

Prepared by:

Central Savannah River Area Regional Development Center

For:

City of Millen

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1.0 Introduction

Pedestrian travel issues have grown in significance throughout the 1990s and 2000s. People today recognize the value of non-motorized travel and local, state and federal agencies are scrambling to accommodate that travel mode within the overall transportation system. Walking is a popular recreational activity and is becoming increasingly important as an alternative to motorized transportation.



Numerous state pedestrian design manuals have been written to guide future development. At the same time, planners and engineers are more familiar with and better equipped to apply pedestrian planning and design principles in cities and towns throughout Georgia. Local and regional jurisdictions are responding by engaging in pedestrian planning and implementing new programs.

This pedestrian plan outlines a strategy for attracting pedestrians to Millen's historic downtown area. Included are recommendations for incorporating pedestrian considerations into land use decisions, improving facilities and maintenance, and better integrating pedestrian improvements into roadway design.

The plan also serves as a tool to share the vision with others, guide future planning efforts, and provide a basis for coordinated decision-making. Maintaining, improving, and expanding upon existing pedestrian facilities will enhance the pedestrian travel experience and ultimately make the historic downtown area a more attractive place to live and visit.

1.1 Vision, Goals, and Objectives

Vision Statement

Millen is a community that values safe, accessible, and enjoyable pedestrian transportation. The historic downtown district will reflect these values and become a people-oriented, pedestrian-friendly area.

Millen's interest in planning for pedestrians stems from a desire to increase activity in the historic downtown district. City officials and residents identified numerous goals and objectives during the consultation process:



The goals of the *Millen Downtown Pedestrian Plan* are:

1. To outline a strategy to encourage pedestrian travel in the city's historic downtown district.
2. To provide policies and design guidelines for facilities that will make pedestrian travel easier and more attractive.

The objectives for meeting these goals are:

1. To identify important pedestrian linkages and connectivity between the downtown district and surrounding neighborhoods.
2. To identify and meet the diverse needs of the pedestrian traveling population, including people with disabilities, children, and seniors.
3. To preserve the walkability of places that are presently good areas to walk.
4. To improve pedestrian facility development.
5. To identify implementation strategies for programs and facilities.

1.2 The Setting

The City of Millen, the governmental seat and commercial center of Jenkins County, is located in mid-eastern Georgia near the confluence of the Ogeechee River and Buckhead Creek. It lies on the northern part of Georgia's coastal plain amid undulating terrain at an elevation of 208 feet above mean sea level. The city's population accounts for roughly half of the county's 8,575 residents.



The economic base of the community is agriculture, although employment is shifting towards manufacturing and other non-farm activity. Industrial employment includes apparel, and lumber and wood products. Feed, fertilizer, and cotton gin industries are also of note.

Millen's historic downtown district includes sections of Cotton and Winthrop Avenues, east of US25/SR121 and west of Walnut Street (Fig. 1).



Figure 1



1.3 Enabling Legislation and Policy Context

1.3.1 Intermodal Surface Transportation Efficiency Act (1991)

The passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) ushered in a new era in transportation planning. For the first time, pedestrian travel was recognized as a form of transportation no different from motorized travel.

The new vision of an intermodal transportation system created by ISTEA is spelled out in a declaration of policy in section 2 of the law [P.L. 102-240, 2), which states:

It is the policy of the United States to develop a National Intermodal Transportation System that is economically efficient and environmentally sound, provides the foundation for the Nation to compete in the global economy, and will move people and goods in an energy efficient manner.

The National Intermodal Transportation System shall consist of all forms of transportation in a unified, interconnected manner, including the transportation systems of the future, to reduce energy consumption and air pollution while promoting economic development and supporting the Nation's preeminent position in international commerce.

ISTEA requires each state to incorporate long-term pedestrian planning in its long-range transportation plan as well as requiring every state department of transportation to have a pedestrian coordinator. Funding for transportation infrastructure projects would be partially dependent on pedestrian travel provisions.

As part of ISTEA, Congress ordered a national study to determine current levels of pedestrian travel and to develop a plan for increased use and enhanced safety of pedestrian travel. Having determined that commuting trips made by bicycling and walking accounted for no more than 4.4% of total transportation, the US Department of Transportation adopted a new transportation policy to “encourage planners and engineers to accommodate bicycle and pedestrian needs in designing transportation facilities for urban and suburban areas”, and to “increase pedestrian safety through public information and improved crosswalk design, signaling, school crossings, and sidewalks”.

The Federal Highway Administration and Federal Transit Administration have issued Interim Technical Guidance for Pedestrian Planning under ISTEA. The Technical Guidance includes the following key points:

- Plan elements should include goals, policy statements and specific programs, and projects whenever possible.
- Plans should identify financial resources necessary for implementation.



1.3.2 Transportation Equity Act for the 21st Century (1998)

Like ISTEA, its successor, the Transportation Equity Act for the 21st Century of 1998 (TEA-21) encourages states to incorporate pedestrian travel in their long-range plans. The legislation authorizes Federal Surface Transportation programs for highways, highway safety, transit, and other surface transportation programs. Among the many pedestrian programs included, TEA-21 requires that 10% of the highway funds in the Surface Transportation Program component be used for enhancement activities, which include pedestrian facilities. Additionally \$15million annually is devoted to the Recreational Trails Program.

The legislation also prevents State and local jurisdictions from ignoring pedestrian needs by explicit provision: “The Secretary shall not approve any project or take any regulatory action that will sever an existing major nonmotorized route or adversely affect safety of nonmotorized traffic and light motorcycles, unless a reasonable alternate route exists or is established”.

1.3.3 Clean Air Act Amendments (1990)

The Clean Air Act Amendments of 1990 (CAAA) is a federal law established to regulate air pollutants including ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and particulate soot. It set a national agenda for identifying areas with unhealthy air quality and establishes specific responsibilities for government and industry to promote healthy air quality nationwide. The law allows states to have stronger pollution controls but provides minimum standards that must be met nationwide. States are required to develop State Implementation Plans (SIPs), outlining a regulatory framework used to clean up polluted areas.



The CAAA seeks to integrate transportation and air quality planning through SIPs. Preparation of SIPs must be coordinated with transportation planning processes that include a non-motorized transportation element. Failure to do so results in non-attainment designation as well as limits on available funding programs.

1.3.4 Americans with Disabilities Act (1990)

The Americans with Disabilities Act (ADA) is civil rights legislation designed to protect people with mental or physical disabilities from discrimination. The ADA requires places of public accommodation and commercial facilities to be designed, constructed and



altered in compliance with the ADA Accessibility Guidelines. Public accommodations include nearly all pedestrian facilities.

The ADA has significant implications for the provision and design of facilities to serve pedestrians. Access to transit services and public / private sites, and the location and design of sidewalk-type facilities are just two of several transportation-related issues.

State and local governments are required to follow specific architectural standards in the new construction and alteration of their buildings. They also must relocate programs or provide access in inaccessible buildings, and communicate effectively with people who have hearing, vision, or speech disabilities. While public entities are not required to take actions that would result in undue financial and administrative burdens, they are required to make reasonable modifications to policies, practices, and procedures where necessary to avoid discrimination.



Title V requires collect and analysis of relevant data such as the distribution and effects of transportation investments on different socio-economic groups. The public participation process must ensure that minority and low-income population groups are engaged in the transportation decision-making process in a meaningful way.

1.3.5 Georgia Department of Transportation Policy

Conducting continuous, cooperative, and comprehensive pedestrian planning is a major priority in Georgia. The Georgia Department of Transportation (GDOT) relies in large part on the local planning process for statewide planning outputs.



Pedestrian planning goals and guidance are provided in the Georgia Department of Transportation Pedestrian Facilities Guidebook. These include:

- Encourage economic development that enhances pedestrian mobility.
- Promote non-motorized transportation as a means of congestion mitigation.
- Promote non-motorized transportation as an environmentally friendly means of mobility.
- Promote connectivity of non-motorized facilities with other modes of transportation.

In 2001, the Georgia State Transportation Board (GSTB) resolved to “direct more financial and staff resources towards programs that will increase the use for non-



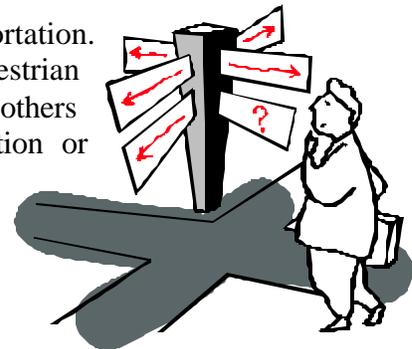
motorized modes of transportation to and from schools; make routes to school safer for those modes; reduce motor vehicle congestion; improve student health and fitness; and work with local government entities to foster transportation-related improvements and programs for the safety of students”.

1.3.6 Georgia Planning Act (1989)

The Georgia Planning Act (1989) provides local governments with a guide for minimum planning standards and procedures for local comprehensive planning. Comprehensive plans are required of all cities and counties, of which a transportation component must be included. While no specific provision mandates a pedestrian element, local jurisdictions are strongly encouraged to include pedestrian planning in the community facilities section of their plan.

1.4 The Need for Pedestrian Planning

Walking is the oldest and most basic form of transportation. Virtually all travel at one point or another includes a pedestrian element. For some, it's a walk from home to the office. For others it could be a four or five mile jog. Whether for recreation or transport, pedestrian activity contributes to Millen's quality of life. The benefits of pedestrian travel include:



1.4.1 Health

The health benefits of walking are well-documented, and include reduced:

- Risk of stroke
- Heart diseases
- Diabetes
- Obesity
- Cholesterol
- Osteoporosis
- Stress

1.4.2 Transportation and Land Use

Pedestrian travel reduces roadway congestion and wear and maintenance needed on roadways. Many streets and highways carry more traffic than they were designed to handle, resulting in high traffic levels. Walkways reduce the need for short vehicle trips, reduce impacts on roadways, and reduce the need for parking facilities. The National Personal Transportation Survey (1995) found that approximately 40% of all trips are less



than 2 miles in length, representing a 30-minute walk. And a Rodale Press survey (1995) found that over 40% of U.S. adults would use non-motorized travel if safe conditions were available. Traffic calming measures and pedestrian crosswalks, for example, provide pedestrians with an added layer of security.

Proper pedestrian planning and design can also lead to more efficient land use patterns. Good planning helps to integrate road corridors in a way that facilitates pedestrian travel opportunities. City designs that include a comprehensive network of sidewalks, crosswalks, and traffic calming devices reduce the need for motorized travel by offering safe and convenient access to employment and activity centers. Such trends provide an alternative to motorized travel, lessen the need for wider and higher capacity roads, and render the provision of public services more cost-effective. This offers both choices in transportation and improved personal mobility.

1.4.3 Economic

Pedestrian travel is an affordable transportation mode. It reduces automobile expenses, and the costs associated with maintenance of sidewalks and crosswalks are considerably lower than road maintenance.

Pedestrian facilities also have an impact on attracting business and tourists. In cities and towns where people can regularly be seen out walking, there is a sense that these are safe and friendly communities. For tourists, driving and parking in crowded, unfamiliar areas is less attractive than walking between activity nodes.

1.4.4 Environmental

Pedestrian travel is a pollution-free transportation mode. Reducing auto trips improves both air quality and water quality. Motor vehicles are one of the greatest sources of air pollution. Transportation is responsible for over 80% of carbon monoxide and nearly 50% of nitrogen oxide emissions in the U.S. Particulate emissions and polluting fluids that accumulate on roadway surfaces are carried to surface waters or to soils surfaces where they often percolate into groundwater systems. Pedestrian travel can reduce these non-point source pollutants to water resources.

Under the CAAA, non-attainment areas are required to reduce ozone and carbon monoxide emissions. Walking is an approved Traffic Control Measure (TCM) for attainment. The Atlanta metropolitan area has already been designated a non-attainment area under the CAAA. The Augusta region is on the verge of being added to that list. Encouraging pedestrian travel will contribute to meeting clean air requirements.



1.4.5 Safety

Whether walking for recreation or transportation, safety is a concern for all Millen residents. The lack of a continuing sidewalk system in many forces pedestrians to walk in the street, in effect sharing an already narrow roadway with motor vehicles. A safe pedestrian network reduces automobile-pedestrian accidents, and enhances the quality of life for residents.

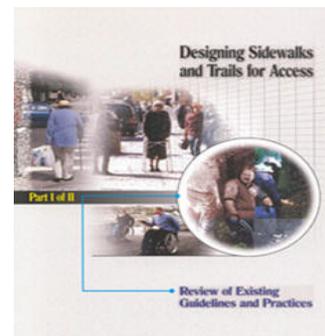
1.5 Plan Development Process

The Millen Historic Downtown Pedestrian Plan is both a policy plan and technical document. It provides a comprehensive framework with which to develop and enhance the downtown area's pedestrian facilities and details specific pedestrian projects aimed at improving the traveling experience.

1.5.1 Plan and Design Guide Review

Staff collected and reviewed numerous transportation plans throughout the state. These included MPO pedestrian and transportation plans, the transportation element of the most thorough comprehensive plans, *the Georgia Pedestrian Facilities Design Guidebook*, and Atlanta Regional Commission's *Best Design Practices*. Staff also reviewed the *Millen-Jenkins County Comprehensive Plan* and the city zoning ordinance, federal planning guides and best practice publications from professional organizations. These include:

- *AASHTO Policy on Geometric Design of Highways and Street*
- *Design and Safety of Pedestrian Facilities, A Recommended Practice*
- *Residential Street Design and Traffic Control*
- *Creating Pedestrian and Bicycle Systems in Conjunction with New Development*
- *Uniform Federal Accessibility Standards*
- *ADA Accessibility Guidelines for Buildings and Facilities*
- *Designing Sidewalks and Trails for Access, Part I and II*



Plans reviewed included different levels of detail, ranging from broadly defined goals and objectives to detailed policies addressing site plans and design standards. The approach taken for this plan was to adopt the best of each plan within the context of what is relevant to Millen's historic downtown district.



1.5.2 Inventory

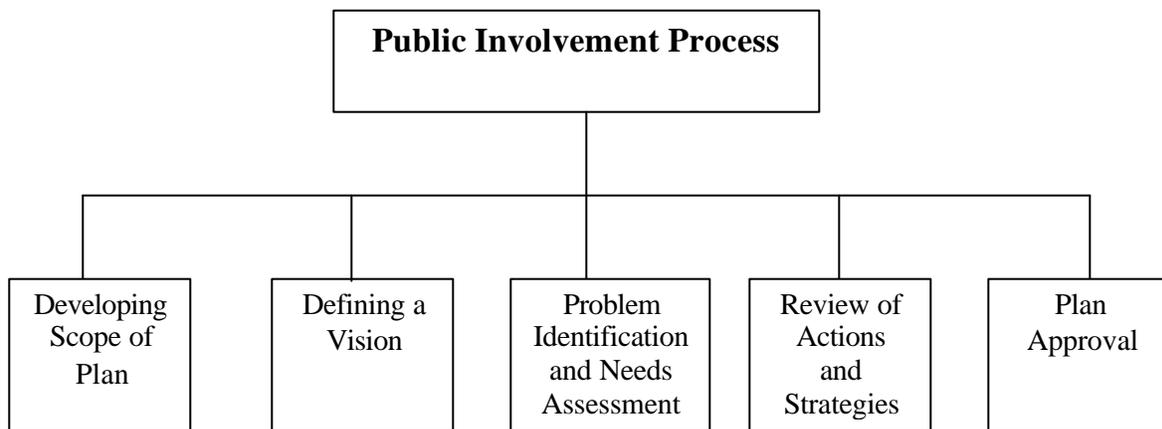
Staff completed a comprehensive inventory of existing pedestrian facilities, including an analysis of accessibility, sidewalk conditions, and barriers to pedestrian travel. The purpose was to analyze Millen’s facilities and needs, and assist in public outreach efforts. Data compiled from fieldwork was incorporated into a GIS for future use. Staff also performed pedestrian counts at key intersections around downtown to determine current use.

1.5.3 Interdepartmental Coordination

Staff worked closely with city officials throughout the planning process. Members of all city departments with a stake in pedestrian transportation were invited to serve on a pedestrian committee. City departments also contributed valuable information such as zoning and land use documents, funding levels, rules and regulations, accident data, and existing road projects.

City staff involvement throughout the development of this plan helped to guide its focus and recommendations in a direction that will maximize its chances of being implemented.

Figure 2: Public Involvement Process



1.6 Public Participation

The plan’s development was subject to a comprehensive stakeholder and public involvement process (Fig. 2). Public involvement serves to educate community leaders about pedestrian issues and build constituency support, both necessary ingredients for any successful pedestrian plan. Each person at the table represents many others and offers insight on something overlooked by planners.





By involving the public as a partner throughout the planning process, the message sent is that people's ideas matter. And if a known and quantifiable effect on the plan is seen and people feel the plan is theirs, not just something imposed by a regional planning agency, they are likely to become advocates for its implementation.

1.6.1 Survey

A survey was designed by the Central Savannah River Area Regional Development Center (CSRA RDC) to collect information on pedestrian activity in Millen. The goal was to determine general transportation habits and perceptions the general public had about the existing pedestrian system. The survey represented residents from all neighborhoods in Millen. Broadly, respondents indicated the following overall opinions and concerns:

- Less than 2 of 10 walk to Cotton Avenue.
- Over 7 of 10 of those walking downtown indicated that it was for exercise or recreation.
- Over 8 of 10 respondents felt that downtown Millen is not pedestrian friendly.
- Over 7 of 10 percent felt that they would walk to downtown more often if better facilities were available.
- Just under 6 of 10 felt that both motorists and pedestrians ignore traffic regulations.
- Over 8 of 10 felt that the city does not invest enough in pedestrian facilities.
- Over 7 of 10 favor making investments in pedestrian facilities a higher priority.

1.6.2 Public Workshops

Workshops were scheduled to provide an opportunity for residents to become familiar with the pedestrian planning effort and to guide the decision-making process. Workshops were held at Millen's Civic Center and the offices of various community organizations. Staff consulted with six different community organizations, including several population groups that had been under-represented in the decision-making process in the past.



The workshops were advertised throughout Millen with flyers and public service announcements were published in the *Millen News*. Over 80 residents participated in the various workshops.

Participants were asked to help conceptualize what the pedestrian plan should look like. The consensus was that a comprehensive document, addressing all factors contributing to the decline of the historic district, was preferable. Participants formulated goals and



objectives, and provided input on existing conditions and needs. Finally, implementation was discussed and out of a prioritization process came a draft list of potential projects.

1.6.3 Work Group/Committee

A pedestrian working committee was formed to assist in the development of the Plan. The committee represented various community organizations, city officials, the school system, and the chamber of commerce. The committee was invaluable in formulating goals and objectives, generating ideas, and identifying solutions to problem areas. All committee members made specific project recommendations. Membership on the committee was open to all residents.

The committee analyzed pedestrian needs and provided solutions to promote walking in the historic downtown area. Emphasis was placed on infrastructure and aesthetics, as these were viewed as major factors affecting pedestrian activity. The committee also investigated additional opportunities that would promote safe walking, which included outreach programs and traffic calming measures.



1.6.4 Comment Period and Adoption

A final draft of the plan was presented for public review. Copies were left at Millen City Hall, the Millen-Jenkins County Chamber of Commerce, and the Millen-Jenkins County Library. Some revisions were made and the Plan was endorsed by stakeholders and city council in September 2003.



2.0 Existing Conditions

The history of Millen is interwoven with the development of the railroad from Savannah to Macon. When the railroad reached Millen in the late 1830s it was exactly seventy-nine miles from Savannah, and Millen, as we know it, was named “79”. By an Act of the State Assembly the town of Millen became the “City of Millen” on January 1st, 1906.

In the early 1900s Millen was a small town of 400 residents but was recognized as a junction point of the railroads. As with many small Georgia towns, the railroad brought growth. Robert Gray built a new hotel along Cotton Avenue in what for many years was to be held as the Daniel Sons and Palmer block. The hotel served mostly railroad passengers and workmen. Millen had ten stores, one restaurant, four bar rooms, one livery stable, and a drug store.



Development was rapid in the late 1930s and early 1940s, growing from a few dwellings facing the railroad along Cotton Avenue to a full-blown town center. With growth came inevitable transportation problems. Even though the automobile had not yet become commonplace, transportation was already posing problems since there were no paved roads or sidewalks. It was not until the post-World War II era that an aggressive attempt to provide sidewalks has resulted in the extensive network of today.

Unlike development at the outskirts of the city, Cotton Avenue has never become heavily dependent on motorized transportation. The lack of new residential and commercial development has meant limited roadway improvements, and hence spared the historic district of auto-centered design techniques that often neglected pedestrian facilities in favor of parking lots and lengthy road widths.



2.1 Determinant of Pedestrian Travel

2.1.1 Spatial Elements

The walk-to-work share rate is highly dependent on climatic conditions, general land use patterns, and the relationship between people and destinations. Climatic conditions in Millen are favorable and do not discourage residents from walking. A good density and mixture of residential, commercial and cultural spaces provides more opportunities for people to walk to work, church, and to visit friends and family.



2.1.2 Demographics

Nationally, young people between 5 and 19 years old walk more than any other age group. This group’s limited access to motor vehicles and higher likelihood of attending school are the most probable explanations. People between 20 and 49 years old are less likely to make trips by walking. It is not until the age of 50+ do we find an upward trend in walking. As people approach retirement age there is more time for recreational activities and increased likelihood that physical impairments will prevent motorized travel. Figure 3 lists common pedestrian trips in a survey conducted by GDOT.

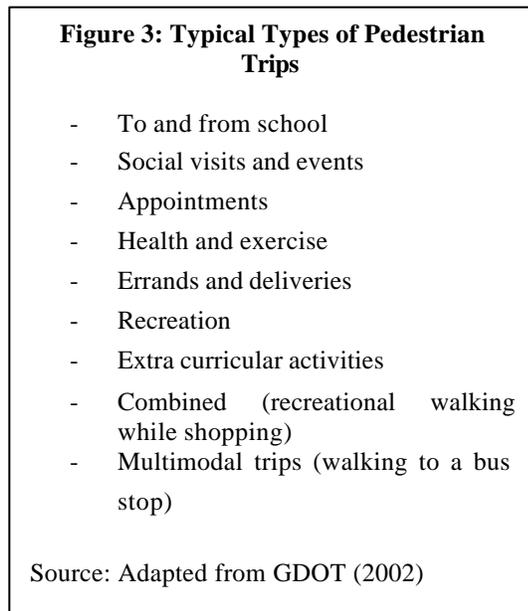
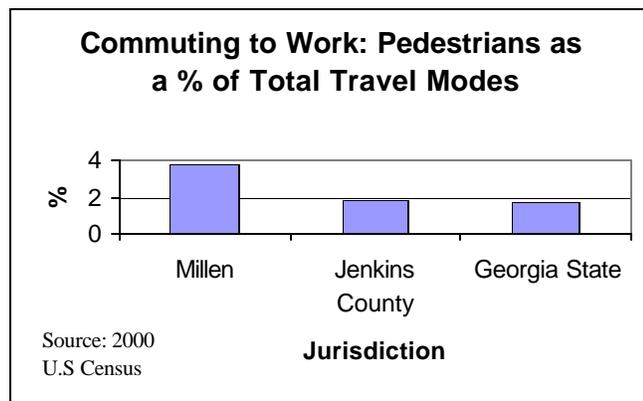


Figure 4: Pedestrian Travel



Millen residents walk to work at a rate of over double the county and state averages (Fig 4). The proximity of residential districts to Millen’s industrial park and concentration of commercial activity along Winthrope and Cotton Avenues means that 30% of residents that work in Millen do not have to travel long distances to reach employment opportunities.

The rate of pedestrian trips to the historic downtown district relative to main street (Winthrope Avenue) is low (Table 1 & Fig 5). Shopping, exercise, recreation, and combined utilitarian and recreational trips account for over 85% of all pedestrian trips to Cotton Avenue. This stands in contrast to Withrope Avenue where over 75% of all pedestrian trips are shopping-based. Even along the growing commercial developments near US25/SR121 just north of SR17, less than 10% of all pedestrian trips are multi-use or non-shopping.

The spatial and demographic elements of walking provide guidance on proper pedestrian location design. Because younger and older age groups tend to walk more than people in the middle age spectrum, locations near playgrounds and parks, popular seniors locations, and low-income areas require special attention in planning and designing pedestrian networks.



Table 1: Daily Pedestrian Trips at Selected Intersections

Intersection	Count per Day
Cotton Ave. and E. Winthrope Ave.	24
Cotton Ave. and N. Hendricks St.	21
Cotton Ave. and N. Gray St.	93
Cotton Ave. and Daniel St.	58
Cotton Ave. and Harvey St.	48
Cotton Ave. and N. Masonic St.	32
E. Winthrope St. and Hendricks St.	165
E. Winthrope St. and N. Gray St.	235
E. Winthrope St. and Daniel St.	352
E. Winthrope St. and Harvey St.	278
E. Winthrope St and N. Masonic St.	210

* Counts reflect two-day average.

Figure 5: Common Reasons for Low Levels of Pedestrian Travel

- Poor facilities; lack of sidewalks or walkways
- Failure to provide a contiguous system of pedestrian facilities
- Concerns for personal safety
- Failure to provide facilities to and from popular origins and destinations
- Inclement weather
- Poor lighting
- Lack of separate facilities

Source: Adapted from GDOT (2002)

2.2 Policy Context

Decisions affecting pedestrian transportation fall under the direction of the City Administrator and the Millen Department of Public Works (DPW). General policy guidance is provided to these bodies by the Mayor and Council. Residents initiate a request for infrastructure improvements to individual city counselors who forward requests to DPW. Budgets are assessed and a decision is taken. Depending on the nature of the needed improvement, the City Administrator will occasionally request assistance from GDOT, the RDC or engineers on contract.

Maintenance of all roads and some sidewalks is provided by the city. Steam cleaning is scheduled on a monthly basis. Most of the sidewalk network is under the city’s jurisdiction. Along Cotton Avenue, however, sidewalks are owned and maintained by the Central of Georgia Railroad. Periodic weed abatement is also provided by DPW.

2.3 Existing Facilities

Millen already contains several key components that, when taken collectively, form the core of a promising pedestrian network. These include:

- A city business district built prior to the automobile era.
- Extensive sidewalk coverage.
- An active chamber of commerce that lobbies for improvement projects.



- A city council that is responsive to residents' needs and supportive of community initiatives.

2.3.1 Sidewalks

Sidewalks are an essential transportation facility for pedestrians as they provide critical connections between neighborhoods, schools, shopping areas, parks, and other important local destinations (Fig 6). Although Millen's sidewalk network is extensive, it is in poor condition (Fig 7). Over 60% of the sidewalks in and around the historic downtown district have structural problems. Over 30% of the city lacks adequate sidewalks.



Hendricks St



Winthrop Ave

Sidewalks in poor condition are a barrier that discourages pedestrian travel. The lack of adequate sidewalks forces pedestrians onto the road with motor vehicle traffic. This problem is especially common along roads leading into Cotton Avenue.

Pedestrian working committee members identified numerous problems with the existing sidewalk system along and around Cotton Avenue:

- *Broken Pavement:* Along Cotton Ave., N. Hendricks St., N. Gray St., Daniel St., and Harvey St.
- *Encroaching Vegetation:* Along Winthrop Ave., N. Gray St.
- *Protruding Objects:* Along Cotton Ave., and N. Hendricks St.
- *Lack of Sidewalks:* Many residential areas lack pedestrian provisions entirely. The absence of pedestrian facilities are cause for concern for a growing number of area residents. Connections between neighboring developments are often only provided by roadways with no pedestrian improvements.



N. Gray St

- *Lack of Facilities for People with Disabilities:* Designed prior to the ADA, most of Millen's sidewalk network did not include facilities for people with disabilities.



Winthrop Ave



Cotton Ave



Figure 6



Figure 7



2.3.2 Streets

Millen’s interconnected and small block pattern street network provides good opportunities for pedestrian access and mobility. Current Annual Average Daily Traffic (AADT) is 2000 for Winthrop Avenue and less than 1000 along Cotton Avenue and adjacent streets. Winthrop Avenue is the downtown area’s main arterial, feeding a series of collectors and local roads, including Cotton Avenue. Figure 8 highlights the most commonly used corridors to Cotton Avenue.

The following classification of pedestrian routes identifies existing streets and their link to the downtown historic district. Some streets may fall under more than one classification.

- *Historic and Scenic Streets:* Streets that have historic and/or scenic significance. Cotton Ave. and sections of Winthrop Ave. have qualify as both historic and scenic routes. These streets play a significant role in community life and provide special uses including parades and festivals. The Cotton Ave. historic district is listed in the National Register of Historic Places and is used for various festivals.
- *Main Streets:* Streets that typically include major shopping and entertainment locations. Such streets generally have retail and services on both sides and extend for numerous blocks. Winthrop Ave. and US25/SR121 are examples of Millen’s main streets.
- *Pedestrian Connectors:* Streets that provide direct access to the downtown district. These routes play an important role in integrating neighborhoods and the downtown district. Examples include N. Hendricks St., North Gray St., Daniel St and Harvey St.
- *Activity Centers:* Streets that are in proximity or lead to community facilities. They are typically located in proximity to major neighborhoods and have a higher probability of attracting pedestrians. Railroad Ave. is an example.

2.3.3 Other Deficiencies

Pedestrian Working Committee members identified other deficiencies affecting pedestrian use in the downtown area. The following does not include all deficiencies but highlights some of the more important issues.

- *Street signs:* Poor condition street signs that do not highlight the historic character of Cotton Ave.
- *Directional signs:* Lack of directional signs makes it difficult to find Cotton Avenue.
- *Lighting:* Lighting more suited for motor vehicles than pedestrians.
- *Power lines:* Overwhelm the historic downtown district.
- *Linkages:* Lack of direct pedestrian access from south Millen to Cotton Ave.
- *Crosswalks:* No crosswalk along Cotton Ave.
- *Traffic:* High volume along Winthrop Ave. makes crossing the street difficult at certain intersections.
- *Vacant lots and facades:* Too many vacant lots along Cotton Ave. with facades in poor condition.



Figure 8



Winthrope Ave



Winthrope Ave



Cotton Ave



Cotton Ave

2.4 Land Use and the Built Environment

Neighborhoods in different parts of Millen are characterized by very different mixes and distributions of land uses (Fig 9). In general, older parts of Millen, including the downtown area, have more segregated land uses than other areas in the City. In more recently-developed zones, land uses tend to be slightly more intermingled with most neighborhoods encompassing a mix of residential and commercial development.

In the mixed-use sections of Millen, more destinations are within walking distance and residents are able to meet more of their daily needs by walking. Cotton and Winthrope avenues, while overwhelmingly commercial, are relatively dense and provide convenient specialty shops, grocery shopping and pharmaceutical services. A bank, library, post-office, and restaurants also contribute to the residents' abilities to meet their daily needs by walking in the neighborhood.

In neighborhoods with highly segregated land use patterns to the northeast and the west, walking is limited to recreation. Even if an adequate pedestrian transportation network is in place in these areas, most destinations residents wish to reach are too far away to consider walking a viable transportation option. As a whole, most Millen residents are within 1-mile walking distance of Cotton Avenue (Fig 10).



Figure 9



Figure 10



3.0 NEEDS

The Millen Historic Downtown Pedestrian Plan vision promotes a pedestrian-centered approach, recognizing that pedestrian transportation is important to the economic vitality and livability of Millen’s historic downtown district. Millen residents indicate that they want their streets to become places of interest not simply thoroughfares. Pedestrian activity and the resulting personal interactions between people help build a sense of community. To achieve this, pedestrian facilities must ensure:

- comfort
- convenience
- efficiency
- security

Figure 11: Pedestrian Facilities

- Sidewalks
- Walkways and trails
- Curb ramps
- Traffic calming
- Crosswalks
- Grade separation
- Wide shoulders in rural areas
- Furnishings that create a pedestrian-friendly atmosphere
- Other technology, design features, and strategies intended to encourage pedestrian travel.

Source: Adapted from GDOT (2002)

Several obstacles stand in the way of creating an efficient system. When considering the high cost of providing pedestrian facilities funding is difficult to obtain (Fig 11). Providing pedestrian facilities away from the downtown area, where pedestrian use is relatively low is difficult to justify for elected officials. Furthermore, most of Millen’s neighborhoods are already are developed, which complicates providing pedestrian facilities in areas with not enough right-of-way. Nevertheless, both city officials and stakeholders identified the need to invest in pedestrian infrastructure in Millen’s historic downtown area.

3.1 Improvement Projects

There is a consensus among residents and pedestrian working group members that the first priority should be a streetscape project along Cotton Ave. Without adequate facilities there is little reason for residents to walk to Millen’s historic district. The key to a successful streetscape project is that enhancement projects create an active and inviting pedestrian environment.

3.1.1 Sidewalks Improvements

A connected system of safe and accessible sidewalks is needed to encourage walking as an alternative to motorized transportation. Sidewalks along Cotton Ave. and adjacent streets are generally in poor condition. Broken pavement, encroaching vegetation, protruding





objects and the lack of curb ramps limit residents' willingness to visit the downtown district. These conditions are hazardous for all residents but pose additional challenges to users in wheelchairs and pedestrians with strollers. Eliminating these hazards so people can travel safely from one point to another are improvements that will promote walking and potentially attract new pedestrians. In keeping with the character of Cotton Ave. materials used for sidewalks should be historic limestone or brick. Along streets leading to Cotton Ave, ordinary surfacing should be used to differentiate and highlight the distinctive historic design of Cotton Ave. The city should also coordinate with GDOT to resurface sidewalks along Winthrope Ave. while completing future work along SR 17.

In attracting pedestrians to Cotton Ave. not only should the destination itself be pedestrian friendly, but routes to the destination should be appealing enough to attract pedestrian trips. The easiest way to achieve this is to establish pedestrian networks that facilitate movements between residential and the downtown areas. Figure 12 highlights corridors that should be targeted for improvements.

Numerous pedestrian design guides are available to guide planning of facilities. Among the more popular are the American Association of State Highway and Transportation Officials (ASSHTO) *A Policy on Geometric Design of Highways and Streets* (1990), Institute of Transportation Engineers, *Design and Safety of Pedestrian Facilities, A Proposed Recommended Practice* (1993), and Federal Highway Administration, *Designing Sidewalks and Trails for Access* (2001). The federal government has also developed accessibility standards in *Uniform Federal Accessibility Standards (UFAS)* and the *Americans with Disabilities Act Accessibility Guidelines (ADAAG)* to guide facility development for pedestrians with disabilities.

As a general rule a minimum 4' wide sidewalks should be built on both sides of all streets leading to Cotton Ave. This provides sufficient space for two pedestrians to travel side by side or for two people going in opposite directions to pass one another. Wider widths are preferred along Cotton Ave. where pedestrian traffic levels are higher than in residential areas. In addition to the 4' minimum, space should be allowed for 4' zone for trees and street furniture and a 1.5' zone alongside the building facades, both of which are not part of the effective width of the sidewalk circulation area. Since roadways are located along low-volume vehicular corridors there is no need for separation from the travel way by a planting strip.

Regardless of location, all design should meet the ADA minimum width of 3 feet of unobstructed sidewalk passage. Public sidewalks less than 5 feet wide are required to include a 5 by 5 foot passing every 200 feet, although sidewalks on quiet residential streets can be narrower. The only exceptions are cases that would result in undue financial and administrative burdens, or cause fundamental alterations in the nature of programs or activities.

The preferred material for sidewalks is Portland Cement Concrete (PCC), which provides a smooth, durable finish that is easy to grade and repair. Asphaltic Concrete (AC) may be used if it can be finished to the same surface smoothness as PCC. AC is susceptible to



Figure 12



break up by vegetation, requires more frequent maintenance and generally has a shorter life expectancy (15-20 years versus 30-40 years for PCC).

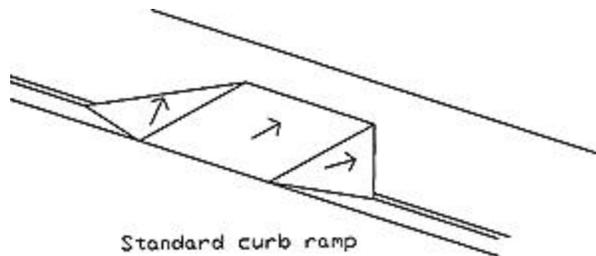
3.1.2 Curb Ramps

Curb ramps provide a gradual transition between the level of the sidewalk and the street. They provide access for people who use wheel chairs or crutches, who would otherwise be excluded from certain types of pedestrian travel because of the barrier created by the curb. Curb ramps also benefit pedestrians pushing strollers or other wheeled devices. Curb ramps should be provided at each corner of an intersection that aligns with a pedestrian crossing through intersections.

Broadly, three types of curbs are commonly employed, distinguished by their structural design and position relative to the sidewalk and street.

- *Perpendicular curb ramp*: one that is aligned so that the ramp is generally perpendicular to the curb and users will be traveling perpendicular to vehicular traffic at the bottom of the ramp.

- *Diagonal curb ramp*: a single curb ramp that is located at the apex of the corner at an intersection with a straight path of travel down the ramp leading diagonally into the center of an intersection.



- *Parallel curb ramp*: two ramps leading down towards a center level landing at the bottom between both ramps with a level landing at the top of each ramp.

All three types have their advantages and disadvantages and all are acceptable so long as they meet acceptable design standards and do not place users directly in front of the intersection. A common design error is ramps that are oriented in the same direction of travel as the path. When angled towards the middle of an intersection, the risk of pedestrian-motor vehicle accidents is significantly higher.

3.1.3 Street Trees

Trees serve as a visual and auditory buffer between pedestrians and automobile traffic. They also support the aesthetic appearance of a street and provide shade in warm climate. As part of the streetscape project they should line Cotton Ave. at 25-35 foot intervals.





Trees require a minimum of 48 inch by 48 inch planting area. If improperly maintained, trees can be problematic in the sidewalk environment, causing sidewalk cracks and change in level . If tree roots cannot be removed, sidewalks should be rerouted around trees. Trees should be chosen with care for their branch patterns. Above the surface, branches can be vertical obstructions and protruding objects if they extend horizontally into the sidewalk corridor. Branches hanging lower than 80 inches should be trimmed away.

3.1.4 Landscaping

Landscaping is used for everything from masking public utilities and erosion control to shading and enhancing scenic views. Flowers and shrubs placed throughout Cotton Ave. were identified by residents and pedestrian working group members as a necessary part of the proposed streetscape project. Landscaping features should be kept consistent across the historic district to boost the visual coherence of the road and sidewalk system.



3.1.5 Street and Directional Signs

The majority of pedestrian information is conveyed through signs and signals in the public right-of-way that are directed primarily at motorists. Although these signs affect pedestrians, they are not always positioned for pedestrian use. Examples of this include street name signs on many arterials hung at the center of the intersection, and traffic signals along streets that are often missing for pedestrians. Pedestrians need their own signs because sight lines, viewpoints, and travel speeds are substantially different from those of motorists.



Pedestrian signs are a relatively inexpensive way to encourage greater use of pedestrian facilities by making pedestrians feel more secure. Directional signage can help pedestrians navigate along principal pedestrian routes and major destinations. By giving directions to nearby destinations, signs can make it easier, and thus more appealing, to walk. Directional signage should be provided along SR121/US 25 and sections of SR17 pointing to the historic district. Care is needed to ensure signs are placed in locations that do not limit the effective width of sidewalks or block the clear path of travel.

All signs should be consistent in format and location, enabling residents to learn to identify the information and meaning, including pedestrians with cognitive impairments. The Manual on Uniform Traffic Control Devices (MUTCD) emphasizes uniformity in



traffic control devices to protect the clarity of their meaning. A uniform device conforms to regulations for dimensions, color, wording, and graphics.

3.1.6 Lighting

Like signs, lighting can encourage greater use of pedestrian facilities by making pedestrians feel more secure and increase their safety. Signs and lighting are especially useful where facilities and streets meet to help pedestrians see where to turn and to help motorists see users. Pedestrian scale lighting should be provided along Cotton Ave. at intervals of 25-35 feet. Shorter light poles with attractive fixtures that are effective in illuminating the pedestrian travel way but not obstructive are preferable.



Strong visual contrasts are required between road and pedestrian areas to assist people with sight disabilities. The transition between poorly-lit and well-lit areas requires people with visual disabilities to adjust their vision to change in light. While improving street lighting makes a location appear friendlier, some lighting design strategies are poor because designers put them in solely for the aesthetic value of creating neighborhood continuity or improve motorists' ability to see. Such lighting along the public right-of-way is directed towards to the road and provides little benefit to pedestrians with visual disabilities.

3.1.7 Street Furniture

Creating a pedestrian-friendly environment encompasses more than creating a continuous system of sidewalks. It should also include, depending on surrounding uses, benches, water fountains, and trash receptacles. Street furniture are important sidewalk amenities that provide pedestrians with an opportunity to sit, rest, and socialize. Many town centers across Georgia have successfully incorporated these principles into the redevelopment of their existing central business districts or in the development of new ones and have created vibrant shopping districts. Street furniture should be provided along Cotton Ave. where sidewalks widths are adequate. In general, they should be installed in the curb zone a minimum 2 feet from the curb, or in the building zone as long as they do not obstruct the pedestrian path of travel.



3.1.8 Streets

The essential pedestrian transportation crossing issue is the relationship between design and travel behavior. Poor design - design that does not take into account pedestrian convenience - results in unpredictable





behavior. Pedestrians will often ignore traffic signals if they feel they have already waited enough or if the distance to a traffic signal is too far (Fig 13). Similarly, pedestrians will only use crosswalks if they feel motorists will stop.

Figure 13: Priorities for Pedestrians Traveling Along Streets

- Safety and security
- Efficient mobility
- Defined space
- Visibility
- Accessibility
- Comfortable/attractive environment

Source: GDOT (2002)

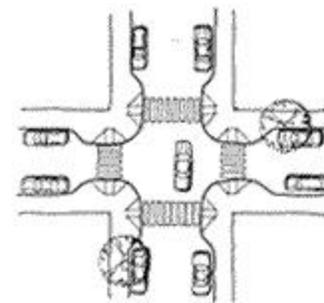
Commonly-used approaches to increase pedestrian crossing opportunities center around roadway designs that incorporate features such as signal timing and medians, marked crosswalks, and mid-block curb extensions.

Most pedestrian crossings to Cotton Ave. occur along Winthrop Ave. In other areas of Millen, corridors with concentrated nodes of activity (library, school, courthouse, seniors residence), are locations where crossings will likely occur.

In general, there is an inverse relationship between traffic volumes/speeds and the effectiveness of pedestrian crossing. This often leads to conflicting goals when determining priorities for future roadways. While some designs reduce pedestrian crossing safety for increased motor vehicle capacity, other designs that facilitate pedestrian crossings may reduce capacity. In designing new roadways, the city should examine designs that maximize multiple objectives, including safe pedestrian crossings.

3.1.9 Traffic Calming

Traffic calming is a term applied to a variety of physical measures intended to reduce the speed of automobile traffic. Techniques involve the use of physical changes in the roadway to reduce vehicle speeds. These techniques serve to safely balance the needs of all users of the roadway, including pedestrians. By slowing traffic speeds, traffic calming devices increase the reaction time available to motorists and pedestrians, thereby creating more opportunities for all users to share the roadway. Traffic calming also allows communities to enhance the aesthetic elements of a roadway and increase the livability of streets.



Common traffic calming techniques include:

- Roundabouts
- Lane Width Reduction
- Additional street landscaping and furniture
- Center islands and Pedestrian refuges at crossing locations
- On-street parking



- Bulbouts at crosswalks to reduce distances for pedestrian crossings
- Enhanced roadway lighting
- Separated sidewalks and curbing
- Textured pedestrian crossings (paved brick, cement concrete, granite pavers etc)
- Pavement Markings
- Raised Crosswalks

From all the above-mentioned options, crosswalk pavement markings are the most affordable alternative to more infrastructure-intensive techniques. Crosswalks define locations where pedestrians have a legal right of way when crossing streets. They can be at intersections or mid-block, at controlled intersections or uncontrolled intersections, be marked or unmarked, and be raised or at street level. Each of these configurations has different implications for pedestrian transportation.

Most crosswalks are at street level. Different pavement markings are used to draw attention to the crosswalk. Standard crosswalks are delineated with a single stripe at either edge of the crosswalk. Zebra crosswalks are used when it is desirable to make the crosswalk more visible to motorists. In raised crosswalks, vehicular traffic is raised to the level of the sidewalk, slowing down oncoming traffic. Crosswalks should be wide enough to accommodate the pedestrian flow and be designed to blend in with the surrounding environment.

Figure 14: Aids to Older Pedestrians

- Reduced roadway crossing distances (bulb-outs and curb extensions)
- Signal timing at lower than average walking speed
- Signals with 60 feet of viewing distance; easy-to-read signs
- Refuge areas in roadway crossings
- Traffic calming
- Shelter and shade
- Handrails
- Smooth surfaces and unobstructed travel ways

Source: GDOT (2002)

While traffic calming did not rank high on the city's list of priorities, residents complained that pedestrian travel along Cotton and Winthrope Avenues is discouraged by motorists who disregard posted speed limits. The city should examine various forms of traffic calming at intersections along and around both avenues. Traffic calming is particularly important as an aid to older pedestrians (Fig 14).

3.1.9a Vacant Lots

Most Millen residents walk for recreation. Recreational walking is less location-specific, with many residents confining their activities to local neighborhoods. Most of these neighborhoods are located within a mile of Cotton Ave. Attracting recreation walkers will require shop owners and the city invest in lively building facades with architectural relief, windows, and attractive surfacing.

The commercial draw of Cotton Ave. is the Civic Center. Used for church services and concerts on weekends, it is currently underutilized. Georgia Department of Community Affairs grants have been used in the past to complete some restoration but more will be



needed. An effort should be made to acquire a projector and return the Civic Center to a movie theatre. Furthermore, the city and chamber of commerce should promote it as a community use establishment. Its current capacity of 400 is capable of supporting restaurants and retail around Cotton Ave. Attracting more businesses to locate along Cotton Avenue will require the city promote the district.

3.1.9b Intermodal Projects

SR 17 is currently on the Georgia State Bicycle Plan route. While largely a thoroughfare, the city should capitalize on intermodal linkages by supporting a Jenkins County project aimed at providing a bicycle lane along SR121/US25 from Millen to Magnolia Springs State Park. This 4 mile lane will link the state park's existing 8 mile trail and provide a direct bicycle route to Millen's downtown district.

3.2 Other Design Considerations

Regardless of the type of improvement, it is critical that designers be cognizant of the needs of pedestrians and consider the implications of site design decisions on pedestrian movements. Pedestrian Sensitive Site Planning (PSSP) occurs when pedestrians are recognized as a significant factor in shaping the arrangement of onsite facilities and the relationship of those facilities to others. PSSP considers the full range of pedestrians - from children and the elderly to people with disabilities.

3.2.1 Maintenance

Forethought must be given to the practicality of future maintenance. Accessible designs will not improve pedestrian convenience if maintenance is neglected and sidewalks are allowed to degrade to a state where they cannot be used or must be avoided. There are two aspects to maintaining pedestrian facilities: keeping them structurally sound and keeping them clean. Examples of design features to be avoided include blind corners that can accumulate debris and restricted areas that cannot accommodate sweepers or other power equipment. The city should include maintenance strategies in the preliminary planning stages of new construction and alterations, and develop a plan that clearly specifies the frequency of maintenance activities and how reported maintenance concerns will be addressed.

A major barriers to pedestrian travel is surface conditions. Poor condition of pedestrian facilities, whether potholes, broken pavement or debris, can discourage people from walking. Pedestrians are sensitive to gravel, glass, uneven pavement and other hazards. Well-maintained sidewalks encourage walking and are crucial for children, the elderly and pedestrians with disabilities, who often have trouble stepping or rolling over uneven pavement and overgrown vegetation. Sidewalks in Millen's older neighborhoods, particularly those around to Cotton Avenue, are vulnerable to damage from tree roots and aging concrete. A more intense schedule of maintenance, including resurfacing, weed



abatement and steam cleaning is needed. The city should continue to be responsive to citizen complaints regarding sidewalks that are in disrepair.

GDOT and the CSRA RDC are currently working on a district-wide project to collect information on pedestrian facilities. The city should coordinate with these entities to collect sidewalk condition information and create a Pavement Management System (PMS) database in order to more easily identify pedestrian-related problems and incorporate necessary improvements.

3.2.2 Liability

When planning for pedestrian facilities it is important to conform to design criteria contained in the guides mentioned in sec. 3.1. Tort liability and negligence claims related to poor facilities design such as sidewalks and crosswalks are on the rise. Courts employ the concept of “reasonable care” - the level of care that a reasonably experienced and prudent professional would have taken in the same or similar event or action - as the basis for determining negligence and often examine whether designs conformed to standard practice contained in these guides. Beyond design elements the following actions should be taken:

- *Continuous inspections:* Pedestrian signs pointing towards a designated historic district imply reasonably safe travel conditions and the city should ensure that hazards are removed. Reports of hazardous conditions received from police and other government departments should be thoroughly investigated.
- *Documentation:* The city should maintain logs and reports of surface conditions and response actions. A formal record-keeping structure designed to chronicle the maintenance activities will be significant should liability claims occur.

3.3 Travel Demand Management

When considering strategies for improving the pedestrian environment, we need to examine the demand and supply of Millen’s transportation system. Travel Demand Management (TDM) is an area of transportation planning that promotes alternative forms of transportation by influencing traveler behavior. The primary purpose of TDM is to reduce motor vehicle use while providing a range of mobility options to those who wish to travel. TDM efforts are being implemented in urban, and increasingly, in larger rural areas across the country in order to reduce traffic congestion and air pollution, and to render the transportation system more efficient. Alternative forms of transportation include, among others, carpooling, walking, bicycling, and transit. To accomplish these types of changes, TDM programs rely on incentives or disincentives, such as pedestrian facilities, to alter travel behavior.



In Millen, the supply side of transportation is becoming more and more constrained by economic and physical barriers. Limited funds for new roads and future development likely away from current established neighborhoods will require the city address the demand side of transportation.

3.4 Regulatory Controls

Land use patterns have a critical impact on pedestrian circulation and environments conducive to pedestrian transportation. Millen's current long-range land use policies will result in sprawl and encourage disproportionate motor vehicle use. Incremental development along arterials such as SR121/US25 and SR17, with multiple access points for automobiles and large parking lots around buildings often result in inconvenient and unsafe conditions for pedestrians. A sustained effort to plan ahead and seriously examine policies such as infill-development and more intermingled land uses is vital to developing an adequate pedestrian network.

Pedestrian travel is dependent on the distance of potential destinations. A neighborhood is walkable only to the extent that there are functional destinations at its center and that surrounding streets and paths are designed to be pedestrian friendly. Thus, attractions closer to one another are more likely to encourage pedestrian travel. This can be achieved by increasing the density of development so residents have a greater degree of access to services and facilities or locating mutually attracting land uses in close proximity to one another. Closer coordination between land use and transportation can increase the potential for pedestrian transportation around the historic district.

The success of any pedestrian plan, and its implementation, rests on how well it is integrated with an area's land use plan, zoning, and subdivision ordinance. There are a range of planning and regulatory tools to support pedestrian transportation. In Millen they revolve around zoning and subdivision regulations.

3.4.1 Zoning

Local jurisdictions have a wide range of features they would like to see incorporated into development proposals. The City of Millen may be faced with making trade-offs between acquiring new pedestrian access and meeting other community objectives in order to encourage development in a target area.

Zoning regulations contain a set of sections in that describe and define the purposes for which the regulations are adopted, establish zones for different uses, set requirements for development, and establish guidelines for site plans. References to the development of pedestrian access can be included in each of these components of the regulations.

The overall intent of including pedestrian facility provisions in zoning regulations is to ensure that new development or redevelopment of land includes these facilities in the appropriate design and location. References to pedestrian access can be included to



define the types of facilities that are required and establish standards for facility design. Language in zoning regulations can do one or more of the following:

Table 2: Zoning Regulation Options

Action	Minimum	Advanced
Pedestrian access as part of new development	Recommend	Require
Pedestrian access as part of specific types of new development	Recommend	Require
Provide guiding principals for facility design	General	Detailed
Site plans show proposed pedestrian amenities	General	Detailed

Zoning regulations can be crafted to provide incentives that will encourage development in areas of Millen targeted for growth. Since a major factor that affects which zones are attractive for development is costs associated with new roads and other facilities, regulations can include incentives to help minimize or offset costs to construct pedestrian facilities as part of site development. There are several approaches that the city can take to provide incentives for development. These include:

- Release from some zoning requirements (i.e. reduce parking space requirement in exchange for street trees and landscaping).
- Bonuses for site design that is beneficial for the historic district. (i.e. extra square footage in exchange for more pedestrian access).
- Tax credits to provide pedestrian facilities.
- Low-interest loans to provide pedestrian facilities.
- Impact fees to offset the cost for the city to provide pedestrian facilities.

In addition, zoning regulations can establish overlay zones for special purposes. If the city establishes primary areas where it wants pedestrian facilities to be located, then zoning regulations can establish a pedestrian access overlay zone that encompasses those areas.

3.4.2 Subdivision Regulations

The purpose of addressing pedestrian facilities within subdivision regulations is threefold:

- To provide access within developments not addressed in zoning regulations.
- To ensure pedestrian circulation is considered both within a site as well as between a site and surrounding developments.
- To promote consistency of access among multiple new developments.



General provisions of subdivision regulations are similar to those included in zoning regulations. Requirements for approval, application requirements, and design standards are included and guide the development of pedestrian access provisions.

Design standards established for pedestrian access can ensure that the quality of facilities constructed is consistent throughout Millen. This is particularly important for the downtown historic district. The provision of clear standards also reduces confusion on the part of site developers as to requirements.

In sum, the language to require safe and adequate pedestrian access within zoning and subdivision regulations can have the effect of facilitating the design of new walkable places and provide consistently designed corridors in and around Millen's historic district. City officials should examine their body of zoning documents and incorporate regulations that facilitate pedestrian policies contained in this Plan

3.4.3 Public-Private Partnerships

Pedestrian access and facilities are one of a multitude of factors involved in the development process and must compete with other projects. However, when included in development planning from the outset, facilities can be a relatively small cost.

Developers are an ever more integral part of transportation planning and have an especially prominent role in the provision of pedestrian facilities. From developers' perspective, there are several issues related to facilities provision:

- Traditional zoning categories are numerous and complex. Developers argue that using fewer, more general zoning categories provide more flexibility for development and promote integration of different activities.
- Over regulation often hampers development and stifles design when used in a rigid and inflexible way. Regulations should ensure enough flexibility so as to not overwhelm developers.
- Many regulations contain conflicting goals. Provisions ensuring pedestrian access often conflict with other requirements such as minimum lot sizes, minimum parking requirements, and setback requirements that are geared to motor vehicle use and hamper the development of pedestrian-friendly areas. Clear policy in regulations helps developers determine a local jurisdiction's needs.

The dilemma facing the City of Millen is one of providing flexibility for development while ensuring basic elements of a pedestrian system are built.



4.0 Education, Encouragement and Enforcement

As more people walk for recreation and transportation, the need for education and enforcement also rises. Education and enforcement efforts directed at motorists and pedestrians are an effective way to improve safety. A comprehensive approach to pedestrian safety is a key ingredient to safely accommodate pedestrians and encourage walking.



4.1 Accident Trends

Of the over 37,000 U.S. fatalities caused by motor vehicles each year, about 14% involve pedestrians (Table 3). In 75% of pedestrian fatalities, police report pedestrian error as a factor. While the number of pedestrians killed has been reduced by half since 1969, 4739 are still killed annually.

In Georgia, 137 pedestrian fatalities, representing 8.9% of statewide traffic fatalities, were recorded in 2000 (Table 4). While no pedestrian accidents were reported in Millen, residents felt the issue should be addressed in light of two near accidents involving children in the downtown area.

It is important to note these are reported accidents. Accidents resulting in bike-pedestrian collisions and accidents on private property are rarely reported yet contribute significantly to dangerous pedestrian travel conditions.

Table 3: Pedestrian Fatalities in the U.S., 1969-2000

Year	Fatalities
1969	9,000
1980	8,000
1990	6,500
2000	4,739

Table 4: Pedestrian Fatalities in Georgia, 1997-2000

Year	Fatalities	% of Total Traffic Fatalities
1997	182	11.5
1998	159	10.6
1999	167	10.5
2000	182	8.9

Source: Adapted from NHTSA (2000)

4.1.1 Crash Types

In order to develop effective pedestrian education programs, a good understanding of the most common crash types is necessary. If we know the characteristics of these crashes, safety messages, and other countermeasures can be tailored to focus on the most-applicable crash types (Table 5).



Table 5: Crash Types in the U.S., 1990

Type of Crash, United States, 1990	% of all crashes
Pedestrian crossing at intersection	32.1
Pedestrian crossing at midblock location	26.4
Pedestrian hit by driverless or backing vehicle, or police car in pursuit	9.1
Pedestrian hit while waiting to cross street or crossing a driveway	8.6
Pedestrian walking along road	7.4
Pedestrian working or playing in road	3.0
Pedestrian going to / from school or commercial bus or entering / existing parked vehicle	2.6
Other	10.8

Source: adapted from EUTS (2000) and NHTSA (1995)

→ *Dart-out*: Pedestrian enters the street in the middle of a block and either runs into or is hit by a moving vehicle.

Primary errors:

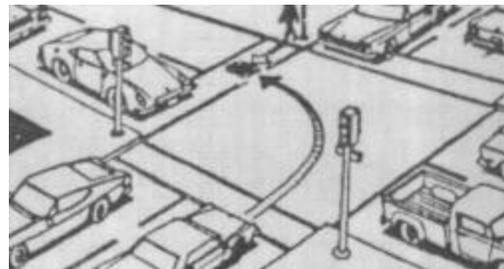
Pedestrian fails to search for traffic.
 Pedestrian fails to yield right-of-way.
 View of pedestrian is obstructed.
 Pedestrians runs into the roadway.



→ *Vehicle turn-merge*: Driver is turning and merging with traffic while the pedestrian is walking. Because the driver is looking the other way or has an obstructed view, the vehicle strikes the pedestrian.

Primary errors:

Motorist fails to search and detect the pedestrian.
 Pedestrian fails to search for traffic.

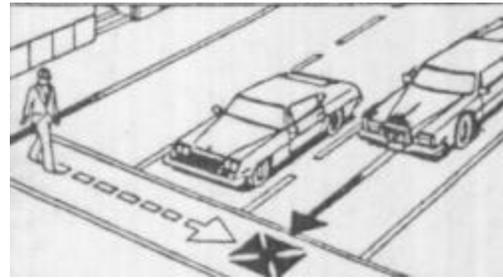


→ *Intersection dash*: Driver does not see pedestrian running across an intersection in time to stop.



Primary errors:

Pedestrian ignores walk/don't walk sign.
View of pedestrian obstructed.
Pedestrian runs instead of walks into intersection.



→ *Backing vehicle*: A vehicle is backing up and strikes a pedestrian who is crossing behind it. This crash usually occurs because the driver does not see the pedestrian or the pedestrian does not realize the vehicle is backing up.

Primary errors:

Pedestrian's failure to search for and detect backing vehicles.
Motorist's unsafe backing practices.
Motorist's failure to anticipate and search for pedestrians.



Source: adapted from NHTSA (1994)

Workshop participants identified motorists who do not respect the right of way of pedestrians as the major issue related to safety. The most common complaint is that motorists turn without looking for pedestrians. When asked why they believe motorists do not look out for pedestrians, residents responded that little, if any, enforcement occurs.

4.1.2 Importance of Reaching all Pedestrians

While planning and design techniques can contribute to solving safety problems, other issues will require more than a design solution. The physical environment cannot address all of the challenges associated with pedestrian travel. For example, safe roadway crossings for pedestrians are clearly a critical part of any pedestrian network. While there are a variety of pedestrian crossing treatments, design alone cannot compensate for driver or pedestrian poor judgment. Continuous public education and enforcement are part of the solution.

In general, the scope of most pedestrian education programs is geared to elementary school children. Effective education programs need to be designed with a clear understanding of the diverse needs of various user groups. Children, adults, and people



with disabilities all have different skill levels, experience, and perception of risks (Fig 15).

1) *Children:* Young pedestrians repeatedly make basic mistakes because they do not understand the traffic system, have limited attention gap and peripheral vision. Crashes involving this group typically happen close to home and are caused by a child crossing the street without looking.

2) *Adults:* Adult pedestrians typically do understand the basics of the traffic system. In many cases, however, they are unwilling) to operate within that system. Adult pedestrians have difficulty crossing at high speed crossings or multi-lane streets that lack median refuge islands.

3) *Seniors/People with Disabilities:* More than any other pedestrian group, seniors and people with disabilities have an excellent understanding of the traffic system, though they have a higher risk of injury because of

motor vehicle inattention. Visible warnings, tactile indications, and audible indicators are necessary for people with seniors and pedestrians with disabilities. Crashes involving this group typically occur at intersections.

4) *Motorists:* Drivers frequently fail to see or acknowledge the presence of pedestrians. Many motorists consider pedestrians a nuisance whenever they are encountered. While relatively few crashes result from such attitude, the intimidation felt by pedestrians is significant and deters many walkers from venturing out.

5) *Newcomers/Immigrant Groups:* In their Pedestrian Design Guide, the Atlanta Regional Commission identifies a new pedestrian group. Numerous immigrant residents have arrived in the Millen-Jenkins County area (approximately 300 over the past 3 years by some estimates). Several areas have a concentration of people who do read the English language well and may not be able to read written warning sign.

Age 0 to 4	<ul style="list-style-type: none"> - Learning to walk - Requiring constant supervision - Developing peripheral vision, depth perception
Age 5 to 12	<ul style="list-style-type: none"> - Increasing independence, but still requiring supervision - Poor depth perception - Susceptible to “dart out” intersection dash
Age 13 to 18	<ul style="list-style-type: none"> - Sense of invulnerability - Intersection dash
Age 19 to 40	<ul style="list-style-type: none"> - Active, full aware of traffic environment
Age 41 to 65	<ul style="list-style-type: none"> - Slowing of reflexes
Age 65+	<ul style="list-style-type: none"> - Street crossing difficulty - Poor vision - Difficulty hearing vehicles approaching from behind
Source: Adapted from GDOT (2002)	



Therefore, safety and directional signage should be shown in symbols, rather than written words in established newcomer population areas. The MUTCD offers several options for regulating the flow of vehicular and pedestrian traffic. Symbols within those standards that are graphic, rather than written, should be encouraged in these areas.

4.2 Encouragement Programs

Promoting walking is necessary to increase awareness that pedestrian transportation is viable and efficient, and can offer many benefits. A cooperative and comprehensive community effort is required in successful encouragement programs. Coordination is required among many groups at different levels for programs to be successful. The following are the most common programs:

4.2.1 Community-Based Programs

Community-based programs are the broadest attempt to reach people on pedestrian encouragement and safety. They include resources and sponsorship by civic groups, police departments, and planning commissions. The RDC, in particular, provides educational materials and coordinates with media and interested organizations in promoting pedestrian issues.

The media is an important player in community-based programs. Television stations include pedestrian issues as topics in newscasts and special series. Radio stations include pedestrian issues as talk show topics and play pedestrian public service announcements. Newspapers cover walking events and issues. Themes can range from health benefits to crime reduction. All media campaigns increase the visibility of walking in the community, thereby promoting the transportation mode.

One of the most innovating programs was developed by the National Highway Traffic Safety Administration (NHTSA). Titled *Pedestrian Road Show*, the program is designed to assist local leaders in making their communities more pedestrian-friendly and in addressing their particular safety needs. The leaders' focus is to identify and advocate for solutions to problems that affect their communities.



4.2.2 School-Based Programs

School-based programs focus on a specific segment of the pedestrian traveling population. Their greatest benefit is that it's easy to influence children at an early age to both walk and walk safely. The NHTSA has developed several curriculum kits created to assist teachers and safety organizations with pedestrian issues. The videos *Stop and Look With Willy Whistle* and *Keep on Looking* are used nationwide.



The *Safe Routes to Schools* program has also been successful. This program investigates routes taken by children to and from school and levels of supervision by adults. The level of safety along those routes is then assessed and an action plan is prepared that includes recommendations to improve safety.

The City and the school board should coordinate to provide safety instruction. Strong, well-designed pedestrian safety education programs for children develop safe and responsible roadway users and emphasize self-reliance rather than protection. Programs should equip youngsters for independence by creating within themselves a safety consciousness that effectively guides their behavior through many real life traffic situations. Children should learn good habits and practice for situations that may suddenly become dangerous. This includes learning to identify hazardous situations, assess problems accurately, calculate the risks involved, and respond in an efficient and timely manner.

4.2.3 Business-Based Programs

Business-based programs encourage employees to walk to work. The economic benefits to the employer are numerous. They include minimized parking requirements, reduced congestion, and in some cases, tax credits for providing a pedestrian-friendly environment. Both employer and employee also benefit from increased physical activity. The City can assist by providing tax breaks to employers who encourage their employees to walk to work.

4.3 Maintenance and Engineering Education

Most maintenance for pedestrian facilities is the responsibility of local transportation maintenance professionals. Not all, however, have specific knowledge of pedestrian needs. In most college-level transportation planning and engineering programs, attention is paid only to the automobile mode, with the odd elective course offered on transit design. No provision is made for studying exclusively the needs of pedestrians. Education and special training for these workers, to make them aware of maintenance considerations for pedestrian safety, is an important step toward meeting the needs of users. Educational workshops and conferences focused on professional development are the most common methods of achieving this.

4.4 Law Enforcement

Enforcement is a critical part of a pedestrian safety programs. Visible enforcement efforts remind both drivers and pedestrians to follow the rules. A common complaint among pedestrians and motorists is that the other does not adhere to traffic laws and that police officers do not enforce existing rules and regulations.





Among the many reasons cited:

- *Social and peer pressure*: Pedestrian infractions are not viewed as "real" crime. Fellow officers and the general public will ask why an officer is issuing a citation instead of stopping burglaries or assaults.
- *Police administration*: In the hierarchy of police matters, pedestrian law enforcement is not a priority. With limited budgets, police departments cannot afford to dedicate much time to such "minor" violations.
- *Personal responsibility*: Pedestrians are not a "real" threat to anyone else. If they disregard traffic laws and get hurt, they only hurt themselves.

4.4.1 Targeted Enforcement

Despite these beliefs, police officers must enforce pedestrian laws. One compromise approach commonly used is to target certain infractions frequently involved in crashes. This targeted enforcement approach is both time efficient and prevents accidents. The following are violations that should be the focus of pedestrian-oriented law enforcement.

Targeted Pedestrian Violations

- Dart out (pedestrian fail-to-yield).
- Jaywalking (mid-block crossing between signalized intersections).
- Pedestrian on controlled-access highways.
- Intoxicated pedestrians (30 to 40% of all adult pedestrians).
- Flagrant violations of "walk/don't walk" signals.

Targeted Motorist Violations

- Unsafe passing, (driver on multi-lane road passing a car stopped at a crosswalk).
- Failure to stop and yield on a right turn on red.
- Failure to yield to a pedestrian in a crosswalk.

4.4.2 Enforcement Options

Many enforcement options are available to decrease the number of infractions. An effective positive reinforcement, particularly among children, is for police officers to reward adherence to pedestrian laws by a nod or other congratulatory sign. Negative reinforcements include verbal warnings, written warnings and citations. It is preferable to use verbal and written warnings before citations.





4.4.3 Safety Education and Enforcement Policies:

- Provide training for law enforcement officials in the conduct of safety education and enforcement program for pedestrians.
- Incorporate pedestrian-related information in local police department officer training program, such as issues concerning pedestrian safety, the importance of pedestrian and traffic law enforcement, and the role officers play in promoting pedestrian safety.
- Encourage consistent and regular enforcement of traffic laws by citing both motorists and pedestrian violations for those infractions that account for most accidents.
- Establish a uniform reporting system for pedestrian accidents.



5.0 Implementation

Millen's historic downtown pedestrian plan outlines a comprehensive framework for approaching pedestrian transportation. Achieving a pedestrian-friendly environment takes more than adopting a pedestrian plan and obtaining funding for Transportation Enhancement (TE) projects. It involves sustained effort over many years by individuals and communities. It means looking out for and promoting the needs of pedestrians not only in public works and planning departments but also in schools, civic organizations, law enforcement agencies, and political arenas.

5.1. Institutionalization

Institutionalization refers to the sustained routinization of pedestrian issues. If procedures and policies are formalized so the needs of pedestrians are routinely considered when streets are resurfaced or plans are reviewed, then projects and programs stands a far better chance of success.

A number of key elements are central to institutionalization:

- A pedestrian advocate in a public works and/or recreation department.
- Plans and policy documents.
- Regulations and ordinances for pedestrian requirements.
- Organized citizen involvement in the planning and development of pedestrian projects.

With a population of less than 3,500 and a limited budget, the City of Millen is incapable of staffing a full-time pedestrian coordinator, producing planning documents and design guides, or extensively reviewing development projects. A range of local agencies and groups will need to participate and coordinate to make the process successful. The city administrator and the chamber of commerce should lead coordination efforts and be responsible for developing, encouraging and tracking the success of the Plan.

Coordinators should have at their disposal a Pedestrian Advisory Committee (PAC) comprised of residents, representatives of community groups, and city departments with an interest in pedestrian transportation. The committee should be empowered to:

- Meet as needed to discuss proposed projects planned for the area.
- Gather and analyze information concerning technical and safety issues.
- Ensure all agencies with jurisdiction and influence over pedestrian facilities have a copy of this plan.



- Maintain communication with regional and state agencies with regard to new developments in pedestrian planning.
- Ensure pedestrian planning efforts are included in related documents, such as comprehensive and regional plans.

5.1.1 Public Participation

Public participation in pedestrian planning is essential and should begin early in the process. The PAC should meet early in the course of a proposed project and hold public meetings. Efforts should be made to incorporate a broad segment of the population into the development of plans and projects by conducting workshops to get public input on pedestrian issues.

5.1.2 Plan Evaluation and Update

A periodic plan evaluation will allow city officials and residents to measure the effectiveness of the plan and look for opportunities to improve it. The evaluation should identify the relevance of the vision statement, goals and objectives, and the progress in reaching the goals and objectives. Individual projects should be evaluated to determine which have been implemented and which remain. Successes and failures should be evaluated to gain a better understanding of what is or is not working so that the plan can be made more effective.

The update will amend any goals and objectives, policies, and implementation processes determined not to appropriately realize the vision of the plan. The update should also identify current pedestrian problems and opportunities and incorporate new projects and programs. The project list should be updated to reflect current needs. The plan should be evaluated and updated at least every five years.

5.1.3 Coordination with Related Planning Efforts

Elements of the plan should be incorporated in the comprehensive plan and the planning process of all city departments to ensure its development. The comprehensive plan's short-term work program should include specific recommendations on pedestrian facilities. Policy statements should also be included in regional plans. Although policy statements and recommendations in related plans do not automatically guarantee the provision of pedestrian facilities, they indicate that recognition exists of the need to plan and encourages specific thought be given to how pedestrians can be accommodated.

5.2 State and Federal Support

Several state and federal agencies are involved in pedestrian transportation. Funding, promotion, planning and design, construction and management, land use development, and enforcement all



involve regulatory controls and statutes set forth in state and federal legislation. Implementing a pedestrian plan requires the coordination of all levels of government.

All of the major funding programs created under ISTEA, and continued under TEA-21 include pedestrian programs as eligible activities. In order to receive federal transportation funds, the legislation requires that each state develop a comprehensive statewide transportation plan. In addition states are required to develop a plan for pedestrian walkways for appropriate parts of the state. Such pedestrian elements must be incorporated into the long-range transportation plan. To use any of the following federal funds (summarized and adapted from various USDOT agencies) the state must first identify the project in the State Transportation Improvement Plan:

5.2.1 Surface Transportation Program

The Surface Transportation Program (STP) provides States with flexible funds which may be used for a wide variety of projects on any Federal-aid Highway including the NHS, bridges on any public road, and transit facilities.

Eligibility - Pedestrian improvements are eligible activities under the STP. This covers a wide variety of projects such as on-road facilities, off-road trails, sidewalks, crosswalks, pedestrian signals, parking, and other ancillary facilities. TEA-21 also specifically clarifies that the modification of sidewalks to comply with the requirements of the Americans with Disabilities Act is an eligible activity.

As an exception to the general rule described above, STP-funded pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. In addition, non-construction projects, such as maps, coordinator positions, and encouragement programs, are eligible for STP funds.

Matching funds - 80 percent Federal, 20 percent State.

5.2.2 Transportation Enhancements

Ten percent of a State's STP apportionment must be set-aside to fund activities that enhance the transportation system in ways that have not traditionally been included in the design and construction of the transportation system.

Eligibility - The list of 12 eligible activities includes three which relate specifically to pedestrian transportation:

- provision of facilities for pedestrians.
- provision of safety and educational activities for pedestrians.
- preservation of abandoned railroad corridors (including the conversion and use thereof for pedestrian trails).



Matching funds - States have the flexibility to allow Federal funds to be used for all or any part of a project under the Transportation Enhancement program provided that the State program as a whole achieves an 80 percent Federal/20 percent State funding balance (subject to the sliding scale for States with significant Federal lands holdings).

States may also, with FHWA approval, allow in-kind contributions such as volunteer labor, land donations and in-kind services to count towards State matching funds, provided that a cash-value can be attributed to the donated time, resource, or product.

5.2.3 Safety Set-Aside

Ten percent of each State's STP apportionment is set aside for infrastructure safety activities. Funding is channeled into two programs: the Hazard Elimination Program (HEP) and the Railway-Highway Crossing Program.

Eligibility - Under the HEP, States must "conduct and systematically maintain an engineering survey of all public roads to identify hazardous locations... which may constitute a danger to motorists, bicyclists, and pedestrians", and implement a prioritized program of improvements to those hazardous locations. Funds may be used for improvements on any public highway, public transportation facility, and any public pedestrian pathway or trail. Traffic calming projects are also specifically mentioned as eligible activities.

TEA-21 does not change the ISTEA requirement that States, at a minimum, fund both the HEP and Railway-Highway Crossing program at FY 1991 levels. Funding above this minimum may be allocated to either program at the discretion of the State. In addition, States must still reserve half of their Railway-Highway Crossing funds for protective devices at railway-highway crossings.

Matching funds - The Federal share for HEP projects is 90 percent.

The Federal share for Railway-Highway Crossing Program projects is 90 percent, except that the Federal share may be 100 percent for signing, pavement markings, active warning devices, and crossing closures.

5.2.4 National Scenic Byways Program

The National Scenic Byways Program recognizes roads having outstanding scenic, historic, cultural, natural, recreational and archaeological qualities by designating them as National Scenic Byways or All-American Roads.

Eligibility - Funds may be spent on a variety of activities including "construction along a scenic byway of a facility for pedestrians and bicyclists, rest area, turnout, highway shoulder



improvement passing lane, overlook, or interpretive facility." Projects must be either associated with a National Scenic Byway, All-American Road, or a State Scenic Byway.

Matching funds - The Federal share is 80 percent.

5.2.5 *Minimum Guarantee*

TEA-21 guarantees that each State receives at least a 90.5 percent return on its contributions to the Highway Account of the Highway Trust Fund in each of the major funding categories including IM, NHS, Bridge, STP, CMAQ, and Recreational Trails. Therefore, each State receives a Minimum Guarantee apportionment in addition to funds for these other programs. As an example, the amounts for FY 1999 vary from approximately \$483,000 for the District of Columbia to more than \$260 million for Texas.

Eligibility - Approximately half of the funds received by a State are administered as STP funds, except that the funds are not subject to the 10 percent set asides for Safety and Enhancement programs. The remaining funds are divided among the IM, NHS, Bridge, CMAQ, and STP programs based on the share each State received for each program.

Matching funds - Matching requirements are the same as for the programs into which the funds are placed.

5.2.6 *State and Community Highway Safety Grant Program*

The State and Community Highway Safety Grant Program supports State highway safety programs designed to reduce traffic crashes and resulting deaths, injuries, and property damage.

Eligibility - States are eligible for these funds (known as "Section 402 funds") by submitting a Performance Plan, with goals and performance measures, and a Highway Safety Plan describing actions to achieve the Performance Plan. Grant funds are provided to States, the Indian Nations, and Territories each year according to a statutory formula based on population and road mileage. Funds may be used for a wide variety of highway safety activities and programs including those that improve pedestrian safety. States are to consider highly effective programs (previously known as National Priority Program Areas), including pedestrian safety, when developing their programs, but are not limited to this list of activities.

Matching funds - Federal share is 80 percent.

5.2.7 *Other Federal Grants*

Federal grants and funding outside the Department of Transportation are available. Most of these funding sources relate to conservation or public health, of which pedestrian activities could



potentially be included. Examples include U.S. Forestry Service and Natural Resource Conservation and Service grants within the U.S. Department of Agriculture. While more difficult to obtain than TE grants, funding opportunities are available as long as pedestrian facilities are linked to conservation efforts.

Community Development Block Grants, provided by the U.S. Department of Housing and Urban Development, are another source of potential funds. Grants are awarded to communities for various types of projects, and may be used for accessibility purposes, such as installation of ramps, curb cuts, wider doorways, wider parking spaces, and elevators. The city should consider applying for a grant to meet accessibility objectives or to capitalize on other projects (such as having sidewalks reconstructed while undertaking water or sewer improvements).

5.2.8 State/Local Match

Most federal programs require that the states put up a portion of the total cost of the project. For state projects this match must be appropriated by the legislature, usually out of a state's general fund revenues. With the exception of states where federal ownership and control of lands is high, the state match is usually 20%. For local projects, local jurisdictions are expected to provide the match.

Cities have jurisdiction over most sidewalks and initiate projects that serve pedestrians. The state funds capital projects and local jurisdictions can use these funds to provide sidewalks, upgrade existing sidewalks, and complete maintenance. It is up to the City of Millen to tap into this funding source.

Future state route widening projects and construction projects are one means of providing pedestrian infrastructure at relatively low cost. Pedestrian facilities may be included as part of existing GDOT transportation improvement projects at little to no cost to local communities when those facilities can be justified and included in adopted planning documents. Each project is evaluated on an individual basis to determine its eligibility.

5.2.9 Local Sources

One of the most important issues involving pedestrian facilities in Millen is adequate funding. The city is faced with many transportation needs and there is limited local funding for sidewalks. Nevertheless, the city cannot continue to neglect pedestrian facilities projects. At a minimum, the city should establish a funding system that balances the need to improve and expand pedestrian facilities throughout Millen with the need to most effectively use available funds.

A potential local source of funding is developer impact fees. In large urban areas such fees are typically tied up to trip generation rates and traffic impacts produced by proposed projects. In smaller cities such as Millen, fees could be based on the assessed value of property or a flat rate.



The RDC will assist the city by identifying state and federal funding and providing technical assistance to establish pedestrian projects and programs.

5.3 Private and Non-Profit Sources

Corporations and not-for-profit groups promote pedestrian transportation in a number of ways. Right-of-way donations for pedestrian walkways often open up new access routes to businesses, particularly those located in downtown districts. Walking clubs throughout the country sponsor education and safety programs, as well as provide funds for specific projects.

A range of private funding sources are available for pedestrian construction, facilities, and educational programs, most related to multi-use pathways. Some supplement TEA-21 programs, while others are stand-alone grants. Smaller in sum than federal and state funds, they require no local match and in many cases can serve as the local match for a TE grant. The following are examples:

5.3.1 Kodak American Greenways Awards

The Eastman Kodak American Greenways Awards, a partnership project of Kodak, The Conservation Fund, and the National Geographic Society, provide small grants to stimulate the planning and design of greenways in communities throughout America.

Eligibility - Grants may be used for activities such as: mapping, ecological assessments, surveying, conferences, and design activities; developing brochures, interpretative displays, audio-visual productions or public opinion surveys; hiring consultants, incorporating land trusts, building a foot bridge, planning a bike path, or other creative projects. In general, grants can be used for all appropriate expenses needed to complete a greenway project including planning, technical assistance, legal and other costs.

Matching funds - The grant share is 100% and range from \$500 to \$2500.

5.3.2 National Trail Fund Grants

In 1998, American Hiking Society created the National Trails Fund, the only privately funded national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. National Trails Fund grants have been used for land acquisition, constituency building campaigns, and traditional trail work projects. Over the last four years, AHS granted nearly \$200,000 to 42 different organizations across the U.S.

Eligibility - AHS will consider projects such as securing trail lands, including acquisition of trails and trail corridors, and the costs associated with acquiring conservation easements; building and



maintaining trails which will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage; and constituency building surrounding specific trail projects - including volunteer recruitment and support.

Matching funds - The grant share is 100% and range from \$2,000 to \$10,000.

5.4 Requirements for Success

In an era of limited transportation funds, an application has to stand out in order to be successful. What ISTEA and TEA-21 have demonstrated more than any other transportation legislation is that pedestrian transportation success requires both technical considerations (proper design, rational link between population base and the cost of infrastructure projects etc.) and community support expressed through public partnerships. To this end, it is recommended that local officials and others interested in pedestrian infrastructure projects, when submitting an application:

- Show public involvement and support for the application (including letters of endorsement from elected officials, organizations, and individuals within the community).
- Document the decision-making process (provide dates, time, and summary of meetings and hearings).
- Demonstrate planning efforts (provide pedestrian plan and emphasize its consistency with the comprehensive plan, and activities of citizen's advisory committee involvement).
- Coordinate activities with regional and state agencies.
- Emphasize the link between the size of the population that can benefit from the proposed project and cost (demonstrate how residents are underserved by existing pedestrian facilities).
- Propose projects that qualify under multiple activities (i.e. multi-path recreation trail that serves transportation or recreation purposes).
- Ensure the local match is committed and available within the project's time frame.

5.5 Project List

Numerous needed projects were identified by residents and pedestrian working group members. It was not practical to include all proposals given that some called for infrastructure investments beyond the City of Millen's financial capabilities. Staff met with interested parties and assisted



with consensus building. The following represents short and long-range projects aimed at improving Millen’s historic downtown pedestrian facilities:

Project	Fund Source
<i>Short-Range (2003-2008)</i>	
Reconstructed Sidewalks (Cotton Avenue)	City, State
Curb Ramps (Cotton Avenue)	City, State
Crosswalk (Winthrope Ave)	City, State
Street Trees (Cotton Avenue)	City, State
Landscaping (Cotton Avenue)	City, State
Historic Banners (Cotton Avenue)	City, State
Historic Street Signs (Cotton Avenue)	City, State
Directional Signs (Cotton Avenue)	City
Lighting Fixtures (Cotton Avenue)	City, State
Street Furniture (Cotton Avenue)	City, State
Building Restoration (Cotton Avenue)	City, Private
Façade Improvements (Cotton Avenue)	City, Private
Pavement Management System	City, RDC
Zoning and other Regulations Review	City, RDC
Encouragement and Safety Programs	City, RDC
Law Enforcement Programs	City, RDC
<i>Long-Range (2008-2015)</i>	
Reconstructed Sidewalks (Winthrope Ave, N. Gray St, Daniel St, Harvey St, N. and S. Masonic St.)	City, State
New Sidewalks (S. Gray St, Trucker Rd, E. Winthrope Ave, Sardis Hwy)	City, State
Curb Ramps (Winthrope Ave)	City, State

Sources Cited and Further Reading

ADA Guidelines

American Council of the Blind. (2000). *Recommended Street Design Guidelines for People Who Are Blind or Visually Impaired*. Washington: American Council of the Blind.

Department of Justice. (2002). *Meeting ADA Requirements (Update)*. Washington: Department of Justice.

U.S. Access Board. (1998). *Accessible Pedestrian Signals*. Washington: U.S. Access Board.

U.S. Access Board. (1999). *Accessible Rights of Way: A Design Manual*. Washington: U.S. Access Board.

U.S. Access Board. (1998). *ADA Accessibility Guidelines for Buildings and Facilities*. Washington: U.S. Access Board.

U.S. Access Board. (1984). *Uniform Federal Accessibility Standards*. Washington: ADAAG.

US Architectural & Transportation Barriers Compliance Board. (1994). *Accessibility Guidelines for Buildings and Facilities*, Title 36, Chapter XI of the Code of Federal Regulations, Sections 1190 and 1191.

Design and Best Practice Guides

American Association of State Highway and Transportation Officials. (1990). *A Policy on Geometric Design of Highways and Streets*. Washington: ASSHTO.

Atlanta Regional Commission (2002). *Best Design Practices*. Atlanta: Atlanta Regional Commission.

Burden, D. (1999). *Street Design Guidelines for Healthy Neighborhoods*. Sacramento: Center for Livable Communities.

Federal Highway Administration. (1994). *Bicycle and Pedestrian Planning Under ISTEA*, Participant Workbook for NHI Course No. 15135. Washington: FHWA Publication No. FHWA-HI-94-028.

- Federal Highway Administration. (1997). *Bicycle and Pedestrian Planning Under ISTEA: A Synthesis of the State of the Practice*. Washington: Federal Highway Administration Publication No. FHWA-PD-97-053
- Federal Highway Administration. (2001). *Designing Sidewalks and Trails for Access (Part I)*. Washington: FWHA Publication No. FHWA-EP-01-027.
- Federal Highway Administration (1996). *Designing Sidewalks and Trails for Access (Part II)*. Washington: FWHA Publication No. FHWA-HI-96-028.
- Federal Highway Administration. (1989) *Planning, Design and Maintenance of Pedestrian Facilities*. Publication No. FHWA-IP-88-019.
- Federal Highway Administration. (1999). *Priorities and Guidelines for Providing Places for Pedestrians to Walk Along Streets and Highways*. Washington: FWHA.
- Institute of Transportation Engineers. (1998) *Design and Safety of Pedestrian Facilities, A Recommended Practice*. Washington: Institute of Transportation Engineers.
- Institute of Transportation Engineers. (1989). *Residential Street Design and Traffic Control*. Englewood Cliffs: Prentice Hall.
- Georgia Department of Transportation. (2002.) *Pedestrian Facilities Design Guidebook*. Atlanta: Georgia Department of Transportation.
- Holtzclaw, J. (1994). *Using Residential Patterns and Transit to Decrease Auto Dependence and Costs*. San Francisco: Natural Resources Defense Council.
- Jarvis, F. (1993). *Site Planning and Community Design for Great Neighborhoods*. Washington: Home Builder Press.
- Kagan, L. et al. (1978). *A Pedestrian Planning Procedures Manual, Vol. II*, Washington: Federal Highway Administration Publication No. FHWA-RD-79-46.
- Khisty, J. "Evaluation of Pedestrian Facilities: Beyond the Level-of-Service Concept." *Transportation Research Record*, No. 1438.
- Krawczyk, P. (1995). "Creating Pedestrian and Bicycle Systems in Conjunction with New Development." *ITE Journal*, May.
- National Highway Traffic Safety Administration. (1988). *Pedestrian Accident Reduction Guide*. NHTSA Publication No. NHTSA-NTS-88-14.
- National Highway Traffic Safety Administration. (1971). *Pedestrian Safety: The Identification of Precipitating Factors and Possible Countermeasures*. Washington: NHTSA Publication No. NHTSA-NTS-71-403.

Shriver, K. (1996). *The Influence of Environmental Design on Pedestrian Travel*. Austin: University of Texas.

Smith, S. et al. (1987). *Planning and Implementing Pedestrian Facilities in Suburban and Developing Rural Areas*. Transportation Research Board, NCHRP Report #294A.

Transportation Research Board. (1987). *Planning and Implementing Pedestrian Facilities in Suburban and Developing Rural Areas*. Washington: TRB Report 294A and 294B.

Untermann, R. (1984). *Accommodating the Pedestrian: Adapting Towns and Neighborhoods for Walking and Bicycling*. New York: Van Nostrand Reinhold.

Legal Aspects

Lewis, R. (1983). *Practical Guidelines for Minimizing Tort Liability*. Washington: AASHTO and FHWA.

Pivnik, S. and D. Oliver. (1982). *Traffic Improvements: Legal Aspects and Liability*. Seminar Notes from the Institute of Traffic Engineers Annual Meeting.

Tidwell, J. (1993). *Driver and Pedestrian Comprehension of Pedestrian Law and Traffic Control Devices*. New York: AAA Foundation for Traffic Safety.

Model Ordinances

City of Stillwater. Book of Ordinances. (chapter 29 sec. 181-191). Stillwater, OK: City of Stillwater.

Michigan Technological University. (1992). *An Ordinance to Regulate Traffic, Vehicular Noise, Parking, Pedestrians, Littering and Defacing of Property*. Houghton: Michigan Technological University.

National Committee on Uniform Traffic Laws and Ordinances. (1992). *Uniform Vehicle Code and Model Traffic Ordinances*. Evanston: NCUTLO.

Surveys, Data, and Research Methods

Corless, J. et al. (2000). *Dangerous by Design: Pedestrian Safety in California*. Washington: Surface Transportation Policy Project.

Dixon, L. (1995). "Adopting Corridor-Specific Performance Measures for Bicycle and Pedestrian Level of Service," *Transportation Planning*, Vol. 22, No. 2

Federal Highway Administration. (1994). *A Compendium of Available Bicycle and Pedestrian Trip Generation Data in the United States*. Washington: Federal Highway Administration Publication No. FHWA-PD-95-009.

Federal Highway Administration (1999). *Guidebook on Methods to Estimate Non-Motorized Travel: Overview of Methods*. Washington: Federal Highway Administration Publication No. FHWA-RD-98-165.

Federal Highway Administration (1999). *Guidebook on Methods to Estimate Non-Motorized Travel: Supporting Documentation*. Washington: Federal Highway Administration Publication No. FHWA-RD-98-166.

Federal Highway Administration. (1995). *National Personal Transportation Study*. Washington: FHWA.

Federal Highway Administration. (1994). *The National Bicycling and Walking Study Final Report, Transportation Choices for a Changing America*. Washington: Federal Highway Administration Publication No. FHWA-PD-94-023.

Kell, J. (1992). "Transportation Planning Studies," in *Transportation Planning Handbook*. Washington: Institute of Transportation Engineers.

McCann, B. and B. DeLille. (2000). *Mean Streets 2000: Pedestrian Safety, Health and Federal Transportation Spending* Washington D.C.: Surface Transportation Policy Project.

Rodale Press. (1995). *Survey of Walking*. Emmaus: Rodale Press.

Traffic Calming

Burrington, S. and V. Thiebach. (1995). *Take Back Your Streets : How to Protect Communities from Asphalt and Traffic*. Boston: Conservation Law Foundation.

Institute of Transportation Engineers. (1993). *Speed Humps Guidelines for the Design and Application of Speed Humps*. Washington: Institute of Transportation Engineers.

Institute of Transportation Engineers. (1997). *Traditional Neighborhood Development Street Design Guidelines*. Washington: ITE Transportation Planning Council Committee.

Knoblauch, R. et al. (1999). *Pedestrian Crosswalk Case Studies*. Washington: Federal Highway Administration.

Local Government Commission Center for Livable Communities. (2000). *Streets, Sidewalks, People and Cars: The Citizen's Guide to Traffic Calming*. Sacramento: LGCCCLC.

Pietrucha, M. et al. (1990). "Motorist Compliance with Standard Traffic Control Devices," *Public Roads*, Vol. 53, No. 4

Public Technology, Inc. (1998). *Slow Down, You're Going Too Fast: The Community Guide to Traffic Calming*. Washington: Public Technology.

Robertson, H. (1988). "The Application of Pedestrian Signalized Intersections," *Public Roads*, Vol. 48, No. 3.

Robertson, H. and E.Carter. (1984). "The Safety, Operational, and Cost Impacts of Pedestrian Indications at Signalized Intersections," *Transportation Research Record 959*.

Zegeer, C. et al. (1983). *Pedestrian Signalization Alternatives*. Federal Highway Administration Publication No. FHWA-RD-83-102.

Education and Safety

Britt, J. et al. (1995). "Law Enforcement, Pedestrian Safety, and Driver Compliance with Crosswalk Laws: Evaluation of a Four-Year Campaign in Seattle," *Transportation Research Record 1485*.

Center for Urban Transportation Research. (2000). *Making Crosswalks Safer for Pedestrians - Application of a Multidisciplinary Approach to Improve Pedestrian Safety at Crosswalks in St.Petersburg, Florida*. Tampa: University of South Florida.

Environmental Working Group. (1997). *Mean Streets: Pedestrian Safety and Reform of the Nation's Transportation Law*. Washington DC: Environmental Working Group.

Federal Highway Administration. (1993). *FHWA Case No. 1 Reasons Why Bicycling and Walking Are Not Being Used More Extensively As Travel Model*. Washington: Federal Highway Administration Publication No. FHWA-PD-92-041.

Federal Highway Administration. (1993). *FHWA Case No. 12: Incorporating Consideration of Bicyclists and Pedestrians into Education Programs*. Washington: Federal Highway Administration Publication No. FHWA-PD-92-036.

Federal Highway Administration. (1993). *FHWA Case No. 13: A Synthesis of Existing Bicyclist and Pedestrian Related Laws and Enforcement Programs*. Washington: Federal Highway Administration Publication No. FHWA-PD-93-018.

- Federal Highway Administration. (1997). *Pedestrian Crash Types: A 1990s Informational Guide*. Washington: Federal Highway Administration.
- Federal Highway Administration. (1992). *Safety Effectiveness of Highway Design Features, Volume VI: Pedestrian and Bicyclists*. Washington: Federal Highway Administration.
- Gibby, A. et al. (1994). *Evaluation of Marked and Unmarked Crosswalks at Intersections in California*. Chico: California State University.
- Herms, B. (1972). "Pedestrian Crosswalk Study: Accidents in Painted and Unpainted Crosswalks," *Transportation Research Record No. 406*.
- Knoblach, R. et al. (1998). *Investigation of Exposure Based Pedestrian Accident Areas: Crosswalks, Sidewalks, Local Streets and Major Arterials*. Washington: Federal Highway Administration Publication No. FHWA-RD-88-038.
- Koenig, D. (1994). "The Impact of a Media Campaign in the Reduction of Risk-Taking Behavior on the Part of Drivers," *Accident Analysis and Prevention*, Vol. 26.
- Pietrucha, M. and K. Opiela. (1993) "Safe Accommodation of Pedestrians at Intersections," *Transportation Research Record No. 1385*.
- Retting, R. et al. (1996). "Special Signs and Pavement Markings Improve Pedestrian Safety," *ITE Journal*, Vol. 66, No. 12.
- Snyder, M. and R. Knoblauch. (1971). *Pedestrian Safety: The Identification of Precipitating Factors and Possible Countermeasures*. Federal Highway Administration Operations Research Report No. FH11-7312.
- Zegeer, C. et al. (2000) *Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations*. Chapel Hill: University of North Carolina Highway Safety Research Center.
- Zegeer, C. (1991). *Synthesis of Safety Research—Pedestrians*. Washington: Federal Highway Administration Publication No. FHWA-SA-91-034.

10) Do you believe motorists ignore traffic rules and put pedestrians in danger?

Yes___ No___

If yes, which of the following puts pedestrians at greater risk? (please circle)

- Failing to yield the right-of-way
- Speeding
- Failing to obey stop signs
- Other _____

11) Do you believe pedestrians ignore traffic rules and put themselves in danger?

Yes___ No___

12) What is your city's worst intersection?

Location _____

Why? _____

13) Do you believe investment in pedestrian facilities (i.e. sidewalks, crosswalks etc) are given adequate consideration in your city? Yes___ No___

14) Do you believe the city should invest more in pedestrian facilities?

Yes___ No___

15) Any other comments? _____

APPENDIX B

MODEL PEDESTRIAN LAWS AND ORDINANCES

This chapter is devoted to laws and ordinances which are specifically applicable to pedestrians. Model regulations are presented in two distinct categories, with a third section being reserved for a general discussion of related issues. The use of the term “model” should in no way construe that the wording of each regulation is legally correct. Where possible, the laws and ordinances are repeated directly from, or adapted from, jurisdictional codes, which do have legal connotations. However, many were developed without the input of a legal expert. The primary intent of this chapter is to present a set of regulations which is comprehensive, but without overly restrictive wording which may render some impractical under certain circumstances. A jurisdiction desiring to pass a pedestrian ordinance may use this chapter as a general guide, but legal counsel is required to ensure that the exact phrasing is appropriate for that area.

WORDS AND PHRASES DEFINED

Crosswalk - *That part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the high way measured from the curbs or, in the absence of curbs, from the edges of the traversable roadway; and in the absence of a sidewalk on one side of the roadway, that part of a roadway included within the extension of the lateral lines of the existing sidewalk at right angles to the centerline. Any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface is also considered a crosswalk.*

This definition is adapted from the UVC 110]. Perhaps the only omission is the location of a crosswalk at an intersection where there are no sidewalks on either side of the roadway. For legal purposes, a crosswalk at a location like this could be defined with reference to the distance from the curb or edge of the intersecting roadway, but practical considerations prevent this. Where there are no sidewalks, pedestrians will make their own footpaths, and the crosswalk centerline should follow the endpoints of these paths. Also, there may be physical obstructions such as fences, bushes, holes, and the like which would

make such a definition unwise. It is probably concerns like these which led to this omission.

Motorized Wheelchair - *Any self-propelled vehicle designed for, and used by, a handicapped person that is incapable of a speed in excess of eight miles per hour. Any person using a motorized wheelchair on any public street, highway, or bicycle way shall be considered a pedestrian.*

The basic definition of a motorized wheelchair is taken directly from the UVO, but the inclusion of the clause defining an operator of such a vehicle as a pedestrian was the result of practical considerations 1101. Although a motorized wheelchair is defined as a vehicle, one cannot expect it to be operated in the same manner and for the operator to have the same rights and responsibilities as a motor vehicle or a bicycle. A person in a wheelchair will behave much more like a pedestrian than a driver.

Pedestrian - *Any person on a public street, highway or bicycle way who is traveling without benefit of a vehicle, with the exception that any person in a wheelchair or similar device, is considered a pedestrian.*

The Uniform Vehicle Code's definition of a pedestrian as "any person afoot" is inadequate when it is considered that many handicapped people use manually operated wheelchairs or their motorized counterparts, which are legally defined as vehicles [10]. The legal definition should be structured so that persons in wheelchairs or a similar device are classified as pedestrians in accord with the definition for motorized wheelchairs.

Safety Zone - *The area or space officially set apart within a roadway for the exclusive use of pedestrians and which is protected or is so marked or indicated by official traffic control devices as to be plainly visible at all times while set apart as a safety zone.*

The use of safety zones is gaining in popularity as the concerns of elderly and handicapped pedestrians, who may not travel as fast as other pedestrians, become more of an issue. These persons often find themselves stranded in the middle of the roadway when

pedestrian crossing signals change, resulting either in unnecessary delay for drivers or the need for the crosser to wait in the roadway until there is a sufficient gap or until the next protected signal. On roadways with high volumes and/or high speeds, this is an extremely dangerous situation which can be averted by the installation of a protected refuge area in the median of the roadway. A pedestrian may easily cross one direction of the roadway while under the protection of a signal, then wait in the safety zone until the next crossing opportunity. Not only does the provision of a safety zone reduce pedestrian exposure to hazard, but it may considerably reduce the delay to vehicular traffic. If the roadway is exceptionally wide and there is a high volume of traffic, the volume of the cross street may not be high enough to warrant a green signal which is sufficiently long to allow pedestrians to cross the entire width of the primary road.

Individual agencies should set standards for the installation of safety zones and make every effort to construct them where warranted. Numerous publications exist to aid agencies in drafting such policies. This definition is from the UVC 1101.

Sidewalk - *That portion of a street between the curb lines, or the lateral lines of a roadway, and the adjacent property lines, intended for use by pedestrians and by bicyclists and other users where permitted.*

In the UVC, the definition of a sidewalk notes that such facilities are intended for use by pedestrians, with no mention of bicyclists [101]. Though sidewalks are built primarily with pedestrians in mind, their use by bicyclists in jurisdictions where such activity is legal requires the inclusion of the clause at the end of this definition.

PEDESTRIAN RIGHTS AND RESPONSIBILITIES

Paragraph 1 - *Obedience to Traffic Control Devices and Traffic Regulations*

(a) *A pedestrian shall obey the instructions of any official traffic control device specifically applicable to him or her, unless otherwise directed by a police officer.*

(b) Pedestrians shall be subject to traffic and pedestrian control signals as provided in

Sections 2 and 3 of this article.

(c) At all other locations, pedestrians shall be accorded the privileges and shall be subject to the restrictions stated in this article.

Adapted from the UVC, this section establishes that pedestrians are bound to follow any official signals or the instructions of any police officer 1101. Agencies will need to add subparagraphs to this provision detailing the penalties for violating any of the laws and ordinances in this article.

Paragraph 2 - Drivers to Exercise Due Care

Notwithstanding other provisions of this article or provisions of any local ordinance, every driver of a vehicle shall exercise due care to avoid colliding with any pedestrian and shall give an audible warning when necessary and shall exercise proper precaution upon observing any child or any obviously confused, incapacitated, or intoxicated person.

This rather non-specific section is taken from the UVC 1101. It is intended to ensure that a driver make every effort reasonable to avoid an accident, even if the pedestrian is clearly in violation of one or more traffic laws.

Paragraph 3 - Traffic Control Signal Legend

Whenever traffic is controlled by traffic control signals exhibiting different colored lights successively, or with arrows, the following colors shall be used and shall indicate and apply to operators of vehicles and pedestrians as follows below. In the event an official traffic signal is erected and maintained at a place other than an intersection, the provisions of this section are applicable except as to those provisions which by their nature can have no application.

(a) Green Go Light - Vehicular traffic facing a green signal may proceed straight through or turn right or left unless at such place prohibits either such turn, but vehicular traffic shall yield the right of way to other vehicles and to pedestrians lawfully within the intersection or an adjacent crosswalk at the time such signal is exhibited. Pedestrians,

and persons who are riding bicycles in a manner which is consistent with the safe use of the crosswalk by pedestrians, facing the signal may proceed across the roadway within any marked or unmarked crosswalk.

(b) Yellow - When shown with or following the green, traffic facing a yellow signal shall stop before entering the intersection unless so close to it that a stop may not be made in safety.

(c) Red - Vehicular traffic facing a red signal shall stop before entering the crosswalk on the near side of an intersection, or if none, then before entering the intersection or at such point as may be indicated by a clearly visible sign or marking and shall remain standing until green or other signal permitting movement is shown. No pedestrian or bicyclist facing such signal shall enter the roadway unless he or she can do so safely and without interfering with any vehicular traffic. Vehicular traffic facing a red signal at an intersection may, after stopping as required, cautiously enter the intersection to make a right turn into the nearest lawfully available lane for traffic moving to the right or to turn left from a one-way highway into the nearest lawfully available lane of a one-way highway on which vehicular traffic travels to the left. No turn may be made on a red signal if lanes of moving traffic are crossed or if a sign at the intersection prohibits a turn. In making a turn on a red signal, vehicular traffic shall yield the right-of-way to pedestrians and bicyclists lawfully within a crosswalk and to other traffic lawfully using the intersection.

(d) Green Arrow - Vehicular traffic facing a green arrow signal may enter the intersection only to make the movement indicated by the arrow but shall yield the right-of-way to pedestrians and bicyclists lawfully within a crosswalk and to other traffic lawfully using the intersection. When the green arrow signal indicates a right or left turn traffic shall cautiously enter the intersection. No pedestrian or bicyclist facing such signal shall enter the roadway unless he or she can do so safely and without interfering with any vehicular traffic.

This section is adapted from the Wisconsin Statutes and details the requirements of motorists and pedestrians at intersections and other locations controlled by traffic

signals, but where no pedestrian signals are provided 1361. Basically, a pedestrian is required to emulate the actions of vehicles on the road which parallels the direction in which the pedestrian is traveling. Pedestrians may cross the intersecting roadway when facing a green signal intended for the parallel roadway, and motorists are required to yield to them. When facing a signal with a red indication, meaning that vehicular traffic is moving on the cross street, the pedestrian may cross only after making sure that it is safe to do so. In jurisdictions where a right turn on red is lawful, motorists must yield to pedestrians in a crosswalk. The portion of subparagraph (c) concerned with such a maneuver is enclosed in parentheses so that it may be deleted by agencies where right turn on red is not permitted. When facing a green arrow, the pedestrian must act in the same way as when facing a red signal, since it is assumed that vehicles approaching from the other direction will also have a green arrow and will be turning onto the cross street which the pedestrian is crossing.

Paragraph 4 - Pedestrian Control Signals

Whenever special pedestrian control signals are in place, such signals indicate as follows:

(a) Steady Walk or Steady White or Green Symbol - A pedestrian, or a person riding a bicycle in a manner which is consistent with the safe use of the crossing by pedestrians, facing such a signal may proceed across the roadway or other vehicular crossing in the direction of the signal and the operators of all vehicles shall yield the right-of-way to the pedestrian or bicyclist.

(b) Flashing Walk or Flashing White or Green Symbol - A pedestrian, or a person riding a bicycle in a manner which is consistent with the safe use of the crossing by pedestrians, facing such a signal may proceed across the roadway or other vehicular crossing in the direction of the signal, exercising caution due to vehicles potentially turning across their path, and the operators of all vehicles shall yield the right-of-way to the pedestrian or bicyclist.

(c) Flashing Don't Walk or Flashing Red Symbol - No pedestrian or bicyclist may start to cross the roadway or other vehicular crossing in the direction of such a signal, but any

pedestrian or bicyclist who has partially completed crossing on the “Walk or similar signal may continue ahead to the far side of the crossing or to a safety zone. Operators of all vehicles shall yield the right-of-way to the pedestrian or bicyclist who is in the process of crossing.

(d) Steady Don’t Walk or Steady Red Symbol - No pedestrian or bicyclist may start to cross the roadway or other vehicular crossing in the direction of such a signal, and any pedestrian or bicyclist who has partially completed crossing on the “Walk” and flashing “Don’t Walk, “signals, or on other similar signals, must immediately leave the roadway by proceeding to the nearest curb, edge, or safety zone, regardless of direction. Nothing in this provision relieves operators of motor vehicles from the requirement to exercise due caution.

One frequently cited problem with regard to pedestrian signals is the lack of uniformity and understanding of the pedestrian signal phases. Some agencies use the current standard of white walk and orange don’t walk illumination, while other agencies have not upgraded the old green and red signals. In many cases, a flashing walk phase is not used and, when used, pedestrians are confused as to the meaning. For this reason, this regulation was adopted from the UVC, and includes a description of the meaning of the flashing walk phase, since it is still in fairly common usage and often creates confusion [10]

Many countermeasures have been proposed to alleviate this problem, including the development of new signs and pavement markings. Perhaps one of the better alternatives is a sign which depicts each of the pedestrian signal phases, accompanied by an explanation of what each signal means. The sign is mounted at eye level on poles at intersections and has become popular, with several agencies currently using this device or others similar to it [160]. Another alternative is to adopt a provision such as the one above which is much more explicit than the UVO and details the four major phases used in pedestrian signals. No effort was made to develop regulations for innovative signals due to the wide variety of designs and the lack of available information on exactly how they operate. Jurisdictions which use such devices should conform their signals and regulations to accepted standards.

The installation of a pedestrian signal should reduce the number of conflicts and accidents occurring at an intersection. This may not be the case, however, if the experiences of Lowell, Massachusetts are indicative [611]. Ten pedestrians were injured in two years at a location with a pedestrian signal. Because the overwhelming majority of crossers disobeyed the signal due to the lengthy time required to receive a permissive phase, the signal was removed. In the 16 months following removal, no accidents were reported. Although no statistically valid conclusions can be drawn from this example, other studies have shown that the installation of pedestrian signals may not yield the desired or anticipated safety benefits. A study of 5,100 accidents in 20 different urban areas by Robertson and Carter concluded that “.... pedestrian indications appear to contribute to the reduction of accidents or accident potential at some intersections, have little or no effect at others, and even increase accidents at still others” [621]. Zegeer, Opiela and Cynecki drew a similar conclusion, indicating the effectiveness of pedestrian signals depended significantly on the different strategies for timing [631]. The two primary reasons for this apparent lack of consistent effectiveness is that pedestrian signals either give people a false sense of security or are used with such a long cycle that pedestrians get frustrated and cross illegally.

Paragraph 5 - *Right of Way in Crosswalks*

(a) At an intersection or crosswalk where traffic is not controlled by traffic control signals or by a police officer, the operator of a vehicle shall yield the right-of-way, slowing down or stopping if need be to so yield, to a pedestrian, or person riding a bicycle in a manner which is consistent with the safe use of the crosswalk by pedestrians, who is crossing the roadway within a crosswalk when the pedestrian or bicyclist is upon the half of the roadway upon which the vehicle is traveling, or when the pedestrian or bicyclist is approaching so closely from the opposite half of the roadway as to be in danger.

(b) No pedestrian or bicyclist shall suddenly leave a curb or other place of safety and walk, run or ride into the path of a vehicle which is so close that it is difficult for the operator of the vehicle to yield.

(c) Whenever any vehicle is stopped at an intersection or crosswalk to permit a pedestrian or bicyclist to cross the roadway, the operator of any vehicle approaching from the rear shall not overtake and pass the stopped vehicle.

This article is a combination of provisions stipulated in the UVC and the Wisconsin Statutes [10, 361. Basically, the wording is the only difference, with the exception that Wisconsin includes bicyclists. This provision establishes that a pedestrian always has the right-of-way over motor vehicles, providing the pedestrian is legally crossing the roadway and is exercising due caution while doing so.

Paragraph 6 - Crossing at a Location Other Than a Crosswalk

(a) Every pedestrian crossing a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right of way to all vehicles upon the roadway.

(b) Any pedestrian crossing a roadway at a point where a pedestrian tunnel or overhead pedestrian crossing has been provided shall yield the right-of-way to all vehicles upon the roadway.

(c) Between adjacent intersections at which traffic control signals are in operation, pedestrians shall not cross at any place except in a marked crosswalk.

(d) No pedestrian shall cross a roadway intersection diagonally unless authorized by official traffic control devices; and when authorized to cross diagonally, pedestrians shall cross only in accordance with the official traffic control devices pertaining to such crossing movements.

This section, adapted from the UVC, sets guidelines for how and when a pedestrian may cross a roadway outside of a crosswalk 1101. Violating subparagraphs (c) or (d) constitutes jaywalking, as does violating a pedestrian crossing signal provision as established in Paragraph 4 of this section. In some jurisdictions, a pedestrian who crosses at street level when a tunnel or overhead crossing has been provided for his or her use

would also be considered a jaywalker, but many such facilities are not accessible to handicapped people and requiring their use by everyone cannot be enforced effectively in such cases.

Paragraph 7 - Pedestrians to Use the Right Half of Crosswalks

Pedestrians and bicyclists shall move, whenever practicable, upon the right half of crosswalks.

Paragraph 8 - Use of Sidewalks

(a) Where a sidewalk is provided and its use is practicable, it shall be unlawful for any pedestrian to walk along and upon an adjacent roadway.

(b) Where a sidewalk is not available, any pedestrian walking along and upon a highway shall walk only on a shoulder, as far as practicable from the edge of the roadway.

(c) Where neither a sidewalk nor a shoulder is available, any pedestrian walking along and upon a highway shall walk as near as practicable to an outside edge of the roadway, and, if on a two-way roadway, shall walk only on the left side of the roadway.

(d) Except as otherwise provided in this article, any pedestrian upon a roadway shall yield the right-of-way to all vehicles upon the roadway.

Paragraph 9 - Driving Through a Safety Zone Prohibited

No vehicle shall at any time be driven through or within a safety zone.

Paragraph 10 - Right-of-Way on Sidewalks

The driver of a vehicle crossing a sidewalk shall yield the right-of-way to any pedestrian and all other traffic on the sidewalk.

Paragraph 11 - Yielding to Authorized Emergency Vehicles

(a) Upon the immediate approach of an authorized emergency vehicle making use of audible and visual signals meeting the requirements set forth in other articles, or of a police vehicle properly and lawfully making use of an audible signal only, every pedestrian shall yield the right-of-way to the authorized emergency vehicle.

(b) This section shall not relieve the driver of an authorized emergency vehicle from the duty to drive with due caution for the safety of all persons using the highway nor from the duty to exercise due caution to avoid colliding with any pedestrian.

Paragraph 12 - Blind Pedestrian Right-of-Way

The driver of a vehicle shall yield the right-of-way to any blind pedestrian carrying a clearly visible white cane or accompanied by a guide dog.

Paragraph 13 - Bridge and Railroad Signals

(a) No pedestrian shall enter or remain upon any bridge or approach thereto beyond the bridge signal, gate, or barrier after a bridge operation signal indication has been given.

(b) No pedestrian shall pass through, around, over, or under any crossing gate or barrier at a railroad crossing or bridge while such gate or barrier is closed or is being opened or closed.

Sections 7 through 13 were adapted from the UVC, with only minor revisions which did not affect the intended meaning and possible interpretations [10].

Paragraph 14 - Soliciting Rides or Business

(a) No person shall stand in a roadway for the purpose of soliciting a ride.

(b) No person shall stand on a highway for the purpose of soliciting employment or business, or contributions from the occupants of any vehicle.

(c) No person shall stand on or in proximity to a street or highway for the purpose of soliciting the watching or guarding of any vehicle while parked or about to be parked on a street or highway.

This section is repeated directly from the UVC, but merits some discussion [101]. The provisions of subparagraph (b) are often disobeyed, with the knowledge and consent of police departments, in jurisdictions which have a similar law on the books. One group of people, panhandlers and people offering their services for food or money, are almost impossible to regulate. When caught, these people are most often simply told to move along, but the offender will only wait until the policeman is out of sight or will move to a different corner. A second group includes people who are legitimately selling items such as newspapers or flowers, usually with no pressure being used on the motorists to purchase these items. A third category of solicitors are those who are collecting donations for any number of causes.

Prohibiting the activities of the latter two groups may cause bad publicity for an agency and would hurt those who depend on such methods for their livelihood, as well as many charitable organizations. The potential hazard to persons engaging in such acts cannot be disputed, though. Any agency which wishes to allow the continuance of soliciting in this manner should strictly regulate the persons involved. Applications should be made to the police department and permits issued by the same with the requirement that the solicitors use safety vests to increase their conspicuity. Any person soliciting at an intersection, when asked to do so by a police officer, should produce a permit with his or her name on it, as well as some form of identification. In addition, the highway agency should be freed of any liability in instances where people engaged in these activities are injured in an accident.

Paragraph 15 - Pedestrians Under the Influence of Alcohol or Drugs

A person who is under the influence of alcohol or any drug to a degree which renders himself or herself a hazard shall not walk or be upon a highway except on a sidewalk or

in a legal crosswalk.

This section was taken from the UVC 110]. Drunk pedestrians are usually dealt with under the regulations against public intoxication or drunk and disorderly conduct. No agencies were identified which have specific laws or ordinances concerning drunk pedestrians, and to have such laws may not be necessary since the existing provisions under which they are penalized may be adequate. Bicycling and walking have become popular alternatives for people who lose their driver's license for conviction of driving while under the influence. Of the 7,000 pedestrian fatalities which occur each year in the United States, approximately one-third of them are intoxicated, with an average blood alcohol level nearly double that of drunk drivers who are killed in automobile accidents. In about 12% of these accidents, the victim was laying in the road prior to impact due to stumbling, passing out, or trying to absorb heat from the roadway [64]. The solution to this problem lies in enforcement, not legislation.

Paragraph 16 - Use of Reflective Material

Any pedestrian walking or running on or upon a roadway between the period of one-half hour after sunset to one-half hour before sunrise, or in other conditions of limited visibility, should wear reflective material which is clearly visible from 300 feet under the lawful lower beams of motor vehicles.

This section is provided in response to the growing number of people who jog or walk early in the morning or during the evening along roadways. Usually such activity takes place in residential areas where speeds and volumes are low, but some safety standard is necessary. Many people engaging in these activities take it upon themselves to wear reflective material out of concern for their personal safety, but the adoption of a provision similar to this one would give some legal authority for police officers to enforce it against those who do not.

PEDESTRIAN-RELATED ORDINANCES

Paragraph 17 - *Stopping Before Passing an Ice Cream Truck*

Any operator of a vehicle approaching a standing ice cream truck must come to a complete stop before proceeding cautiously around or past the truck. The ice cream truck must be equipped with a stop signal arm and flashing lights in the front and rear which must be used when in the process of stopping with the intent to vend, or while standing and in the process of vending.

Paragraph 18 - *Disabled Vehicle on a Freeway*

When any vehicle becomes disabled on a limited-access roadway, the driver of said vehicle must move the vehicle as far off the traveled roadway as reasonably possible and place approved warning devices behind the vehicle in position to suitably warn approaching drivers of the hazard. Any person who leaves a disabled vehicle between the period of one-half hour after sunset to one-half hour before sunrise, or in other conditions of limited visibility, in order to obtain help must wear reflective material which makes him or her clearly discernible under direct lawful lower beams of an approaching motor vehicle at a distance of 300 feet. This is the only situation where it shall be legal to walk upon a limited-access highway, except for the execution of official duties.

Both of these provisions are adapted from a 1980 report of the Transportation Task Force of the Urban Consortium for Technology Initiatives 1651. The intent of the first ordinance is to make motorists more aware of the dangers of children crossing the street in the vicinity of an ice cream truck. It requires the truck to be equipped with a signal arm and flashing lights, similar to a school bus. Similarly, it stipulates that any vehicle approaching the ice cream truck while the warning devices are in operation, must come to a complete stop. The difference lies in the fact that after stopping, the driver may proceed cautiously about his or her way. This is warranted since ice cream trucks may stay in one position for lengthy periods of time. In Detroit, Michigan, a field test of a similar ordinance produced a 77% decrease in the number of accidents involving ice cream trucks [66]. The ordinance was first used by Indianapolis, Indiana, in 1971, and

that city considered its experience a success.

The second provision requires that drivers of disabled vehicles on a limited-access highway ensure that their vehicles are moved as far out of the way of other vehicles as possible. When walking along the highway at night to summon help, reflective material visible from 300 feet is required. It is felt that this distance is sufficient to provide motorists with adequate warning of the presence of a pedestrian and allow them to take any necessary countermeasures. Such countermeasures should not be needed since the pedestrian would be required by Paragraph 8 to walk on the shoulder, as far to the right as practicable. No information was available on whether this provision has been implemented anywhere or what its success has been.

OTHER CONSIDERATIONS

Linking Bicycling and Walking With Mass Transit

To encourage use of transit in a community, highway agencies and transit authorities should cooperate to ensure that modal transitions can be easily accomplished. The installation of paths linking rail stations and transit centers to nearby residential areas, aside from facilitating bicycle use, encourages people to bicycle or walk to and from home, rather than making the trip by automobile. When considering bus stop modal transitions, pedestrian facilities should be of more concern than bicycle facilities. Since bus stops are more numerous and the network more comprehensive, walking is a practical way to reach them. In addition it is often unwise to leave a bicycle chained up at a bus stop for any substantial length of time. Agencies should make every effort to ensure that sidewalks are provided which connect bus stops to nearby apartment complexes, shopping centers, and office buildings. Transit authorities should adopt policies which make using a bus system a more attractive alternative. Many people refuse to use a public bus because the popular perception holds that buses are only for the very young or for the poor. Anyone seeing another person standing alongside the roadway in a cold, driving rain with their shoes buried two inches in mud certainly would not consider a bus ride as preferable to the use of a private automobile. Providing a paved area on which to stand, as well as benches and protective shelters, will help erode this perception and may increase bus usage in a community.

Another bus stop standard which should be adopted involves the location of stops at

intersections. Where a bus stop is to be provided at an intersection, it should be placed just beyond the intersection and space, when possible, should be provided for buses to pull off the roadway so that other traffic may pass. People exiting from the bus should be prohibited from crossing in front of the bus, rather they should walk back to the intersection and cross there.

Removing Sidewalk Obstacles

Cities with congested sidewalks should consider ordinances which remove some of the clutter and thereby increase pedestrian flows. In New York City, street vendors present a major obstacle on some sidewalks, and efforts have been made to remove unlicensed vendors thereby providing additional space for pedestrians [67]. Other objects which can be regulated or prohibited altogether include benches, newsstands, telephone booths and bus shelters. Street entertainers often generate large crowds, but attempting to remove them from their positions may prove to be extremely unpopular.

Often, it is not such semi-permanent obstacles which present the major hazard to bicyclists and pedestrians, but rather those which are transitory or correctable. Garbage and trash collection is a particular problem, since many homeowners will take advantage of clean, level surfaces such as the sidewalk to pile rubbish. Snow and ice removal presents another dilemma, particularly since many people are wary of being sued by someone who may slip and fall on the sidewalk in front of their home. In their view, it may be more advantageous not to clear the sidewalk at all, rather than to risk missing a small ice patch and becoming a defendant in a civil suit. Many cities have attempted to correct this by passing ordinances which prohibit the temporary blocking of any sidewalk or the failure to remove snow within a certain time period. Enforcing a ban on placing garbage and trash on the sidewalk is considerably easier than ensuring that snow is removed in a timely and correct manner. In northern climates, attempting to keep sidewalks open and free of ice in residential areas would be a monumental effort on the part of the city. For this reason, individual homeowners should be responsible for clearing walks in front of their home. A reasonable time period for compliance may be within 24 hours of when the snowfall ended. In commercial areas, because of the large sidewalk areas and the prevalence of street furniture, the city should assume at least partial responsibility. Individual agencies must develop ordinances which are reasonable and enforceable for their particular areas.

A model ordinance for the removal of visual obstructions has been developed. This ordinance holds individual property owners responsible for removing any tree, plant, shrub or other moveable object which unreasonably obstructs the line of sight of any driver, bicyclist or pedestrian. After notification by the State highway commission or the local authority, the owner is given 10 days to remove the hazard or be fined [68]. The ordinance also details that public agencies are required to inspect highways, sidewalks, bicycle paths and the like on a periodic basis for visual obstructions, and to remove any found.

Maintaining Pedestrian Facilities Through Construction Zones

The poor maintenance of pedestrian facilities in and around construction zones represents a high degree of risk for a transportation agency. Though there are standards for rerouting pedestrian traffic around such areas, these guides are often not followed, leaving the pedestrian "... to fight through construction areas full of debris, mud and other obstructions" [69]. Chadda and Brisbin studied pedestrian movement through construction zones and recommended that further guidelines be developed at the Federal level and incorporated into the Manual of Uniform Traffic Control Devices (MUTCD) [69]. Such provisions, by their nature, would also apply to bicyclists in areas where their use on sidewalks is permitted.

Source: FHWA (1993). *FHWA Case Study No. 13: A Synthesis of Existing Bicyclist and Pedestrian Related Laws and Enforcement Programs*. [FHWA-PD-93-018].

APPENDIX C

Selected Pedestrian Safety Resources

TITLE: Pedestrian Safety Road Show

AUTHOR: Federal Highway Administration

NUMBER:

YEAR: 1996

FORMAT: Workshop

LENGTH: 4 Hours

FEE:

INTENDED Pedestrian Program Coordinators, Safety Specialists, Citizen

AUDIENCE: Activists, Traffic Engineers, Planners, Law Enforcement Officials

DESCRIPTION: The Pedestrian Safety Road Show is a four-hour highly interactive workshop designed to assist local communities to mobilize support for the pedestrian safety issue and begin the process of organizing and implementing a community pedestrian safety program. Topics covered include the nature of the pedestrian safety problem, other walkability issues, and strategies for organizing a community safety program. The Pedestrian Safety Road Show is not a training course. Rather it is a motivational seminar whose focus is on identifying local problems and securing a commitment to solve those problems. The Federal Highway Administration provides all workshop materials and an instructor. Local sponsors are responsible for inviting community participants and providing the facility for the workshop. Recommended participation is 25. Local Sponsors are provided a Local Sponsors Guide to assist in the planning of the Pedestrian Safety Road Show.

HOW TO GET: *Order from:*
The National Bicycle and Pedestrian Clearinghouse
1506 21st Street, NW
Suite 210
Washington, DC 20036
Phone: 800 760-NBPC, or 202 463-8405
Fax: 202 463-6625

TITLE: WALK!
AUTHOR: Federal Highway Administration and National Highway Traffic Safety Administration
NUMBER:
YEAR: 1996 (in development)
FORMAT: VHS Video
LENGTH: 12 minutes
FEE:

INTENDED

AUDIENCE: Community Groups, Local Decision-makers, Activists

DESCRIPTION: WALK! is a short motivational video designed to encourage individuals to become involved and join the pedestrian safety area. The video describes the benefit of walking to the individual and to the community and describes the problems that pedestrians face every day. Examples of effective solutions are provided and the viewer is encouraged to Take Action.

HOW TO GET: *Order from:*
The National Bicycle and Pedestrian Clearinghouse
1506 21st Street, NW
Suite 210
Washington, DC 20036
Phone: 800 760-NBPC, or 202 463-8405
Fax: 202 463-6625

TITLE: Stop! Look! Listen!: Walking in Traffic Safely
AUTHOR: National Association for the Education of Young Children
NUMBER:
YEAR:
FORMAT: Two age-matched, full-color children's books, teacher's guide with

family handouts, parent's brochure and poster

LENGTH:

FEE:

INTENDED

AUDIENCE: School Officials, Parents

DESCRIPTION: Created to help teachers teach young children to be safe pedestrians, the Walking in Traffic Safely materials contain activities to be incorporated into everyday routines.

HOW TO GET: *Order from:*
National Association of Education for Young Children
1509 16th Street, N.W.
Washington, D.C. 20036
202 232-8777 or 800 424-2460
FAX: 202 328-1846

TITLE: Stop! Look! Listen!: The Children Riding on Sidewalks Safely

AUTHOR: National Association for the Education of Young Children

NUMBER:

YEAR:

FORMAT: Full-color children's storybook, teacher's guide, parent's brochure and a poster

LENGTH:

FEE:

INTENDED

AUDIENCE: School Officials, Parents

DESCRIPTION: Created to provide teachers assistance in teaching young children to be safe pedestrians, the Children Riding on Sidewalks Safely materials are designed to teach skills to young riders of big-wheel type play vehicles.

HOW TO GET: *Order from:*
National Association of Education for Young Children
1509 16th Street, N.W.

Washington, D.C. 20036
202 232-8777 or 800 424-2460
FAX: 202 328-1846

TITLE: Stop! Look! Listen!: Walking in Traffic Safely
AUTHOR: National Safety Council
NUMBER:
YEAR:
FORMAT: Teacher materials (guides for grades K-6, three animated videos, model bus and poster for showing danger zones); Parent materials (video, brochure); Bus driver materials (video, brochure)
LENGTH: Teacher's guide: 3 « hours
FEE: \$55
INTENDED AUDIENCE: School Officials, Parents of elementary school children, Bus Drivers

DESCRIPTION: This package provides a curriculum for elementary school children who walk and ride a bus. Course lessons include: the danger zones, walking near and evacuating the bus, crossing the street, walking to the bus stop, arrival of the bus, riding the bus, and crossing to and from the bus.

HOW TO GET: *Order from:*
National Safety Council
800 621-7619
FAX 708 285-0797

TITLE: Stop & Look With Willy Whistle
AUTHOR: National Highway Traffic Safety Administration
NUMBER:
YEAR:

FORMAT: Video

LENGTH: 8:17

FEE:

INTENDED

AUDIENCE: Young Children

DESCRIPTION: In this video, Officer Miller and Willy Whistle, an animated whistle, teach a group of children how to cross the street. Lessons included are stopping at the curb, looking left, right, left, and crossing streets lined with parked cars.

HOW TO GET: *Order from:*
The National Bicycle and Pedestrian Clearinghouse
1506 21st Street, NW
Suite 210
Washington, DC 20036
Phone: 800 760-NBPC, or 202 463-8405
Fax: 202 463-6625

TITLE: Walking With Your Eyes

AUTHOR: National Highway Traffic Safety Administration

NUMBER:

YEAR:

FORMAT: Video

LENGTH: 14:15

FEE:

INTENDED

AUDIENCE: Older Children

DESCRIPTION: This video builds on information given in "Stop & Look With Willy Whistle." Here, Officer Miller teaches three children that green lights, walk signals, and crosswalks do not guarantee safety, how to deal with turning cars at intersections, the meaning of flashing "don't walk" signals, coping with visual screens, and crossing parking lots.

HOW TO GET: *Order from:*

The National Bicycle and Pedestrian Clearinghouse
1506 21st Street, NW
Suite 210
Washington, DC 20036
Phone: 800 760-NBPC, or 202 463-8405
Fax: 202 463-6625

TITLE: Mission Impossible: Operation Safe Walk

AUTHOR: New York City Department of Transportation and the National Highway Traffic Safety Administration

NUMBER:

YEAR:

FORMAT: Video

LENGTH: 16 minutes

FEE:

INTENDED

AUDIENCE: Adult Pedestrians, Older Adults

DESCRIPTION: Tim Thorpe's mission is to teach Mr. and Mrs. Johnson proper pedestrian safety. Lessons include stopping at the curb, looking left, right, left, making eye contact with drivers, the meaning of flashing "don't walk" signals, watching for turning vehicles, using traffic islands, crossing driveways, the danger of crossing between parked cars, wearing bright, conspicuous clothing during the day and retro reflective clothing at night, and problems with either prescription medicine or alcohol impairing judgment.

HOW TO GET: *Order from:*
The National Bicycle and Pedestrian Clearinghouse
1506 21st Street, NW
Suite 210
Washington, DC 20036
Phone: 800 760-NBPC, or 202 463-8405
Fax: 202 463-6625

TITLE: Walking Through The Years
AUTHOR: National Highway Traffic Safety Administration
NUMBER:
YEAR:
FORMAT: Video
LENGTH: 17 minutes
FEE:
INTENDED AUDIENCE: Older Adults

DESCRIPTION: Officer Miller and Willy Whistle, an animated whistle, teach pedestrian safety to older pedestrians. Lessons include wearing bright, conspicuous clothing, stopping at the curb and looking left, right, left, making eye contact with turning drivers, coping with cars turning right on red, the meaning of flashing "don't walk" signals, waiting for a fresh green light, and dealing with visual screens, backing cars, and crossing parking lots.

HOW TO GET: *Order from:*
The National Bicycle and Pedestrian Clearinghouse
1506 21st Street, NW
Suite 210
Washington, DC 20036
Phone: 800 760-NBPC, or 202 463-8405
Fax: 202 463-6625

TITLE: Walking Through The Years
AUTHOR: National Highway Traffic Safety Administration
NUMBER:
YEAR:
FORMAT: Video
LENGTH: 5 PSAs. 30 seconds each
FEE:

INTENDED

AUDIENCE: Older Adults

DESCRIPTION: A series of thirty-second public service announcements highlight lessons learned in the seventeen minute "Walking Through the Years" in which Officer Miller and Willy Whistle, an animated whistle, teach pedestrian safety to older pedestrians, including "Waiting For A Fresh Signal," "Conspicuity," "Parking Lots," "Turning Vehicles," and "Right Turn on Red."

HOW TO GET: *Order from:*
The National Bicycle and Pedestrian Clearinghouse
1506 21st Street, NW
Suite 210
Washington, DC 20036
Phone: 800 760-NBPC, or 202 463-8405
Fax: 202 463-6625

TITLE: Prevent Pedestrian Accidents: Preschool and Elementary School Children

AUTHOR: National Highway Traffic Safety Administration

NUMBER: DOT HS 807 606

YEAR: 1990

FORMAT: Flyer

LENGTH: two-sided

FEE:

INTENDED

AUDIENCE: Parents of elementary and preschool children

DESCRIPTION: One side of this flyer lists common myths children believe about being a pedestrian versus the facts. Pictures demonstrate dangerous situations. The flip side gives facts for parents of preschool children and advice for avoiding tragedy.

HOW TO GET: *Order from:*
The National Bicycle and Pedestrian Clearinghouse
1506 21st Street, NW
Suite 210

Washington, DC 20036
Phone: 800 760-NBPC, or 202 463-8405
Fax: 202 463-6625

TITLE: Keep 'em Safe: Little League Traffic Safety Brochure

AUTHOR: National Highway Traffic Safety Administration

NUMBER:

YEAR:

FORMAT: Brochure

LENGTH: 4 pages

FEE:

INTENDED

AUDIENCE: Parents and Children

DESCRIPTION: This colorful, short brochure puts forth guidelines for parents and safety tips for children. Suggestions are broken into three sections: automobile safety, pedestrian safety, and bicycle safety.

HOW TO GET: *Order from:*
The National Bicycle and Pedestrian Clearinghouse
1506 21st Street, NW
Suite 210
Washington, DC 20036
Phone: 800 760-NBPC, or 202 463-8405
Fax: 202 463-6625

Figure 1: Millen Downtown Study Area

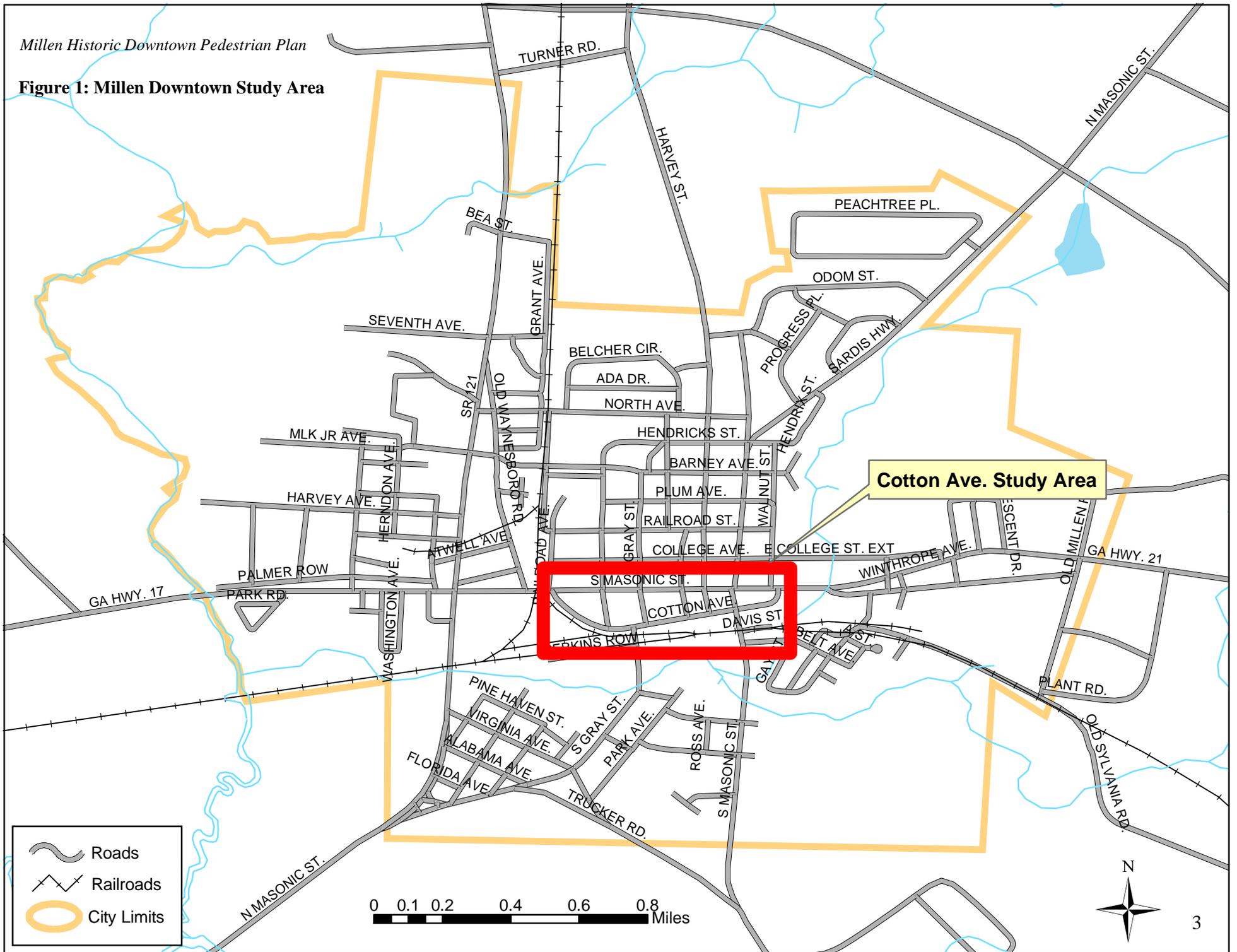


Figure 7: Millen Sidewalk Conditions

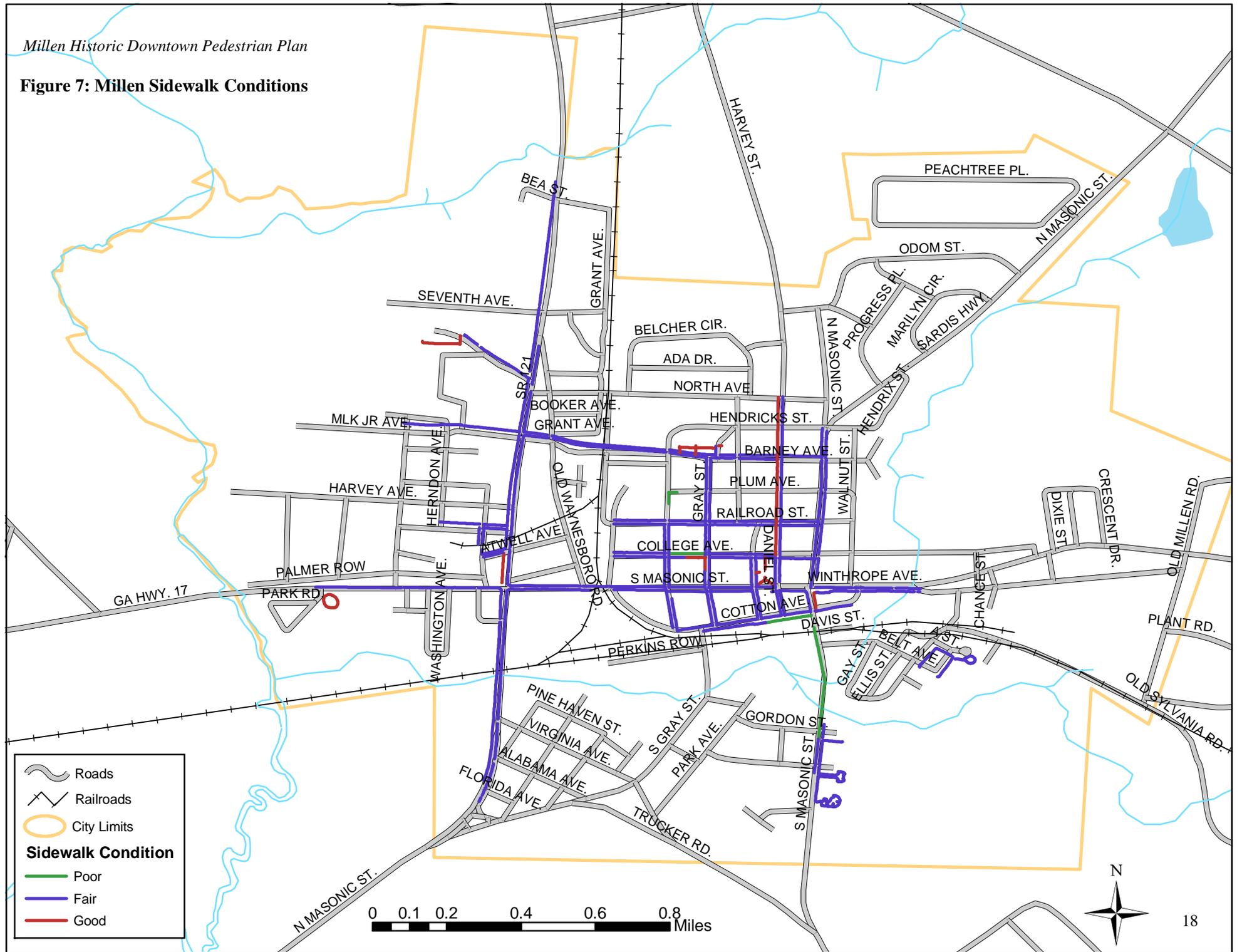


Figure 9: Current Land Use

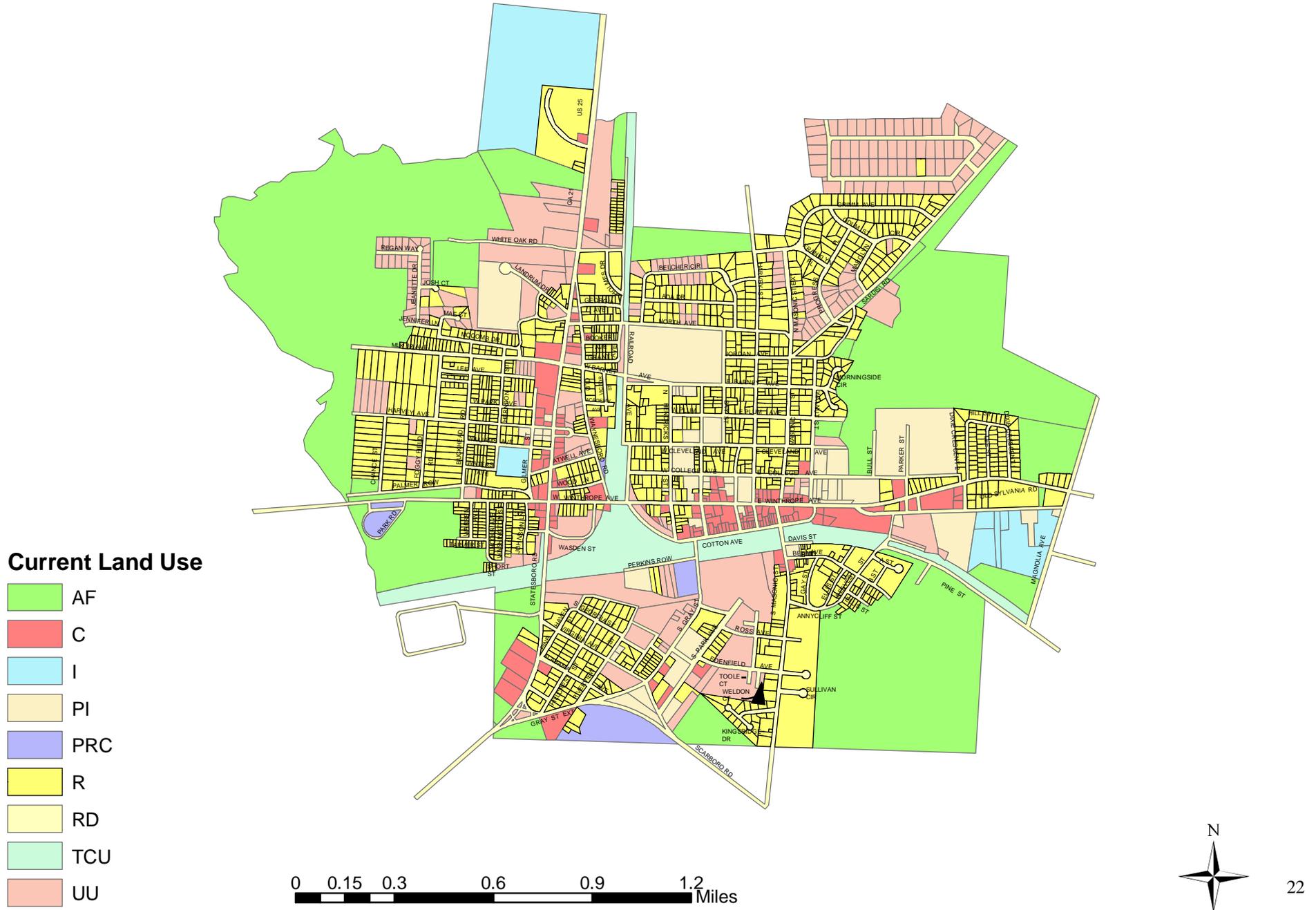


Figure 10: Distance to Cotton Avenue

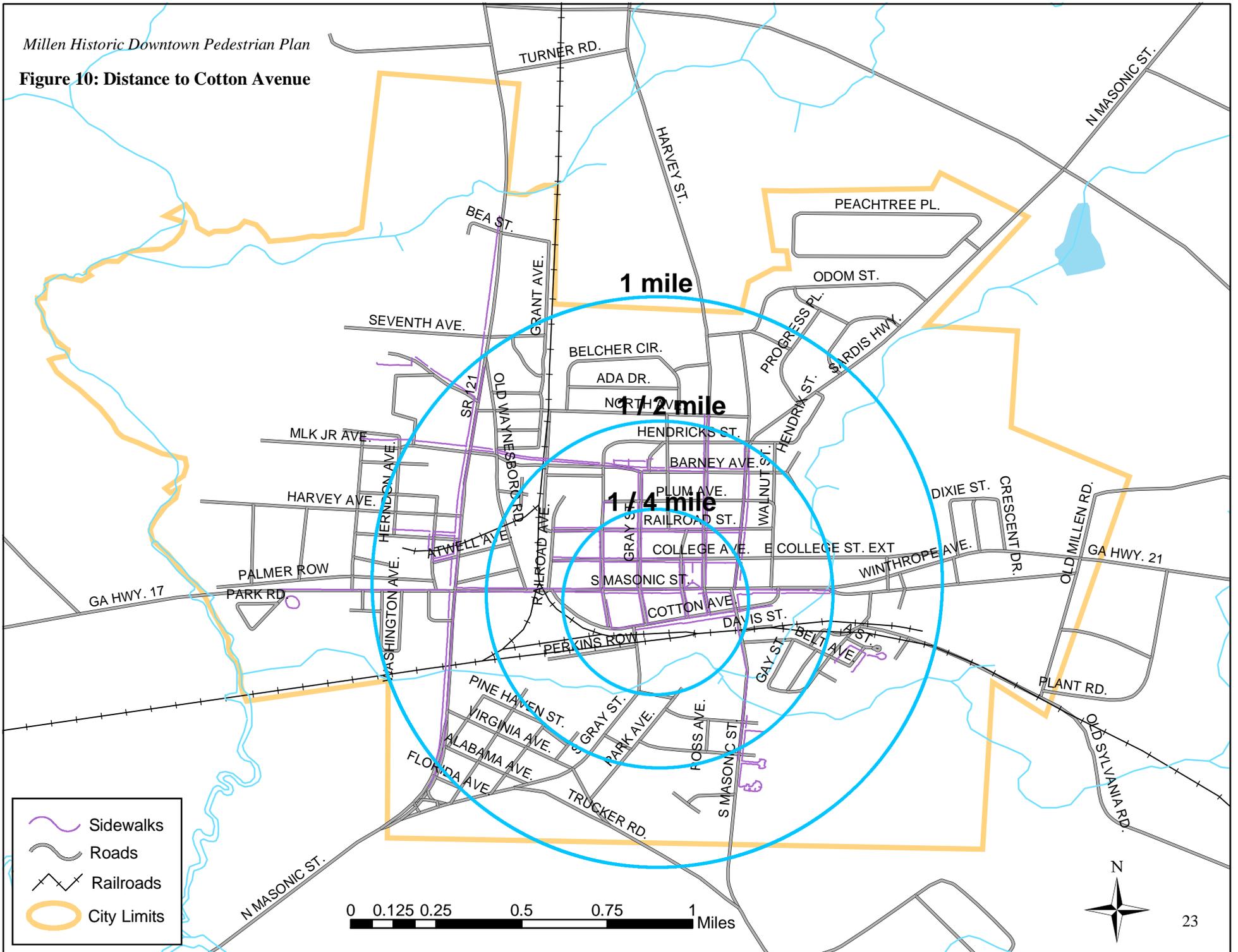


Figure 12: Potential Corridors to Downtown Area

