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Introduction

Madison's Pedestrian Transportation Plan is an important step in making Madison an even better place to walk. The Madison Common Council adopted this Pedestrian Transportation Plan in September 1997, making it an element of the City's Master Plan, and thereby supporting and encouraging pedestrian-friendly planning, design, construction and maintenance activities throughout the developed portions of the City.

The plan makes recommendations that will enhance the pedestrian environment and increase opportunities to choose walking as a viable mode of transportation. To accomplish this, the plan outlines **strategies**:

1. To preserve the walkability of places that are presently good areas to walk;
2. To better design and construct new development to be pedestrian-friendly from the start including attention to land use patterns, site design, walkways (sidewalks and pedestrian connectors), street crossings, street design, traffic calming measures, and transit connections;
3. To better integrate pedestrian improvements into street reconstruction projects; and
4. To develop and implement education, encouragement and enforcement programs to improve pedestrian safety and increase the levels of walking in Madison.

The plan is intended to be **used in several ways**:

1. To guide City of Madison agencies and commissions in developing and maintaining a pedestrian transportation system that provides pedestrian access and mobility throughout the developed portions of the city, and
2. To educate people interested in learning more about pedestrian transportation.

Madison's Pedestrian Vision

Madison will be a community where...

Walking is a major travel mode and where the City's development patterns and interconnected pedestrian circulation network 1) provide pedestrians convenient, safe and enjoyable access and mobility throughout the developed portions of the city and 2) link the City's neighborhoods and help to maintain them as sustainable and viable places to live.

Why Develop This Plan?

Everyone is a Pedestrian Every Day

In some capacity, each of us is a pedestrian every day - walking to work, school, the park, the grocery store, the car, the bus stop, or for recreation/exercise. Because walking is so pervasive, the quality of the pedestrian transportation network impacts each of us at some level every day. If pedestrian facilities are inadequate or nonexistent and if destinations where we carry out our daily activities are too spread out, we are unlikely to make those trips by walking.

The 1991 National Personal Transportation Study found that walking is the most commonly used transportation mode in the United States after the automobile. The study estimates that each year 18 billion trips nationally are made by walking (7.2% of all trips). In addition, the study found that the majority of human powered trips occur in central city areas with higher densities and compact land uses. With respect to walking in Madison, the 1990 census reported that 13% of all work trips are made by foot.

Beyond the number of trips currently made by walking, the 1991 national Harris Poll indicated that many more people would like to meet their transportation needs by walking than currently do. The study found that while 5% of respondents currently walk or bicycle, 13% would prefer to walk or bicycle. The survey indicated a central issue in realizing this latent demand is improving the quality of walking environments.

Madison's Walking Environment is Good... But It Could Be Even Better

Madison has a strong history of creating pedestrian friendly spaces, ranging from the original plats for the First Settlement and Vilas neighborhoods to explicit decisions to reclaim areas for pedestrians (such as the Capitol Concourse, Library Mall and State Street). Walkable neighborhoods developed over a century ago are still walkable today and have some of the highest levels of walking in the City according to the 1990 census. These neighborhoods therefore demonstrate the long-term impact that decisions we make about development patterns today will have on Madison's walkability in the future.

Despite many positive aspects of pedestrian travel in Madison, the City has expressed a desire to improve the pedestrian environment. The design of some locations limits pedestrian access, convenience and/or enjoyability. For example, some areas have few or no sidewalks; others are missing critical links. Further, in some areas sidewalks exist, but highly segregated land-use patterns mean long travel distances to reach desired destinations. In other areas, pedestrians find it difficult to cross wide, high-volume streets. As traffic volumes in Madison increase and as some streets are widened to increase capacity for vehicular traffic, walking in some areas has become increasingly unpleasant, inaccessible, and/or inconvenient.

Some transportation officials have expressed concern that some new roads, intersections, traffic signals, retail developments, etc. are going in with either no or limited pedestrian elements despite strong pedestrian stances on the part of the Transportation Commission as

well as ordinances requiring sidewalks and attention to other pedestrian facilities.

They cite East Washington Ave. across from the East Towne complex as an example of a situation where improvements to vehicular and pedestrian facilities could be better coordinated. Although new signals and intersection improvements for vehicular traffic have been installed recently, the pedestrian facilities were not improved at the same time. Marked crosswalks exist without sidewalks and vice versa; there are no sidewalks on either side of East Washington in much of this area -- even where there are bus stops; and there are no easy ways for hotel users to cross East Washington and access the restaurants on the southern side of the street. Similarly, children in many parts of the residential neighborhood to the north of East Washington have no convenient way to cross the street.

National and Regional Commitment to Pedestrian Planning

National and regional transportation policies stress the importance of pedestrian transportation. The Dane County Regional Transportation Plan (1988), the Americans with Disabilities Act (ADA) (1990), the Intermodal Surface Transportation Efficiency Act (ISTEA) (1991), and the National Bicycling and Walking Study (NBWS) (1994) all add support and strength to the mandate to plan for, design and build a pedestrian transportation system in Madison that provides for pedestrian access and mobility throughout the developed portions of the City.

The Dane County Regional Planning Commission is in the final stages of updating its 1988 Dane County Regional Transportation Plan. The new plan, like the 1988 plan, advocates for pedestrian transportation. The overall goal for the updated plan states that Dane County should “develop a balanced, integrated all-mode transportation system that is safe, economically efficient, environmentally sound; moves people and goods in an energy efficient manner; and is within the framework of growth and development policies of the region.”

ADA is intended to provide people with disabilities with an equal opportunity for access to jobs, transportation, public facilities and services. The Act, currently an interim final rule for the transportation section, stipulates many design standards related to parking access aisles, curb ramps, crosswalks, walkways, ramps and lifts that aim to enhance pedestrian access and mobility for all people.

ISTEA requires that Metropolitan Planning Organizations (MPO's) (In Madison's case, the Dane County Regional Planning Commission) include bicycle and pedestrian components in their transportation plans. The DCRPC transportation plan has this component and meets this requirement. ISTEA also offers greater flexibility to States and individual localities in developing plans and programs for meeting their transportation needs. For the first time, federal highway funds are available for bicycle and pedestrian projects.

NBWS marks an increased federal commitment to walking. The study outlines costs and benefits of bicycling and walking, reviews successful programs around the world, and in light of these findings develops federal, state and local action plans to encourage bicycling and walking. The study sets as national goals the doubling of trips made by walking and bicycling, and at the same time reducing by 10 percent the number of injuries and fatalities to pedestrians and bicyclists.

Local Commitment to Pedestrian Planning

Madison's Master Plan

The Objectives and Policies Statement for the City of Madison clearly advocates a walkable community: “minimize the need to use private automobiles...[and] provide safe, convenient and comfortable pedestrian circulation within the developed portions of the City.”

City Staff and Commissions

The City of Madison's concern for pedestrians is not new. The City's bicycle/pedestrian coordinator position grew out of the City's 1982 bicycle and pedestrian safety plan. In addition to a dedicated staff person, the City has several committees and commissions that deal with pedestrian transportation and safety issues, including the Transportation Commission and its Pedestrian-Bicycle Subcommittee, the Plan Commission and the Citizens Advisory Committee for People with Disabilities. The Transportation and Plan Commissions recently formed a joint subcommittee to discuss issues of mutual concern, including how to provide for pedestrian travel and safety through pedestrian friendly planning and development. In April 1997 this joint subcommittee, the Transportation Commission and the Pedestrian Bicycle Subcommittee were restructured into three new commissions: the Long Range Transportation Planning Commission, the Parking and Transit Commission, and the Pedestrian-Bicycle-Motor Vehicle Commission.

Recently, some concerns have been raised about how these commissions go about implementing City policies related to pedestrian transportation. This plan aims to clarify and adjust the decision-making and implementation process for sidewalks, crosswalks, etc. regarding the oversight and staffing roles of transportation, public works, and planning to alleviate concerns that have been expressed about lacking coordination between road and signal improvements and associated pedestrian improvements.

Citizen Interest in Pedestrian Planning

In Madison, 63.1% of residents feel traffic congestion is either a 'great problem' or 'somewhat of a problem.'

As a result of increasing traffic volumes, more and more streets in the City are reaching their motor vehicular capacity. Congestion is becoming an issue for an increasing percentage of Madison commuters. A 1996 Citizen Satisfaction Survey for the City of Madison (Chamberlain Research Consultants, 1996) reports that more than one in seven people (14.8%) feel traffic congestion is a 'great problem' in Madison. In addition, 48.3% believe traffic congestion in Madison is 'somewhat of a problem', 27.8% feel it is a 'minor problem' and only 8.6% say it is 'not a problem at all'. In response to this situation, citizens attending the

Discovering Common Ground conference in 1995, sponsored by Isthmus 2020, identified balancing Madison's transportation system as a top priority for the City.

In addition, a pedestrian advocacy group, Parents Encouraging Driving Safely (PEDS), was formed in Madison several years ago in response to growing citizen concern revolving around pedestrian safety issues. Other activists including the Bicycle Transportation Alliance of Dane County, Citizens for a Better Environment and the New Transportation Alliance stress the

importance of promoting walking, bicycling and transit in order to maintain and enhance Madison's livability.

Plan Organization

Broadly, the Pedestrian Transportation Plan for the City of Madison describes an approach for making Madison an even better place to walk. Chapter 2 provides background information about the importance and viability of walking including who walks, how much, how far, where, and walking benefits. Chapter 3 discusses how different physical environments impact pedestrians, focusing first on situations pedestrians are likely to encounter and then on how specific facilities impact pedestrians. Based on this background, Chapter 4 outlines a vision, goals, and objectives that suggest the ideal pedestrian environment that Madison would like to strive to create. Next, Chapter 5 reviews some location, design, construction, and maintenance issues related to the various factors impacting the pedestrian environment, discusses current policies and practices in Madison for each factor, and develops recommendations for making Madison an even better place to walk based on these issues, policies and practices. Finally, Chapter 6 suggests some implementation strategies and directions for future pedestrian transportation planning in Madison.

CHAPTERS 1, 2 AND 3

Background:

**Why Have a Plan
Importance and Viability of Walking
How Designs and Facilities Impact
Pedestrians**

CHAPTER 4

***Making Madison an Even Better Place to
Walk:***

CHAPTER 5

***Walking in Madison:
Issues, Current Conditions and
Recommended Actions***

CHAPTER 6

Implementation Priorities and Future

APPENDICES

- 1. Citizen Guide for Making Madison
an Even Better Place to Walk***
- 2. Pedestrian Plans Reviewed***
- 3. Definitions and Abbreviations***

Plan Development Process

The planning process to develop Madison's Pedestrian Transportation Plan began in May, 1996 under guidance from Madison's Pedestrian-Bicycle Subcommittee (and after commission restructuring in April 1997, the Pedestrian-Bicycle-Motor Vehicle Commission), city agency representatives, and public input. Significant emphasis was placed on a participatory process involving on-going communication between representatives from professional, civic, public and private sectors in order to develop community consensus for strategies to make Madison an even better place to walk. The process incorporated five phases: 1) identify factors influencing the pedestrian environment; 2) describe design, construction and maintenance issues related to each factor; 3) outline current policies and practices related to each factor; 4) develop recommendations for making Madison an even better place to walk based on an assessment of the issues, policies and practices for each factor; and 5) suggest priorities for implementing the recommendations. Following City staff, commission and citizen review, the plan will be adopted by Madison's Common Council as a component of the City's Master Plan.

Review Pedestrian Plans from Other Areas

We collected and reviewed more than 15 plans containing a pedestrian element (see Appendix 2). To determine which plans to acquire and review, we consulted with the Pedestrian Federation of America and the National Bicycle and Pedestrian Clearinghouse. Some of the plans we reviewed were local plans and others were state plans. In addition, some were specifically pedestrian plans, but many were combined bicycle and pedestrian plans.

Review of these plans confirmed that the concept of planning for pedestrians is new enough that there is no standard approach for a pedestrian plan and that we weren't going to find one plan that we wanted to adopt as a model for developing Madison's Pedestrian Transportation Plan. At the very broadest level, all the plans included some sort of goals and objectives and some sort of discussion of current conditions. However, even at this broad level, different plans implemented these two ideas quite differently. Therefore, it quickly became clear that Madison's plan would be yet another unique interpretation.

Our approach to developing the elements of Madison's Pedestrian Transportation Plan has been to adopt the best of what each plan we reviewed had to offer within the context of what is relevant for Madison.

City of Madison Agency and Commission Involvement

On-going 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. This process involved key person interviews, progress updates, and a series of feedback and planning sessions.

In addition to City staff, the Pedestrian Bicycle Subcommittee (restructured into the Pedestrian-Bicycle-Motor Vehicle Commission in April 1997) has been closely involved in

the plan's development. The group provided several opportunities for public input through their monthly meetings and they regularly provided comments and suggestions on draft elements of the plan.

Public Participation

Public participation in the planning process was achieved through a series of meetings in conjunction with the Pedestrian-Bicycle Subcommittee as well as the Neighborhoods '96 conference sponsored by the Mayor's office in October, 1996. These meetings were intended to provide an opportunity for the public to become familiar with the plan as it was being prepared and to allow individuals and groups to affect the decision-making process through their comments.

Activity	Time line	Description
Kick-off Meetings	Sept, Oct '96	Early public involvement established a working partnership, helped shape the values of the planning effort, and provided direction for the work approach. The meetings provided an opportunity for citizens to provide valuable input on issues that the plan should address as well as identify areas that do and do not work well for pedestrians in their neighborhoods.
Public Review Hearing for Draft Plan	May '97	A public hearing session with the Transportation Commission (since restructured as the Pedestrian-Bicycle-Motor Vehicle Commission) was held to provide an opportunity for public comment on the draft pedestrian transportation plan. Record was kept of comments and requests for changes to the plan. The meeting had time for questions about the plan, as well as official comments.
Presentation of Final Draft Plan	July '97	A major meeting was held through the Pedestrian-Bicycle-Motor Vehicle Commission to present the final draft of the pedestrian transportation plan.
Presentation of Final Plan	August '97	A meeting was held through the Pedestrian-Bicycle-Motor Vehicle Commission to present the final pedestrian transportation plan.

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The Importance and Viability of Pedestrian Transportation

As Madison's population and developed land area grow, there are more people traveling between more destinations around the city. Decisions the community makes today about how these destinations are spatially arranged and about the transportation facilities we design, construct and maintain to provide residents access to and mobility between these destinations will have significant long-term impacts on community character and livability.

Madison has made a conscious choice in its Comprehensive Master Plan that it desires community character and livability standards that are defined by its residents' ability to choose to walk for transportation. If this goal is to be achieved, it is important that the pedestrian transportation context is considered as an integral component of all transportation planning. The following two chapters outline and draw attention to this context by first documenting the importance and viability of walking in this chapter and then exploring how various situations and transportation facilities impact pedestrians in the next chapter. The context for thinking about pedestrian transportation outlined in these two chapters provides a framework for interpreting the recommendations outlined in the latter parts of this plan.

Who are Pedestrians?

Each one of us is a pedestrian every day. Some of us make entire trips by foot, some walk to and from transit stops, and others walk to and from their automobiles. Clearly, although people's walking habits vary widely, everyone is a pedestrian in some capacity every day. Therefore, how easy or difficult we make it to walk impacts each of us daily.

Pedestrians are as diverse as the general population: young and old, world class athletes and couch potatoes, wealthy and poor, famous and anonymous. Some of us experience varying degrees of either permanent or temporary physical and/or cognitive disabilities. Also, some of us push and/or pull strollers, wagons, walkers, grocery carts, or suitcases. Because we are so diverse, we have differing needs. However, these needs are not nearly as divergent as some people suggest. For example, some people consider curb cuts to be strictly an amenity

for people in wheelchairs. However, joggers, in-line skaters, skateboarders, bicyclists and all the people pushing or pulling wheeled conveyances also benefit where curb cuts are provided.

As more Baby Boomers reach 65 years of age, the number of older people is expected to climb sharply to about 66 million by 2030.¹ Many elderly people walk to meet their transportation needs. Therefore, as the number of elderly rises, the demand for accessible, convenient, safe and enjoyable walking environments will also rise.

The number of people walking as their primary transportation to work demonstrates the viability of walking. According to the 1990 census, 13% of all work trips in Madison are made by walking. In some areas of the Isthmus, as many as 65% of people walk to work.²

To Where do Pedestrians Want to Walk?

“Walking is done every day, everywhere. People walk at home, at work, at play. People tend to walk where it is easier, faster or cheaper than to drive. In high-density districts, people tend to walk instead of ride where car travel is hindered by congestion and lack of parking. They also tend to walk in older medium-density neighborhoods where there are sidewalks, destinations and continuous changes of view. Walkers are attracted to mixed-use urban districts where there is activity involving people - people watching, socializing, being seen, and just being around other people... People are less willing to walk in single-use, industrial areas, single family suburbs, etc., where destinations are distant and the unfolding view is monotonous.”

-from Untermann (1984), *Accommodating the Pedestrian*

Although some walking trips may focus on ‘a walk around the block’ that has no specific end destination, most pedestrian trips, like most trips in general, are directed at definite destinations. The 1990 National Personal Transportation Study indicated that 66 percent of walking trips involve earning a living, personal or family business, or school/church/civic purposes. Social and recreational trips account for 34 percent of walking trips, but the number of recreational walks around the block is a subset of this figure.

Pedestrians want and need to access the same destinations that people using other travel modes do. Like everyone else, they want to go to work, school, shopping, a friend’s house, the doctor, the movie theater, the park, or government offices. Therefore, they can be found walking in residential, commercial, institutional and industrial areas alike. And just like people using other travel modes, pedestrians want to be able to reach their destination conveniently, safely and enjoyably.

How Far do Pedestrians Travel?

Just as trips made by other modes vary in length, so do walking trips. Some walking trips

¹American Association of Retired Persons and Administration on Aging, U.S. Dept. Of Health and Human Services, *A Profile of Older Americans: 1992*, Brochure PF3049(1292), Washington, D.C., 1992.

²1990 United States Census

may be as short as walking to a next door neighbor's house. At the other extreme, some dedicated pedestrians regularly make walking trips that are three or more miles long. The 1990 National Personal Transportation Study revealed that the average walking trip is 0.6 miles long and that this average varies slightly depending on trip purpose and location. In general, people make longer trips to get to work than they do for shopping or personal trips. However, in the suburbs, the study found walking trips average 0.8 miles for all walking trips independent of purpose.

Benefits of Making Walking Accessible, Convenient, Safe and Enjoyable

Expanded Transportation and Activity Choices

A prime asset of city life is choice -- choices in the places we visit and choices in how we travel to those places. Therefore, the degree to which a city affords its citizens with these types of choices can be correlated with the perceived livability of that city. Evaluating how well a community provides choices involves considering the collective list of destinations available, the spatial arrangement of these destinations and the transportation facilities provided to facilitate travel between these destinations. Where destinations are within walking distance supported by adequate pedestrian facilities, walking is an attractive option. When destinations are highly segregated and spread out and/or pedestrian or transit access to a destination is not provided, the number of people who choose to reach these destinations by walking will be limited.

Where choices do not exist, many people argue quality of life is lowered. Being able to make transportation choices means that for any particular trip a person makes, s/he would have many viable transportation options from which to choose: bus, bicycle, car or walking. Being able to choose from all these options provides people with the flexibility to adapt their transportation behaviors depending on the goals of their trip, weather and time and money available.

We can each map out our own 'private city' within the context of the larger total city that encompasses the places each of us chooses to go. A benefit of making walking easier, therefore, is that as walking is easier, people's choices about the destinations they choose to visit and how they choose to travel to those destinations increases. These choices at least in part are influenced by the degree to which destinations are arranged spatially in more mixed-use rather than segregated land use patterns and how well the transportation system provides for pedestrian and transit access.

Energy Efficiency and Decreased Demand for Increased Roadway

Capacity

As walking is made easier, some automobile trips may be replaced by walking trips. Walking is an extremely energy efficient means of transportation. Each year, Americans walk an estimated 5 to 16 billion miles that they would otherwise drive, saving about 300 million to 910 million gallons of gasoline.³ Increasing pedestrian travel therefore has a significant impact on our need to import petroleum fuels. In addition to petroleum savings, increased levels of walking will reduce the demand for expanded roadway capacity, reduce road wear and tear, lessen traffic congestion, decrease how much valuable land is lost to roadways, and limit noise and air pollution.

Strengthened Community

Walking helps to strengthen the sense of community. Walking allows people to interact with other people, to browse storefronts, and observe wildlife. Therefore, people who walk regularly are likely to know more of their neighbors and have a more detailed understanding of their community. Research has shown that people who live in neighborhoods where people walk less and drive more have smaller networks of acquaintances.⁴ As a result, these people likely have a better sense of who belongs and who doesn't, thereby increasing community safety. Also, these people are likely to be more involved in community issues and have an increased pride in making the neighborhood and community pleasant places to live. Nearly 60% of Madison residents feel it is either important or very important for members of their household to be able to walk to stores and services in their neighborhood.⁵

Improved Pedestrian Safety

Sidewalks impact pedestrian safety in residential areas more than any other physical feature in the roadway environment.⁶ Streets without sidewalks have 2.6 times more pedestrian crashes than expected on the basis of exposure. Streets with sidewalks on one side have 1.2 times more crashes than expected and streets with sidewalks on both sides have 1.2 time fewer crashes than expected.⁷ In Madison, less than one percent of all pedestrian crashes

³Komanoff Energy Associates, *The Environmental Benefits of Bicycling and Walking*. FHWA National Bicycling and Walking Study. Case Study No. 15, USDOT, FHWA-PD-93-015, January 1993.

⁴Appleyard, Donald and Lintell, Mark. "The Environmental Quality of City Streets: The Residents' Viewpoint." In de Boer, Enne. *Transport Sociology: Social Aspects of Transport Planning*. NY: Pergamon Press. 1986. P. 93-120.

⁵Chamberlin Research Consultants. *Citizen Satisfaction Survey for the City of Madison*. 1996.

⁶ITE, *Design and Safety of Pedestrian Facilities*. December 1994.

⁷Knoblauch, R. L., Tustin, B. H., Smith, S. A., Pietrucha, M. T., *Investigation of Exposure Based Pedestrian Areas: Crosswalks, Sidewalks, Local Streets and Major Arterials*, FHWA, Report No. FHWA/RD-

between 1991 and 1995 involved a pedestrian walking along a street without sidewalks. However, pedestrian volume data for Madison are unavailable, so the crash rates cannot be evaluated based on exposure.

There is a dramatic correlation between vehicle speed and pedestrian fatalities in crashes. In crashes where the vehicle is traveling at 20 mph, only 5% of pedestrians are killed. At 30 mph, 45% of pedestrians are killed. And at 40 mph, 85% of pedestrians are killed.⁸

Likelihood of Pedestrian Fatality in Crash	
Motorist Speed (mph)	Chance of Pedestrian Fatality
20	5%
30	45%
40	85%

The leading pedestrian crash types indicate locations requiring more complicated pedestrian and vehicle movements are likely to generate more pedestrian crashes. Nationally, 6,000 pedestrians are killed and 110,000 are injured each year.⁹ In Wisconsin, approximately 50 pedestrians are killed and another 2,000 are injured each year. In Madison, police crash reports indicate approximately 5 pedestrians are killed and 110 are injured each year. Another safety consideration for pedestrians is that pedestrian crashes are the leading cause of death for children through nine years of age.¹⁰ By making walking easier, the number and severity of these crashes can be reduced.

Improved Transit Access

Transit users benefit from making it easier to walk because where it is easier to walk, it is also easier to access transit. An effective public transportation system extends the mobility of pedestrians, making it reasonable for them to choose to walk to meet more of their travel needs.

Health Benefits

An improved walking environment will also provide many people an opportunity to improve

88/038, September 1988.

⁸*Killing Speed and Saving Lives*, UK Department of Transportation, Marsham Street, London, SW1 England.

⁹Pedestrian Federation of America. *Walk Tall: A Citizen's Guide to Walkable Communities*. Rodale Press. 1995.

¹⁰National Center for Health Statistics.

their health. Moderate levels of walking can reduce the risk of heart disease, osteoporosis, hypertension, diabetes, cancer and arthritis, while encouraging weight loss and improving mental health.^{11,12} The 1996 National Health and Nutrition Examination Survey indicates that more than half of the US population weighs more than it should.¹³ In addition, in the US Surgeon General's recently released first ever report on physical activity, he reports that more than 60 percent of adults do not achieve the recommended amount of regular physical activity and that nearly one-fourth of all adults are not active at all.¹⁴

Economic Benefits

Walking is much cheaper than other transportation modes, especially than owning and operating an automobile. According to American Public Transit Association figures, many households spend more money each month to own and operate a car than they do on food.¹⁵ The costs involve not only purchasing the automobile and fuel, but also vehicle registration, licensing, insurance, taxes, maintenance, repairs, tires and parking. The American Automobile Association estimated in 1993 that a person who drives 10,000 miles/year spends approximately \$4,700 each year to cover these expenses and that when a person drives 20,000 miles/year, this figure jumps to nearly \$7,000.¹⁶

¹¹Burke, Edmund R. Benefits of Bicycling and Walking to Health. National Bicycling and Walking Study FHWA Case Study No. 14. FHWA-PD-93-025. June 1992.

¹²Minkin, Tracey, "Body of Evidence," *The Walking Magazine*, June 1993, pp. 29-30, 1992. Also Burke, Edmond, *Benefits of Bicycling and Walking to Health*, FHWA National Bicycling and Walking Study, Case Study No. 14. USDOT, FHWA-PD-93-025, June 1992.

¹³Haney, Daniel. "Half of us are overweight." In *The Capital Times*, October 16, 1996.

¹⁴Quirk, Barbara. "Physical Activity is Rx for Good Health." In *The Capital Times*, October 15, 1996.

¹⁵Chesapeake Bay Foundation, *The Many Costs of Driving*, Transportation Resource Book, Vol. 1, No. 3, June 1993. Cited in Washington State Energy Office, *Municipal Strategies to Increase Pedestrian Travel*, 1994.

¹⁶American Automobile Association, *Your Driving Costs*, Brochure Stock 2717. Heathrow, Florida, 1993. Cited in Washington State Energy Office, *Municipal Strategies to Increase Pedestrian Travel*, 1994.