

## **INTRODUCTION**

Transportation planners, highway engineers and bicycle and pedestrian advocacy groups are faced with the challenge of balancing competing interests in a limited amount of right-of-way, while developing a multimodal transportation infrastructure that provides access for all and safety in equal measure for each mode of travel. Mississippi's transportation system must be balanced, accessible and safe for all citizens. A comprehensive analysis of various modal choices, including nonmotorized alternatives, is essential to reaching this balance.

As bicycling and walking continue to gain momentum and become more prominent as alternative transportation modes, new issues and concerns constantly arise. Safety, connectivity, funding opportunities, and coordination with local areas are opportunity areas that are addressed within this MULTIPLAN. Safety issues assessed include the availability of paved shoulders on rural two-lane roadways and relevant accessibility issues. Connectivity opportunities include ensuring that local area trails connect to larger systems, such as the signed Mississippi River Trail. With regard to funding opportunities, MDOT has used TEA-21 Enhancement funds to implement bicycle and pedestrian improvements. MDOT also has the ability to provide technical assistance to local areas planning and designing bicycle and pedestrian facilities.

While nonmotorized modes represent a small portion of Mississippi's transportation network, it is important to institutionalize planning for such facilities. By formalizing the methods by which bicycle and pedestrian issues are considered, the transportation system can be developed in a cost-effective way that fairly treats all transportation users. Such an approach can improve mobility and safety, reduce energy consumption, improve air quality, offer opportunities for a healthier lifestyle and improve access to recreation.

## **EXISTING CONDITIONS**

### **Programs and Policies**

Mississippi has had a Bike and Pedestrian Coordinator since 1992, with duties split between bicycle/pedestrian projects and other MDOT duties. With respect to bicycle/pedestrian projects, the Coordinator's duties include:

- Planning and managing programs in the area of non-motorized accommodations;
- Acting as the principal contact with Federal, State and local agencies and individuals on matters related to bicycles and pedestrians;
- Reviewing bicycle and pedestrian projects for conformity with design standards (generally local government Enhancement projects);
- Providing bicycle and pedestrian information to the public upon request; and

- Assisting MDOT Divisions and Districts with issues concerning non-motorized transportation.

Owing to Mississippi's rural nature, lack of urban congestion when compared to other states, and low gas costs, less emphasis has been placed on bicycle/pedestrian policy planning, with the priority placed on the state's highway construction program (including the Four-Lane Highway Program). There are currently no significant state laws regarding bicycle/pedestrian planning or funding. Since 1997, the only reference to bicycles in the legislative process has been the introduction of House Bill 1194 in 1997, which would have amended Section 63-7-64, Mississippi Code of 1972, requiring "persons under the age of sixteen years to wear an approved bicycle helmet when operating a bicycle on any public road, street, highway in this state; and for related purposes." This bill died in committee. Legislation introduced through House Bill 1189 in 1998 was similar except that the age requirement was reduced to 12 years of age. This bill also died in committee.

MDOT considers bicycle accommodations when appropriate as required by FHWA on federal aid projects. This accommodation typically applies to safety provisions in areas where bicycle use is prevalent.

### **Advisory Committees and Advocacy Groups**

There is no advisory committee within MDOT to specifically address bicycle and pedestrian issues. The committee appointed to review and recommend Enhancement projects for funding does include representation from the Bicycle Advocacy Group of Mississippi (BAGM). There is no knowledge of any local or regional bicycle/pedestrian advisory committees.

BAGM is a statewide bicycle and pedestrian advocacy group with the following objectives:

- To increase public awareness regarding non-motorized alternatives to the private automobile;
- To work with public and private agencies to improve access to and utilization of existing transportation networks by cyclists and pedestrians;
- To provide input regarding the needs of cyclists and pedestrians during the planning, development and construction of transportation related projects;
- To work with government officials to promote the safe use of transportation networks by motorists, cyclists and pedestrians;
- To serve as a state level clearinghouse for bicycle educational information, activities and resources;

### **Existing Plans**

Historically, there has been little in the way of true planning efforts in the state addressing bicycle and pedestrian issues. MDOT has funded three projects/phases of

the Ross Barnett Reservoir Plan. The Central Mississippi Planning and Development District has worked with the City of Jackson and the Pearl River Valley Water Supply District (management agency for the Barnett Reservoir area) on various bicycle plans. The Gulf Coast Regional Planning Commission has in the past developed a bicycle plan. MDOT has provided assistance to the City of Jackson and the Pearl to Leaf Rivers Rails to Trails District for purchasing abandoned rail corridors. For the most part, though, abandoned rail corridors purchased for conversion to bicycle/pedestrian trails have been through local governments as part of Enhancement projects.

### **Existing Facilities**

For the most part, possibly owing to Mississippi's rural nature, there has not been sufficient use or demand to justify the consistent development of bicycle and pedestrian facilities, aside from select urban and university areas. Sidewalks are to be considered in urban design projects. While there have been Enhancement projects along the coast with respect to on-street bike lanes, in most cases projects have been off-street, or completely different facilities. While the state has a number of roadways without paved shoulders, many of the rural two-lane facilities have low traffic volumes to the point that safe bicycle travel may be possible. The majority of the interest in bicycle and pedestrian facilities is recreational in nature, and contained in the urban/university settings.

### **Trails**

While there is not a current updated bicycle map for Mississippi, MDOT is developing a Mississippi River Trails Bike Brochure and Mileage Chart. The Mississippi River Trail follows along the Mississippi River between the Mississippi/Arkansas U.S. Highway 49 bridge at Helena and the U.S. Highway 84 bridge at Natchez. The route is signed along state, county and municipal roadways and is also along a portion of the Natchez Trace south of Vicksburg to north of Natchez.

Adventure Cycling Association has published three maps of national bicycle routes through Mississippi. The first two are Section 2 of the Great Rivers South route, which enters Mississippi from Alabama at the Natchez Trace Parkway through to Tupelo, and Section 3 of the Great Rivers South route, which generally continues along the Natchez Trace Parkway from Tupelo to Natchez, and then on through Centreville to the Louisiana state line. The third route is Section 6 of the Southern Tier, which enters Mississippi near Bogalusa, Louisiana, crossing the Pearl River, and on through Pearl River, Stone, Harrison and Jackson counties before exiting the state north of Grand Bay, Alabama.

### **Barriers and Bridges**

The majority of Mississippi's roads in rural areas are two-lane, with many having no paved shoulders. This presents access and safety issues on roadways with short sight distances as well as high traffic volumes, including trucks. The I-20 Mississippi River Bridge in Warren County presents a barrier as the state does not allow bicycles on Interstates. The problem did not exist with the county's Old River Bridge, as it provided an opportunity for east-west nonmotorized travel through Mississippi. However, with its closure access and mobility for cyclists have been affected.

Federal design guidance dictates that when a highway bridge on which cycling is permitted or may operate is being replaced or rehabilitated with federal funding, safe accommodation for bicycles is required, unless determined by the U.S. Secretary of Transportation that it would be cost prohibitive to do so. Similarly, when improvements to at-grade rail crossings are under consideration, bicycle safety must be taken into account as well. There is an Enhancement project underway at Mississippi State University with the construction of a bicycle and pedestrian bridge over MS Highway 12 next to the University Drive Bridge between Starkville and the University.

## **DESIGN POLICY**

*Bikeways* – Mississippi uses the AASHTO design criteria for bikeway design.

*Shoulder Design Standards* – The design standards for highway shoulders are contained in the MDOT Design Manual. In the Design Manual, surfaced shoulders are recommended on all freeways, on newly constructed multi-lane rural arterials, on newly constructed or 3R urban arterials (except two-lane roads without curbs), and on newly constructed or 3R urban collectors with curbs.

In the remaining cases – all 3R rural arterials, newly constructed two-lane rural arterials, all rural collectors, urban arterials and collectors without curbs – the shoulders are generally not surfaced except as approved on special conditions.

The recommended shoulder widths vary from two to 10 feet, generally between four and six feet. A width of four feet or more is generally sufficient for bicycles to use the shoulder rather than the travel way if the shoulder is paved.

*Sidewalks* – The Mississippi Design Manual states that sidewalks should be strongly considered in the design of all projects on urban streets, with a minimum width of five feet. A width of the minimum to eight feet is typical. The manual provides guidance on the design and placement of curb-cut ramps. There is also a discussion of accessibility considerations for the location of pedestrian overpasses.

## **Federal Design Guidance**

TEA-21 states that, "Bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation projects, except where bicycle and pedestrian use are not permitted." (Section 1202)

### *U.S. DOT Policy Statement on Integrating Bicycling and Walking into Transportation Infrastructure*

The Policy Statement, from which aspects relevant to Mississippi are highlighted below, was developed through collaborative input of FHWA, AASHTO, ITE, bicycle and pedestrian user groups, state and local agencies, the U.S. Access Board, and representatives of disability organizations. The following design guidance recommendations, drawn from a national best practices analysis, have been extracted from the Statement:

- Bicycle and pedestrian ways shall be established in new construction and reconstruction projects in all urbanized areas unless one or more of three conditions are met:
  - o Bicyclists and pedestrians are prohibited by law from using the roadway;
  - o The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use; and
  - o Where scarcity of population or other factors indicate an absence of need.
- In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day. Rumble strips are not recommended where shoulders are used by bicyclists unless there is a minimum clear path of four feet in which a bicycle may safely operate.
- Sidewalks, shared use paths, street crossings (including over and under crossings), pedestrian signals, signs, street furniture, transit stops and facilities, and all connecting pathways shall be designed, constructed, operated and maintained so that all pedestrians, including people with disabilities, can travel safely and independently.
- The design and development of the transportation infrastructure shall improve conditions for bicycling and walking through the following additional steps:
  - o Planning projects for the long-term;
  - o Addressing the need for bicyclists and pedestrians to cross corridors as well as travel along them; and
  - o Designing facilities to the best currently available standards and guidelines.

As various situations require various solutions, state and local governments should encourage exercising judgment in the application of the range of available treatments, with the following as examples:

- Collector and arterial streets shall typically have a minimum of a four-foot wide striped bicycle lane; however, wider lanes are often necessary in locations with parking, curb and gutter, and heavier and/or faster traffic.
- Collector and arterial streets shall typically have a minimum of a five-foot wide sidewalk on both sides of the street; however, wider sidewalks and landscaped buffers are necessary in locations with higher pedestrian or traffic volumes, and/or higher vehicle speeds. At intersections, sidewalks may need to be wider to accommodate accessible curb ramps.
- Rural arterials shall typically have a minimum of a four-foot paved shoulder; however, wider shoulders (or marked bike lanes) and accessible sidewalks and crosswalks are necessary within rural communities and where traffic volumes and speeds increase.

## **FINANCING**

Bicycle and pedestrian projects are broadly eligible for funding from almost all the major Federal-aid highway, transit, safety and other programs. Bicycle projects must be "principally for transportation, rather than recreation, purposes" and must be designed and located pursuant to the transportation plans required of states and Metropolitan Planning Organizations. Following are existing or potential sources of federal funding for bicycle and pedestrian projects:

### **Federal-aid Highway Program**

- National Highway System
- Surface Transportation Program (STP)
- Transportation Enhancement Activities (TEAs)
- Hazard Elimination and Railway-Highway Crossing Program
- Congestion Mitigation and Air Quality Improvement
- Recreational Trails
- Federal Lands Highway Program National Scenic Byways
- Job Access and Reverse Commute

### **Federal Transit Program**

- Urbanized Area Formula Grants, Capital Investment Grants and Loans, and Formula Program for Other Than Urbanized Area
- Transit Enhancement Activity Program

### **Highway Safety Programs**

- State and Community Highway Safety Grants
- Highway Safety Research and Development (Section 403) Program

### **Federal/State Matching Requirements**

In general, the federal share of the costs of transportation projects is 80 percent with a 20 percent state or local match. However, there are a number of exceptions to this rule:

- Federal Lands Highway projects and Section 402 Highway Safety funds are 100 percent federally funded.
- Bicycle-related Transit Enhancement Activities are 95 percent federally funded.
- Hazard elimination projects are 90 percent federally funded. Bicycle-related transit projects (other than Transit Enhancement Activities) may be up to 90 percent federally funded.
- Individual Transportation Enhancement Activity projects under the STP can have a match higher or lower than 80 percent. However, the overall federal share of each state's Transportation Enhancement Program must be 80 percent.

- States with higher percentages of federal lands have higher federal shares calculated in proportion to their percentage of federal lands.
- The state and/or local funds used to match Federal-aid Highway Projects may include in-kind contributions (such as donations). Funds from other federal programs may also be used to match Transportation Enhancement, Scenic Byways, and Recreational Trails program funds. A federal agency project sponsor may provide matching funds to Recreational Trails funds provided the federal share does not exceed 95 percent.

MDOT assists local governments with Enhancement projects, and has allocated or committed to allocate approximately 47 percent of the Enhancement Program funds for Bicycle/Pedestrian projects. Of the available Enhancement funding available through ISTEA, 100% was allocated by MDOT to local government projects (including those sponsored by cities, counties, state agencies, universities and Rail-to-Trail districts). Of the \$50 million estimated to be available under TEA-21, the Mississippi Transportation Commission awarded approximately \$32 million to local government projects with the balance retained at the state level for MDOT projects.

MDOT requested Enhancement project applications in 1999 from local governments, and a committee was appointed to review and recommend projects for funding. Bicycle/pedestrian projects received no priority over other eligible Enhancement project categories. Bicycle/pedestrian projects that are part of regional or local plans were given priority over other similar projects selected for Enhancement funding.

## **SAFETY**

Referencing bicycle and pedestrian fatality statistics from the U.S. DOT's NHTSA, *Traffic Safety Facts 2000*, Mississippi has a higher pedestrian fatality rate than the U.S. average, and an equal bicycle fatality rate. Sixty-four pedestrian fatalities occurred in 2000, at a rate of 2.3 per 100,000 population. This is the 6<sup>th</sup> highest rate nationally (including the District of Columbia), with a U.S. rate at 1.7. Seven bicycle fatalities occurred during this same year, at a rate of 2.49 per 1 million population. This is the 18<sup>th</sup> highest rate nationally (including the District of Columbia), with a U.S. rate of 2.51. The highest concentration of pedestrian fatalities occurred in the 35-44 age group with 13, while the 25-34 and 45-54 age groups each had 11 fatalities. The seven bicycle fatalities occurred within five age groups.

**Tables 10-1 and 10-2** present five-year pedestrian and bicycle fatality trends for Mississippi by each age group.

**Table 10-1  
PEDESTRIAN FATALITIES BY AGE BY YEAR**

Age (Years)	1996	1997	1998	1999	2000
<5	1	2	2	2	3
5-9	4	4	4	1	1
10-15	2	5	4	3	0
16-20	6	7	3	4	5
21-24	1	3	5	4	1
25-34	6	7	8	10	11
35-44	12	13	9	9	13
45-54	8	6	12	5	11
55-64	1	2	6	6	5
65-74	2	5	4	7	8
75+	4	0	2	7	5
Unknown	1	0	0	2	1
<b>Total</b>	<b>48</b>	<b>54</b>	<b>59</b>	<b>60</b>	<b>64</b>

Source: Fatality Analysis Reporting System, U.S. DOT – National Highway Traffic Safety Administration, 2000.

While the bicycle fatality rate is generally average among U.S. states, the pedestrian fatality rate mirrors Mississippi's national standing as a high traffic fatality state.

**Table 10-2  
BICYCLE FATALITIES BY AGE BY YEAR**

Age (Years)	1996	1997	1998	1999	2000
<5	0	0	0	0	0
5-9	2	0	3	5	1
10-15	0	2	0	1	0
16-20	1	0	1	0	0
21-24	0	0	1	0	0
25-34	0	1	2	0	1
35-44	1	1	0	0	1
45-54	0	2	1	0	3
55-64	1	0	0	0	1
65-74	0	0	1	0	0
75+	0	0	0	0	0
Unknown	0	0	0	0	0
<b>Total</b>	<b>5</b>	<b>6</b>	<b>9</b>	<b>6</b>	<b>7</b>

Source: Fatality Analysis Reporting System, U.S. DOT – National Highway Traffic Safety Administration, 2000.

**SUMMARY**

With the exception of select urban and university areas, there has not been sufficient use or demand in Mississippi to justify the consistent development of bicycle and pedestrian facilities, due in part to Mississippi's rural nature and lack of significant urban congestion. The majority of Mississippi's roads in rural areas are two-lane, with no paved shoulders, presenting access and safety issues on certain roadways.

However, as nonmotorized transportation modes such as cycling and walking gain momentum and make the transition from recreation to a viable modal choice, new issues and concerns will require attention. With the MULTIPLAN, intermodal and mode specific bicycle/pedestrian areas that address these issues include safety, connectivity, funding opportunities, and coordination with local areas. Additionally, statewide education and awareness opportunities will assist in raising bicycle & pedestrian travel to a viable modal choice.