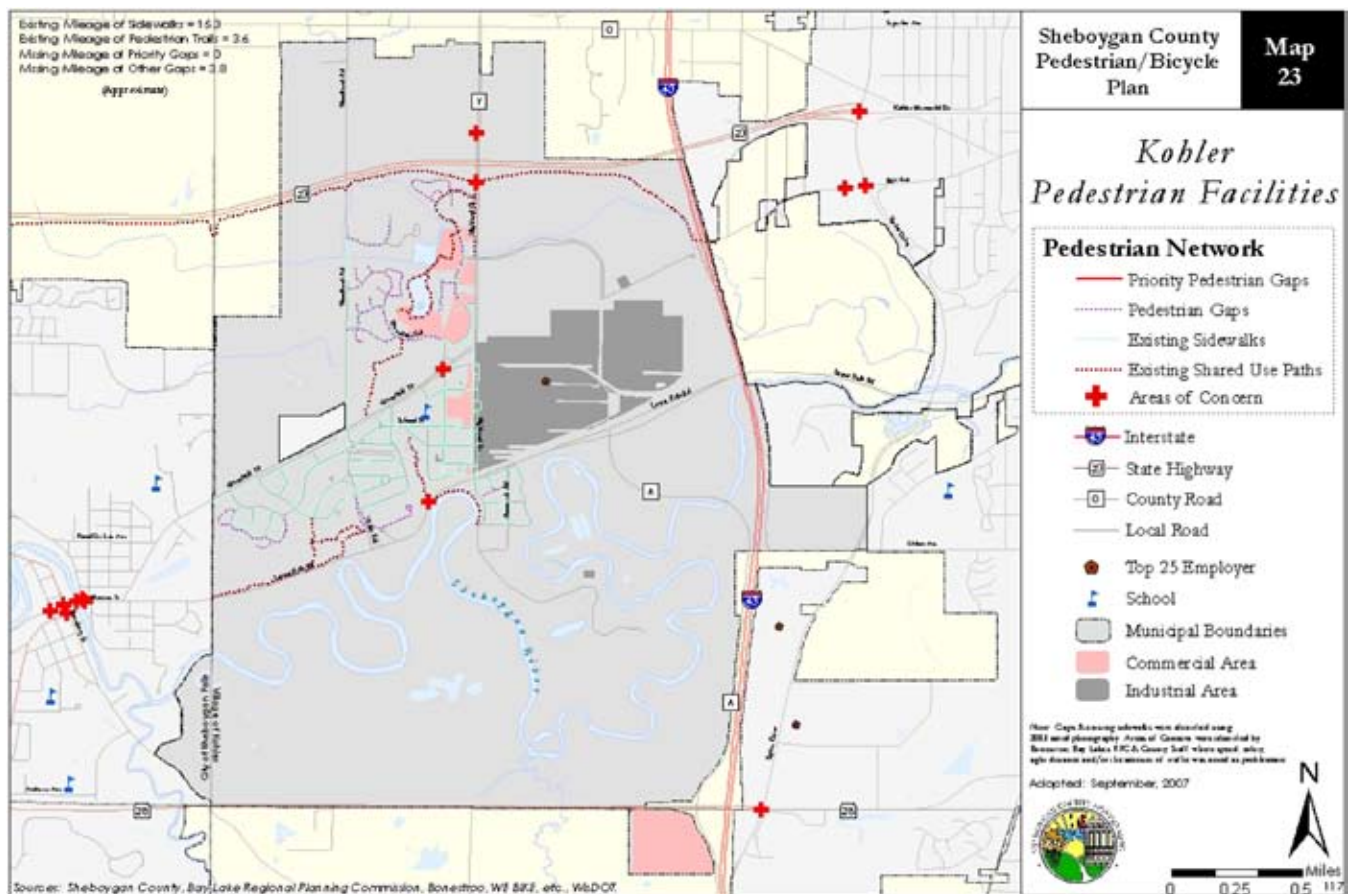


Exhibit 4-17: Conducting an inventory of existing pedestrian transportation facilities is necessary to establish a needs assessment for long-range transportation plans.

- Land use planning
- Transit planning
- Other plans

#### 4.5.1. COMPREHENSIVE COMMUNITY PLANNING

Wisconsin towns, villages, cities and counties are required to have comprehensive community plans if they engage in official mapping, subdivision regulation or zoning. These plans must include land use and transportation elements. Land use is a critical consideration in determining how viable and conducive the built environment will be for supporting pedestrian travel. To be comprehensive, the transportation element must address pedestrian circulation as well as other modes. WisDOT produced a guide that summarizes how to prepare the transportation element of a comprehensive plan (Exhibit 4-16).

Similar to long-range transportation plans or free-standing pedestrian plans, comprehensive community plans should inventory pedestrian

facilities, identify gaps in the pedestrian system, list key projects, and review current practices and policies that support the pedestrian environment. The review should include any recommended changes to the community’s sidewalk ordinance, subdivision and zoning ordinances, and typical street cross-sections to include sidewalks on all future projects. Since land use planning should be considered along with transportation planning, strong consideration should be given to how land uses and densities can be organized to encourage walking. Mixed land uses and the arrangement of residential development with easy and safe access to schools are one part of how land use fits into the pedestrian element. See Chapter 3 for more information on how land use relates to the pedestrian environment.

#### 4.5.2. LONG-RANGE TRANSPORTATION PLANNING

MPOs and WisDOT conduct most of Wisconsin’s long-range transportation planning. Long-range transportation plans must include all

modes of travel. While creating an independent pedestrian plan is not required, WisDOT and some MPOs have prepared them. Independent pedestrian plans offer an opportunity to provide guidance to communities, identify key pedestrian projects, and raise awareness of the needs of pedestrians. In most cases, MPOs will not have independent pedestrian plans, thus, the long-range plan may be the only planning document that addresses pedestrians at the metropolitan level. When pedestrians are addressed in long-range transportation plans, the same steps are typically followed as if an independent pedestrian plan being prepared, however, the level of detail and scope of the integrated plan will be much broader as compared to a free-standing pedestrian plan.

Long-range transportation plans should include an inventory of transportation facilities (Exhibit 4-17). The plans should also analyze pedestrian crashes. Using Geographic Information Systems can help locate and potentially identify high crash areas. The inventory and crash analysis help identify and prioritize key pedestrian projects or may identify how pedestrians can be better accommodated in roadway or intersection projects. Funding strategies may result in targeting certain reconstruction projects based in part on the need to make key pedestrian connections or to address critical pedestrian crash problems.

Second, new models are available that identify pedestrian “levels of service” (LOS). Choose a LOS tool that can rate the service for just pedestrians or a multi-modal level of service tool that can be used to see how changes in roadway characteristics can simultaneously affect the different levels of service for pedestrians, motorists, bicyclists and transit users.

Most Wisconsin MPOs do not include pedestrian travel when modeling regional transportation demand. The models typically used are not capable of taking the projected non-motorized trips and projecting travel mode changes based on assumed land use/site design. However, including pedestrians in travel demand forecasts increases the likelihood that pedestrians will be accommodated in the project development process. An overview of the most widely used models that are capable of forecasting travel demand for pedestrians is included in the FHWA publication: Guidebook on Method to Estimate Non-Motorized Travel. Volume 1, Overview of Methods (Exhibit 4-18)

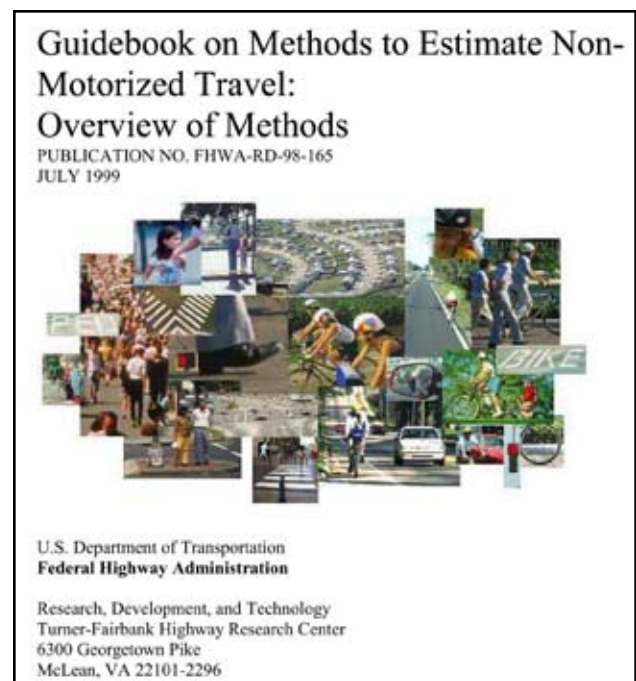


Exhibit 4-18: Modeling pedestrian travel in the regional transportation demand process increases the likelihood that pedestrians are accommodated during project development.

and Volume 2, Supporting Documentation. The guidebooks are available on the Federal Highway Administration’s Web site. [http://safety.fhwa.dot.gov/ped\\_bike/docs/guidebook1.pdf](http://safety.fhwa.dot.gov/ped_bike/docs/guidebook1.pdf) and <http://www.fhwa.dot.gov/tfbrc/safety/pubs/vol2/contents.htm>

### 4.5.3. LAND USE PLANS

Some communities may develop independent land use plans. These plans offer an opportunity to include pedestrian considerations. Similar to comprehensive community plans, land use plans need to consider the arrangement and compactness of land uses to maximize pedestrian travel. Recommendations on the land use plan’s implementation tools—zoning and subdivision ordinances—should be thoroughly reviewed and changed to include the provision of sidewalks. Since it is becoming more common for land use plans to have a staging element (when certain areas of a city are proposed to be developed), recommendations can be made on how and when key pedestrian linkages will be made to existing development.

### 4.5.4. TRANSIT PLANS

Pedestrian and transit travel are dependent on each other. Any opportunity to reinforce this relationship by recognizing and considering pedestrians in transit plans and studies is both appropriate and



*Exhibit 4-19: In addition to upgrades and improvements in transit service, an accessibility study can determine what types of access improvements are needed.*

important. Long-range transportation plans typically include a transit element as well as a pedestrian element. A connection should be drawn between these two elements in the plan.

Transit studies are conducted independent of the long-range transportation plan. For example, transit operational studies often review new and existing transit lines to consider changes in service. It is important for these studies to consider pedestrian circulation to transit routes since the success of any implemented change is dependent on pedestrian access. To be effective, these studies also need to recommend access and crossing improvements to key bus stops and hubs.

Another common type of transit plan is the four-year Transit Development Program (TDP). Required by state administrative rule from all public transit providers, the TDP is a strategic plan covering budgetary needs and near term transit improvements. Its focus is meeting the system's route, service and capital needs. TDPs often focus on route improvements and service upgrades in select areas. Improvements to the pedestrian environment along the selected routes can be coordinated with the service improvements.

ADA related accessibility studies are another type of transit study. Accessibility studies are often conducted to determine what types of access improvements (such as curb ramps, sidewalk additions and transit platforms) should be made. Improving access to bus stops can reduce paratransit costs and make independent travel easier for people with disabilities (Exhibit 4-19). Study results can be implemented through the TDP or the capitol improvement budget.

#### 4.5.5. OTHER PLANS

Communities may prepare smaller area plans for neighborhoods, commercial districts or downtowns. These plans provide opportunities to study and recommend pedestrian improvements, such as identifying missing sidewalk sections or intersection crossing problems. Plan recommendations should include the type and location of crossing improvements. For example, are pedestrian refuge medians feasible and recommended for certain intersections or mid-block locations?

Neighborhood plans or sub-area plans are often completed for newly developing areas of a community. These plans can address pedestrian access and circulation, and ensure that pedestrian facilities are included in the development.

Downtown plans often identify pedestrian amenities. These plans should also identify the improvements needed to make sidewalks more accessible.

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#### 4.6. Conducting project-level planning

Considering pedestrian accommodations in project-level planning is one of the best ways to include appropriate pedestrian facilities. If pedestrian considerations are absent from the project development process, it is unlikely appropriate facilities will be developed. Project-level planning may occur before or as part of the design stage of major street and highway projects. Larger transportation organizations typically have planners that evaluate proposed roadway projects to identify necessary pedestrian features. This is often considered the start of a project's preliminary engineering phase.

A U.S. Department of Transportation policy requires pedestrian facilities be included on urban and suburban projects unless a substantiated reason is given to the contrary. WisDOT's Wisconsin Pedestrian Policy Plan 2020 supports this policy. In addition, WisDOT will pay for a minimum of 80 percent of the sidewalk costs on state highway reconstruction or new state highway projects.

Pedestrian crash locations are identified during project-level planning. Categorizing the crashes by motor vehicle-pedestrian crash types can identify any common crashes along the stretch of roadway. A small cluster of crashes at an

intersection may suggest the need to consider pedestrian-related treatments at that intersection such as a median, improved crosswalk alignment, or a change to the timing of a pedestrian signal.

During project-level planning, it is also appropriate to consider design measures that will keep motorists traveling at or below the design speed of the roadway. In some cases, this may involve traffic calming devices. Similarly, designs should consider the buffer width between the travel lanes and sidewalks, which should be increased as speed and volume of traffic increases.

Finally, crossing measures are considered to ensure frequent and safe opportunities to cross the street. Pedestrian crossing treatments, especially median refuges at non-signalized intersections, are essential to include into the plan wherever possible.

This planning step may be a straightforward, elementary step, but its implications for pedestrian travel on major streets are immense. Major streets lacking pedestrian facilities will most often lead to an increase in pedestrian crashes and a failure to provide an adequate pedestrian Level of Service.

## 4.7. Producing specialty pedestrian plans

Section 4.4 discussed the importance of free-standing or independent pedestrian plans. There are also opportunities to develop specialized plans aimed at a specific pedestrian issue. The Pedestrian Safety Action Plan and the Safe Routes to School Plan are examples of specialized plans.

### 4.7.1. PEDESTRIAN SAFETY ACTION PLAN

Use a Pedestrian Safety Action Plan to guide the improvement of pedestrian safety through street redesign, engineering-related treatments, and programs that involve the whole community. A unique feature of this plan is that it brings together a team of community officials and stakeholders who are responsible for developing and implementing it. Early and committed involvement from community officials and stakeholders is critical to the plan's success.

The development of a Pedestrian Safety Action Plan includes:

- ▶ Defining pedestrian safety goals and objectives

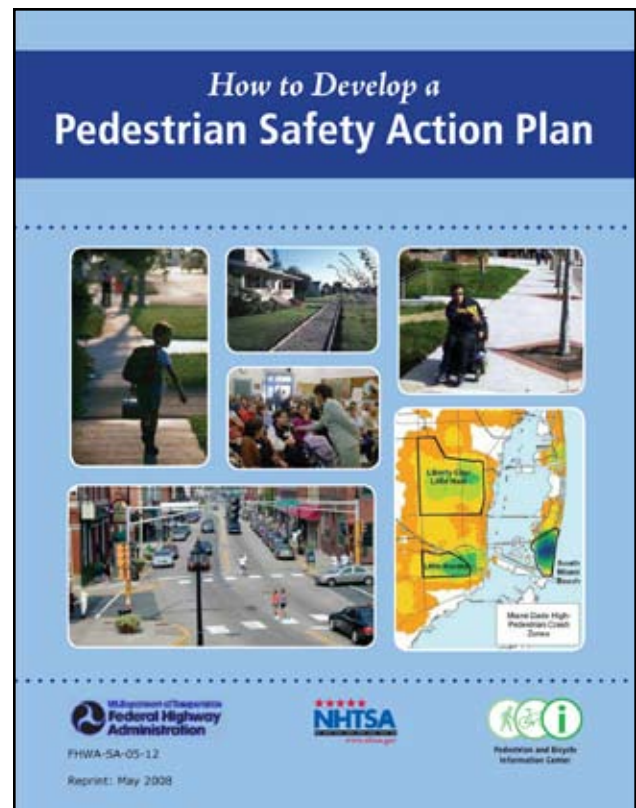


Exhibit 4-20: Separate pedestrian safety plans can be produced to address specific problems.

- ▶ Analyzing baseline conditions and identifying locations for improving safety
- ▶ Selecting appropriate treatments and developing an implementation strategy
- ▶ Institutionalizing changes to planning and design standards
- ▶ Considering land use, zoning and site design issues
- ▶ Reinforcing commitment to pedestrian safety and evaluating results

The Federal Highway Administration has developed a course curriculum and a comprehensive guide that gives assistance on developing a Pedestrian Safety Action Plan (Exhibit 4-20). The guide is available at <http://drusilla.bsrc.unc.edu/cms/downloads/howtguide2006.pdf>.

Pedestrian Safety Action Plans were initially directed at states and communities that had high pedestrian-motor vehicle crash rates. However, these plans have been expanded to other states and communities. While the development approach is similar to the process used for a stand-alone community pedestrian plan, there is



Exhibit 4-21: Pedestrian conditions near schools deserve special consideration. Marked crosswalks and the use of crossing guards are potential solutions to create safe routes for children walking to school.



Exhibit 4-22: Safe Routes to School planning concentrates on pedestrian routes that allow children to travel safely to school.

a greater emphasis on safety and the mitigation of crashes in a Pedestrian Safety Action Plan. Communities should consider developing an action plan if they can get a strong commitment from department officials (such as the planning director, public works director and police chief) and other local officials (such as the school district administrator) to develop and implement the plan around the community's crash problem.

#### 4.7.2. SAFE ROUTES TO SCHOOL PLAN

There is a well-documented decline in the number of students walking to school. This decline has raised concerns among school officials, health professionals, and community and transportation officials. In Wisconsin, the number of students walking to school has also declined. However, a closer examination of the pattern reveals that the number of students walking (or bicycling) to some elementary and middle schools has stayed

at a high level. For example, some elementary schools in the Green Bay school district have less than 5 percent of their students walking to school, while other elementary schools in the district have more than 90 percent.

While community pedestrian plans consider the needs of all pedestrians in a community, a Safe Routes to School (SRTS) plan concentrates on children in kindergarten through eighth grade living within a two-mile radius of a school or cluster of schools (Exhibit 4-21). SRTS plans concentrate on a specific trip type, within well-defined corridors and zones, and often for a wide age range of children. Additionally, the level of detail of these plans is much greater and ranges from working at the neighborhood level (sub-areas of a community) to the school site itself.

In many school districts, bussing is provided for students who live one or more miles from the school or closer if a hazardous street has been declared that forms a crossing barrier. Children within the one-mile radius of the school can walk, bicycle or be driven to school. The last option has caused concern to many school officials who have had to develop vehicle circulation plans for their school sites to accommodate the increased traffic. This has created a circular problem as other parents, recognizing the increase in traffic, begin driving their children to school.

SRTS plans concentrate efforts within and at the periphery of the walking and bicycling zone. This zone is generally one mile in diameter with the school at the core. Within the zone, walking corridors are defined that form connections between neighborhoods and the schools.

SRTS plans often include some or all of the following elements:

- Inventory of existing conditions, problems and issues, often including a walking and bicycling audit
- Recommended facility improvements including additions such as crosswalks, sidewalks, traffic signals, and traffic calming measures (Exhibit 4-22)
- Education and enforcement efforts directed at students, parents and drivers
- School site design and circulation
- Recommendations for the siting of new schools

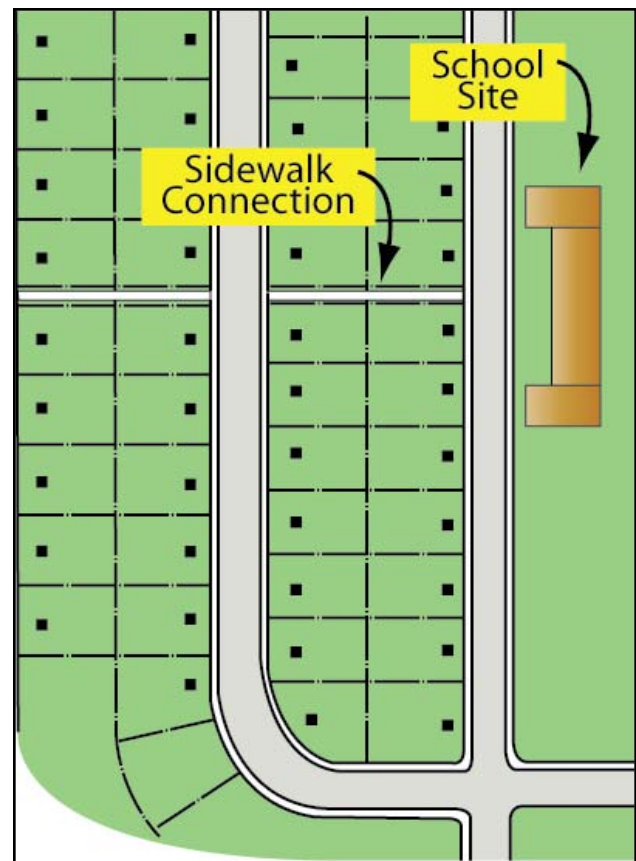




*Exhibit 4-23: Safe Routes to School audits use a multi-disciplinary team of volunteers to review locations and travel corridors used by child pedestrians. The volunteers note deficiencies and potential problems that children may experience on their way to school.*

WisDOT recommends establishing a SRTS Task Force to develop a SRTS program. This same task force can be involved in the development of the plan, beginning with a walking and bicycling audit. The audits are important tools to help identify the current conditions near the school. Maps showing enrollment boundaries, bus eligibility and student locations are important tools in conducting the walking and bicycling audit. To conduct the audit, volunteers walk and bicycle on nearby streets that children could use to get to school (Exhibit 4-23). The volunteers map any problems that are noticed. When all of the streets have been walked and biked, these problems are compiled into one map. Volunteers may also take photographs to further document any problems.

Pedestrian facility recommendations are often one of the most involved elements of a plan since they utilize school and neighborhood participation. Engineering cost estimates are often necessary. Staging of improvements is a good planning strategy. It is often appropriate to begin improvements with the most critical links on the busiest corridors or those immediately adjacent to the school site, and then continue to feeder streets to the main corridors. Plans usually include specific street locations for traffic calming measures. Recommended intersection and street crossing improvements are critical to bridging hazardous streets, and may relieve or aid school crossing guards.



*Exhibit 4-24: Making connections between neighborhoods and schools may be one engineering solution used to facilitate children walking to school.*

School site design is the most detailed component of a SRTS plan. The safety of pedestrians and bicyclists need to take special importance in and around the school site. Whenever possible, school bus loading and unloading should occur on-site. If unloading occurs on street, it should take place on the same side of the road as the school. The building should be accessible to pedestrians and bicyclists on as many sides as possible, encouraging connections to the school where motorists are not present. Connecting paths and sidewalks to adjacent neighborhoods to the sides or rear of the school may allow a segment of the neighborhood population to avoid any motorist conflicts (Exhibit 4-24). Finally, the delineation of crossings and walking facilities should intensify as the students near the school site. The design of school sites is discussed in further detail in Chapter 3.

WisDOT's Safe Routes to School program funds planning efforts in the state. The program is competitive, and WisDOT typically receives more requests than it can fund. Communities are encouraged to proceed with SRTS planning using their own resources if state funding is not available. Schools often begin by planning for education and enforcement efforts, and later develop a pedestrian facilities element. For example, in the City of Superior, students and parents were surveyed to identify safety issues around each of the six schools examined in the Superior SRTS Plan. Some of the safety issues identified by the students and parents included the lack of crossing guards, unshoveled sidewalks and busy, unsafe roads. These issues were used to identify recommendations. A more complete planning guide is included in a SRTS toolbox found on WisDOT's Web site.