

Chapter 7

Bike and Pedestrian

7.1 Introduction

With passage of SAFETEA-LU in 2005 the needs and safety of the non-motorized segment of the transportation system were specified for inclusion in metropolitan transportation plans. Guidance from FHWA suggests the following elements of a non-motorized transportation plan:

- Vision and goal statements,
- Assessment of current conditions and needs,
- Identification of activities required to meet the vision and goals developed above,
- Implementation of bicycle and pedestrian elements in the Statewide and MPO transportation plan and transportation improvement program,
- Evaluation of progress, and
- Public involvement.

In addition, it is recommended that the implementation phase of the program consist of more than just infrastructure projects. Projects or programs aimed at education and enforcement are important elements contributing to a safe non-motorized transportation system.

The recent nature of the Houma-Thibodaux non-motorized network is reflected in the plan presented here. The main goals at this stage are to lay the groundwork for a more comprehensive bicycle and pedestrian plan and to formalize the process of including non-motorized transportation goals in the overall transportation planning process.

Therefore, the non-motorized transportation goals for the Houma-Thibodaux area are:

- Create a bicycle/pedestrian advisory panel,
- Develop bicycle/pedestrian access between the Thibodaux CBD, Nicholls State University and the Thibodaux Regional Medical Center,
- Include bicycle and pedestrian facilities in all street projects,
- Build ADA-compliant pedestrian facilities,
- Connect existing pedestrian infrastructure,

- Collect crash data with the objective of increasing the safety of pedestrians and bicyclists, and
- Evaluate current regulations that pertain to bicyclists, pedestrians, and bicycle/ pedestrian infrastructure and update as needed.

7.2 Users of the Non-Motorized Transportation System

Planning for bicyclists and pedestrians requires an understanding of their characteristics. While bicyclists and pedestrians are often considered together as users of the transportation system, they are actually very different. One thing they share in common is vulnerability in crashes with motor vehicles. Both are susceptible to suffer major and sometimes fatal injuries in crashes with motor vehicles – even at relatively low speeds. Bicyclists and pedestrians have different characteristics that guide the design of facilities that are safe and appropriate.

7.2.1 Characteristics of Pedestrians as Travelers

Besides their vulnerability in crashes with motor vehicles, pedestrians do not have one set of defining characteristics. They can be generally divided into children, teens, adults, and senior adults. Children are still learning the rules of the road. In addition they can be impulsive and act unpredictably. Since they are short they can be difficult for drivers to see when drivers are coming over a hill, when children are walking in roadside ditches, or when children are standing between parked vehicles.

Teens have increased experience but often have a feeling of invulnerability. They have the physical prowess to walk or bike relatively long distances and teenagers are generally responsible enough to travel by themselves or with other teenagers. They also use alternative means of transportation such as skates and skateboards.

Adults are active and tend to be more aware than teens of the relevant elements of the transportation system. They have good peripheral vision (which can be poor in both younger and older people).

Senior adults often experience a loss in vision, agility, speed, balance, concentration, and strength. Those who are beginning to suffer from hearing loss may not hear a motor vehicle approaching from outside their field of vision. Low light conditions make it difficult for senior adults to see.

Users of the pedestrian transportation system may also include the persons with disabilities. People who are blind, in wheelchairs, or otherwise impaired in their ability to navigate the environment require certain conditions in order to safely travel.

A good pedestrian system is one that is continuous and connects people to desired destinations. When pedestrians can travel in a predictable manner (for example, not having to move into the street because the area on the curb is overgrown) there is an increased atmosphere of safety.

7.2.2 Characteristics of Bicyclists as Travelers

In Louisiana bicycles are considered “vehicles” and they may use all the streets and highways unless a particular facility specifically prohibits use. In general bicyclists travel faster than pedestrians and as quickly as slow motor vehicles. The American Association of State Highway and Transportation Officials (AASHTO) divide bicyclists into three categories:

- A – advanced
- B – basic
- C – children

Advanced bicyclists are skilled riders and prefer a direct route to their destination. They are comfortable riding in traffic. Basic bicyclists are able riders but less confident sharing facilities with motor vehicles. They prefer quiet neighborhood streets or exclusive-use facilities. Children cannot travel as fast as adults and should be directed to facilities away from heavy motor vehicle use. Their key destinations are schools, convenience stores, and recreational facilities.

7.2.3 Potential Users of the Non-Motorized Transportation System

There are potentially many thousands of people in the Houma-Thibodaux area that must rely on the non-motorized transportation system. These potential users fall into several categories. Although some categories may overlap, these figures may make up a sizeable portion of the community.

According to the 2005-2007 Census Bureau estimate, one-fourth of the people in the Houma-Bayou Cane-Thibodaux area are either between the ages of 5 and 14 or over 65. The census data for the inter-census period does not break down age groups to easily determine who is younger than the driving age.

Another way to approximate the number of people who might depend upon the non-motorized transportation system is to look at how many households have more workers than automobiles. In the Houma-Bayou Cane-Thibodaux area approximately 6,100 households that have fewer vehicles than workers.

Two other indicators of the magnitude of the population who must rely on non-motorized transportation are the poverty rate and the number of people with disabilities. In the Houma-Bayou Cane-Thibodaux area 13.2% of families had an income below the poverty level in the previous twelve months. Similarly, one-fifth of the population 5 years and older have at least one disability.

7.3 The Non-Motorized Transportation System: Elements and Design Guidelines

As the motor vehicle system is made up of various pieces such as roads, signals, signs, and markings, so is the non-motorized transportation system. The elements of the motor vehicle system are standardized due to the work of the American Association of State Highway and Transportation Officials

(AASHTO) and these design guidelines are gathered in a volume known as The Green Book. The size and use of signs and markings are disseminated through the Manual of Uniform Traffic Control Devices (MUTCD). The MUTCD has chapters devoted to bicycle facilities and school areas and subsections of other parts devoted to pedestrian facilities. Standardization allows people to travel throughout the U.S. (and in many parts of the world) knowing that signals, signs, and markings will be uniform. Similarly, AASHTO has produced Green Books for pedestrian and bicycle transportation systems. This section describes the general elements of the bicycle and pedestrian system and presents design guidelines as recommended in AASHTO.

7.3.1 Elements of the Pedestrian Transportation System

The elements of the pedestrian transportation system are:

- Trails (described in a separate subsection below),
- Sidewalks (including ramps),
- Crossings (including crosswalks, midblock crossings and grade-separated crossings),
- Pedestrian-friendly signals,
- Signs, and
- Lighting and other amenities.

AASHTO recommends a landscaped buffer be provided between a sidewalk and a street. The minimum recommended width of the buffer varies depending on the type of street as shown in Table 7-1.

Table 7-1 AASHTO Recommendations for Landscaped Buffer Widths	
Type of Road	Recommended Buffer Width
Local or collector	2 -4 feet
Arterial or major street	5 -6 feet

The minimum recommended specifications for other elements of the pedestrian system are summarized in Table 7-2. The elements of a curb ramp are shown in Figure 7-1 and the allowed types of crosswalks are shown in Figure 7-2.

Table 7-2	
Summary of AASHTO Minimum Standards for Elements of the Pedestrian Transportation System	
Sidewalks	
Effective width	4 feet, 5 feet periodically for passing
Shy distance	2 feet from buildings, less for less massive objects
Buffer width	2-4 feet from local or collector road
	5-6 feet from arterial or major street
Grade	No more than 5%
	Cross slopes should not exceed 2%
Stairs	Minimum width of 42" with handrail on one side that extends 12" beyond top and bottom stair
Ramps	Minimum 4 foot clear path ending in at least 2 feet of tactile warning
Grade-separated Crossings	
Bridges	Open bridge for pedestrians only - 8 feet minimum width
	Enclosed bridge – 14 feet minimum width
Tunnels	Rural tunnels – 12 feet minimum width
Pedestrian-friendly Signals	Standard is moving to "countdown" signals
Signs	Should provide timely information to motorists and pedestrians where and when pedestrians may be present – should not impede clear path for pedestrians
Lighting and Other Amenities	All elements should be scaled for pedestrians and not impede the clear path

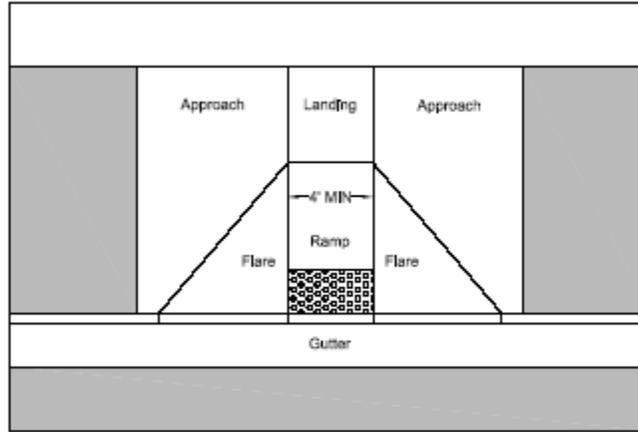


Figure 7 - 1: Elements of a curb ramp

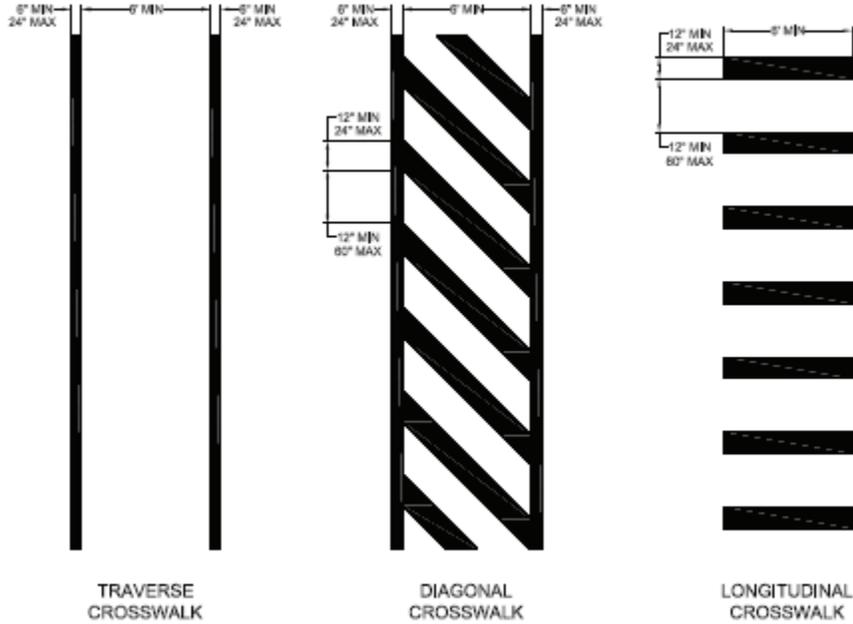


Figure 7 - 2: Crosswalk types allowed in the MUTCD

7.3.2 Criteria for Choosing Pedestrian Projects

The first step is to determine project prioritization. Some projects are new and easily incorporated into a project built on undeveloped land. Sometimes the project may be a change to existing conditions - a retrofit. The AASHTO Green Book for pedestrians proposes the following criteria for developing priorities on retrofitting streets:

- Existing pedestrian volumes,
- Presence of major pedestrian generators,
- Traffic speed,
- Street classification (with priority for arterial streets),
- Crash data,
- School walking zones,
- Transit routes,
- Urban centers/Neighborhood commercial areas,
- Disadvantaged neighborhoods,
- Missing links,
- Neighborhood priorities,
- Activity type (such as rollerblading, scootering, etc.),
- Transition plan improvements,
- Citizen requests, and
- Street resurfacing programs (taking advantage of planned rebuilding and rehabilitation).

An alternate way to consider the implementation of a sidewalk policy is a phased approach. In this case an area may specify setting aside right-of-way for future sidewalks. The area may then adopt a “trigger” for when the sidewalk must be built. For example, sidewalks may be required when the road is rebuilt from open ditch to curb and subsurface drainage. Other triggers include distance from a school, availability of transit, and a certain residential density. Funding for the future sidewalk is also an important element of a sidewalk policy. An area may require developers that are not required to build sidewalks as part of the development construction project to pay into a future sidewalk fund.



Figure 7 - 3: Pedestrian crossing marked with crosswalk and signs

7.3.3 Elements of the Bicycle Transportation System

The elements of the bicycle transportation system are:

- Trails (described in section 7.4 below),
- Bicycle lanes,
- Shared lanes,
- Bicycle-friendly intersections,
- Signs, and
- Parking.

A summary of the minimum standards recommended by AASHTO for elements of the bicycle transportation system are presented in Table 7-3. Figure 7-4 shows the profiles of streets with bicycle lanes with and without on-street parking.

Table 7-3 Summary of AASHTO Minimum Standards for Elements of the Bicycle Transportation System	
Bicycle Lanes	4 feet clear width to lip of gutter pan
Shared Lanes	14 feet minimum outside lane
Signs	Should provide timely information to motorists and bicyclists where and when bicyclists may be present – should not impede clear path for bicyclists
Parking	Bicyclists should be able to secure the frame and front and back tires

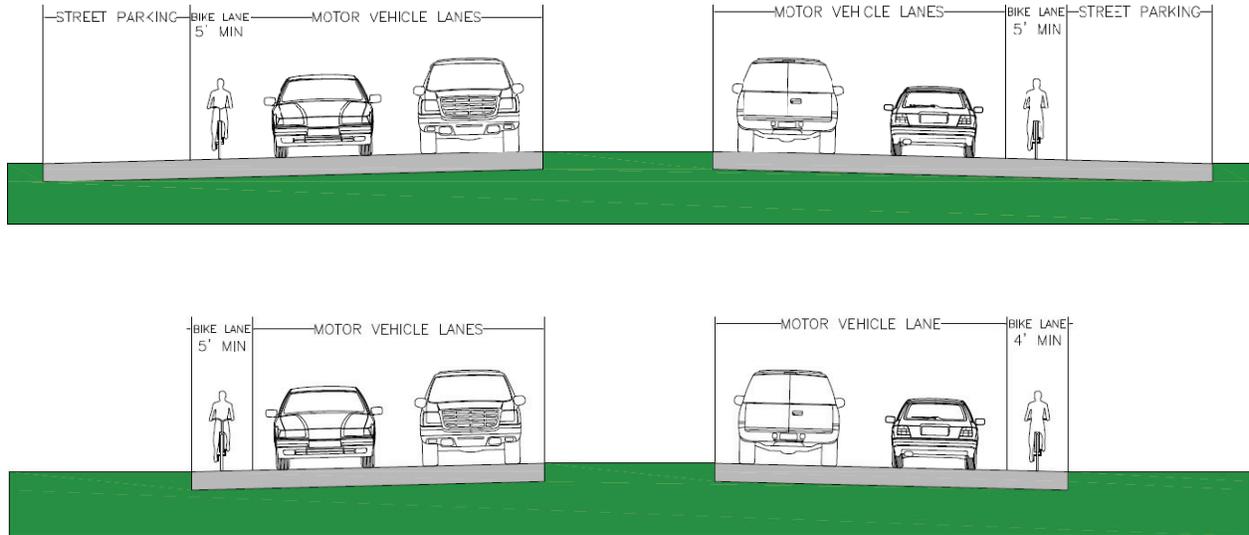


Figure 7 - 4: Profiles of Streets with Bicycle Lanes – With and Without On-Street Parking

7.3.4 Criteria for Bicycle Transportation System

The different elements of the bicycle transportation system combine in various ways with the motorized transportation system. Table 7-4 offers some criteria to use in determining which elements may be most appropriate.

Table 7-4 Criteria for Choosing Bicycle Transportation System Elements		
Avg. No. of Vehicles per Day	Roadway Functional Classification	Recommended Bikeway Facility
≤3,000	local service street	no additional facilities, unless specified as bicycle boulevard or signed connection
>3,000	local service street	bicycle lanes or traffic calming
≥3,000 <10,000	neighborhood collector	bicycle lanes or traffic calming
≥10,000 <20,000	neighborhood collector and higher classifications	bicycle lanes or traffic calming
≥20,000	neighborhood collector and higher classifications	bicycle lanes or facility parallel to roadway



Figure 7-5: Bicycle racks can be a local amenity

7.4 Trails

These facilities are open to pedestrians, joggers, and walkers, usually in close proximity to a larger recreational facility, such as a park or athletic field. The anticipated volume of pedestrians using these facilities is low; otherwise, conflict between bicyclists, joggers, and pedestrians may become an issue. One solution regarding access management to mixed-use trails is to institute a standard protocol for the facility. For example, inform pedestrians to yield to bicyclists, or vice versa, and place instructional signs informing users how to announce the intention to pass. Multi-use trails are recommended to be a minimum of 10 feet wide to accommodate both bicyclists and pedestrians.

7.5 Intersections/Crossings

A good intersection is essential in order to encourage use by pedestrians and others. AASHTO recommends the following qualities of a good intersection:

- Clarity – easy for motorists and pedestrians to see one another,
- Predictability – crosswalks should be predictable,
- Visibility – the crosswalk should be easily visible to motorists and while in use the motorist and pedestrian should be easily visible to one another,
- Short wait – studies show after approximately 30 seconds pedestrians will try and cross,
- Adequate crossing time for all users,
- Limited exposure – minimize potential conflict points between motorists and pedestrians, and
- Clear crossing – no barriers or obstacles in the crosswalk.