A3B04: Committee on Pedestrians
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Pedestrian Transportation
A Look Forward

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For some, walking is the primary mode of transportation. Everyone walks or uses a wheelchair at some time, but few of us realize how often walking is part of our trip. We view ourselves as drivers, passengers, and even cyclists, but we overlook or take for granted the walking part of the journey. By not attending to how often and where we walk, we also do not attend to the need to make walking a safer and more positive experience. Although 25 percent of all trips are less than 1 mile, 75 percent of these short trips are made by automobile (*1*). Reducing dependence on the automobile for trips that could be made by walking would dramatically benefit society. Physical fitness would improve, vehicle miles of travel and vehicle emissions would decline, less money would be spent for automobile travel and, most important, social interaction would increase.

As motorists, we lack the patience to allow a slow-moving pedestrian to complete a crossing. After we park, we find ourselves at odds with another driver when we try to safely walk across the street. What causes this lack of awareness and these contradictory perspectives? Is it human nature? A sedentary lifestyle? Love of the automobile? Suburbanization? Safety risks? Government policy? Unappealing streetscape designs? Pedestrian transportation planners are grappling with these issues as the new millennium begins.

A CHANGING SOCIETY

At the beginning of the 20th century, most Americans lived in cities and walked long distances. At its end, however, the reasons people walked were fundamentally different. Today, most people have more choices, including personal automobile, taxi, transit, or bicycle. In some cities, walking is a cost-effective, pleasant mode of commuting, shopping, visiting friends, and enjoying recreation, but in many places it is not a viable option. In less compact environments, most of those who walk do so for fitness or lack of an alternative.

Walking has been and is likely to remain the most common form of exercise among adults (approximately 44 percent) in the United States (*2*). Fitness walking remains popular for a number of reasons: it is easy, requires no special skill or equipment, and can be done by most of the population with little risk of injury.

However, most people travel to get to a destination, not just to exercise, and these trips are getting longer, so that walking is often not feasible. This is exacerbated by the lack of safe and comfortable facilities for pedestrians, which has several causes. Among them are

- Design standards that do not specifically require sidewalks or walkways,
- Lack of funds to construct sidewalks,
- Indifference to or ignorance of the potential of walking, and
- The perception that too few people are interested in walking to make it worthwhile to invest in sidewalk facilities.

In actuality, people walk along and across streets that lack adequate pedestrian facilities—that is, pedestrians are at risk for vehicle accidents. Fortunately, in the 1990s planners and engineers recognized this situation and became more sensitive to street design and traffic management. A technique known as raffic calming has begun to take root in transportation engineering practice as a method to tailor streets to multimodal use. Traffic calming aims to slow traffic to a safer speed, minimize risk both to pedestrians and motorists, and improve the quality of life on these "calmed" streets.

This positive development is just one of several identified by the Committee on Pedestrians. Developments in design guidance, safety, land use, and fitness are discussed in the following sections.

TRANSPORTATION POLICY IN SUPPORT OF WALKING

For most of the second half of the 20th century, transportation construction primarily served the motor vehicle network. Road design typically included travel lanes, shoulders, and perhaps parking spaces. Pedestrian facilities were often excluded, minimally provided, or eliminated. Accommodation for persons with disabilities was rarely considered.

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) provided funding for pedestrian and bicycle accommodation; the provisions of ISTEA were later expanded by the passage of the Transportation Equity Act for the 21st Century. Recent guidance from the Federal Highway Administrator illustrates the influence of these acts: "We expect every transportation agency to make accommodation for walking and bicycling a routine part of their planning, design, construction, operations, and maintenance activities" (*3*). This guidance is intended to be followed at the state and local level as well as the federal level.

ISTEA called for a national bicycling and walking study, which was published by the U.S. Department of Transportation in 1994. These national mandates and funding have fueled remarkable improvements for pedestrians. All states now have designated bicycle and pedestrian coordinators, and most have implemented state plans for these modes. Consultants and engineers are learning how to design facilities for pedestrians and bicyclists, and funds are now available at all levels of government to construct new facilities.

The passage of the Americans with Disabilities Act in 1990 led to dramatic changes in the physical environment for pedestrians, wheelchair users, and others with limited mobility. Barriers, although still numerous, are being eliminated as facilities are reconstructed or rebuilt. Improvements in technology are also benefiting pedestrians as pedestrian signals are upgraded with equipment that is easier to see, hear, and reach.

The transportation profession has also responded. The Institute of Transportation Engineers has pioneered traffic calming publications and conferences. The American Association of State Highway and Transportation Officials is working on expanding and updating pedestrian design guidance to support its widely used Green Book, and state and local engineering departments are adopting their own standards.

From the vice president of the United States to the average citizen, people are focusing on reshaping communities. Advocacy groups are pressing for smart growth policies, safe routes to school, and more and better walkways. Organizations such as the Partnership for a Walkable America have developed “walkability” checklists and sponsored national Walk Our Children to School days. Local advocacy groups across the country have created a national coalition, America WALKs, to effect improvements at local levels. Paramount among the concerns of these organizations is the call for safe streets and protection from motor vehicle crashes, which unfortunately is a long way from realization.

NEED FOR IMPROVED PEDESTRIAN SAFETY

As a result of continuing research into the causes of accidents involving pedestrians and ways to avoid them, more is now known about this problem than at any previous time. Promising countermeasures are available. Many of these countermeasures have been tested and evaluated, so their ability to prevent crashes is known and their cost-effectiveness, while possibly not quantified, is at least acknowledged to be positive. With all of this knowledge, it is surprising that there are relatively few major pedestrian safety initiatives under way at the local level. Understanding the reason for the lack of safety initiatives and changing the landscape in the new millennium form an important focus for pedestrian safety professionals.

One answer may lie in understanding some of the reasons for the current lack of emphasis on pedestrian safety. The traditional notion that pedestrian safety is primarily a problem confronting children is still widely held in official circles. The extensive focus of government agencies on safety belts and drinking drivers has dwarfed pedestrian safety programs. Lack of public understanding of the causes of accidents involving pedestrians has perpetuated the notion that it is typically an aberrant action of the pedestrian that precipitates most of the collisions. Insufficient training of police and highway safety officials further compounds the problem by reinforcing this misperception.

The research community itself is not without fault. Compartmentalized efforts do not cross modes or take into account realities of real-world implementation. Furthermore, while research knowledge increases, funding is insufficient to transfer that knowledge to the operating level, at which it can truly be used to deal with the problem. Instead of addressing pedestrian safety as a failure of the total highway system, including roadway design and the behavior of drivers and pedestrians, the focus has tended be on only one subsystem at a time.

Researchers are acknowledging these shortcomings, and multidisciplinary countermeasures are emerging. As the new millennium begins, the challenge to improve pedestrian safety is twofold. First, awareness of the problem, both official and public, must increase. The message simply must get through to the public safety, public health, and transportation communities that pedestrian crashes are the second largest highway safety problem. Second, the research and operational communities must work together to define and fill the gaps in our understanding and turn existing knowledge into countermeasure programs. If we focus on achieving these two objectives, pedestrian safety will finally begin to be elevated to its proper importance, which in turn will lead to long-term safety gains.

LAND USE CHANGES

Even as we strive to make our streets safer for walking, land development patterns make it increasingly difficult to travel on foot. A national debate has recently arisen about ways to

address the ever-increasing suburbanization of cities. Sustainability and smart growth are offered as solutions that will change the course of land development. Curbing the use of and dependence on the automobile is a principal tenet of smart growth. What are the alternatives? Can we create development clusters that are "walkable" and transit friendly? Can we realistically influence future land development patterns? Although the answers are not certain, there are clear benefits to creating walkable environments.

A 1998 study of four of the world's major cities—London, New York, Paris, and Tokyo—by the London Research Centre (*4*) revealed that land use configuration is a principal determinant of travel demand and mode. In a comparison of metropolitan New York and Tokyo, the effect and use patterns of walking are significant. The zone from which New Yorkers commute is relatively dense (1,200 persons per square kilometer) and is similar to the outermost zone of metropolitan Tokyo (1,750 persons per square kilometer). However, the number of motorized trips per person per day in Tokyo's outer suburbs is less than one third of motorized trips in New York's outer suburbs. Furthermore, Tokyo experiences more than three times as many walking and cycling trips as New York in these same zones. In New York, land uses such as housing, retail, and commercial are separated, whereas in Tokyo, land uses are clustered.

The importance of clustered development can also be seen in the trips within the outer zones of New York and Paris, which have relatively similar overall population densities and number of transit stations. For the trips that are not to the city center, Paris has achieved 10 percent lower auto use and 10 times more transit use by designing new towns and maintaining villages in which residents can walk to shops and transit. The urban clusters that make a car unnecessary at either end of the trip also make light rail or bus links economically viable.

In urban areas, too, land use development matters. Because housing is clustered around transit and high employment is centered in the city, residents of New York's urban neighborhoods own fewer cars, do not use them as often, and rely on transit more than their counterparts in London and Paris. Walkable cities are the key to intercity rail service as well. Without multiple destinations that are easily accessible from rail stations, there is no incentive to take a train. By the same token, building rail lines that penetrate the hinterland without creating clusters of development can have the same effect as highways in enticing people out of cities into places where automobile use proliferates.

In the United States, as civic leaders call for a response to sprawl, land development policies are being overhauled to encourage downtown redevelopment, revitalization of main streets, location of public facilities to which people can walk, and proper integration of complementary land uses.

WALKING FOR TRANSPORTATION AND FITNESS

Walking is a natural act of humans. However, through new technologies and changes in the design of communities, humans have all but engineered this basic form of physical activity out of their lives. Nearly 29 percent of American adults are sedentary, and 80 percent of adults do not get the recommended 30 minutes of physical activity for 5 or more days a week. These steady changes in behavior can have considerable consequences for society. Recent evidence shows that the risks to health and well-being of a sedentary lifestyle are much greater than generally recognized; being sedentary is a primary contributing factor in at least 200,000 deaths annually (*5*).

For these sedentary people, even moderate activity is likely to provide substantial improvements in quality of life. The evidence from many studies on walking demonstrate

that regular walking provides a health benefit for people of all ages, genders, and races. Even moderate walking lowers blood pressure, improves lipid profile, reduces body fat, and enhances mental well-being. Therefore, walking for transportation purposes is an important area of interest to the public health community. Walking affords an excellent opportunity to incorporate some form of regular activity into daily life. Because walking could easily replace many short vehicle trips, a small shift in the percentage of trips from driving to walking could result in significant public health (and environmental) benefits. Therefore, the simple public health message to be conveyed is that some walking is better than none at all, and more is better.

It will be especially interesting to note the potential for walking for fitness over the next several decades. The generation of baby boomers, many of whom grew up in the first automobile-oriented suburbs, will need to exercise to maintain physical health. The increased participation of the public health community in promoting walking is a positive development for the transportation sector. As more people walk, it is reasonable to expect that awareness of safety and facility design will increase, leading to positive developments for pedestrians.

PROMISING FUTURE

As we enter the 21st century, it is reasonable to expect that with a continuation of legislative support for pedestrian and bicycle facilities, the U.S. Department of Transportation, states, and localities will continue to advance pedestrian programs. The professional community is also to be credited for acknowledging the need for improvements and in joining forces with the advocacy community.

For pedestrian transportation to reach its national potential in the 21st century, federal funding and support, updating of professional design manuals, and the interest of professionals must continue.

Significant increases in resources and research are needed. Better and more data on pedestrian travel and crashes must be gathered; information on pedestrian travel should reach the sophistication of that available on motor vehicles. More funding for pedestrian safety research is also needed. Awareness that pedestrian crashes are the country's second largest safety problem must increase substantially, and danger to pedestrians must be viewed as a failure of the entire transportation system. Finally, smart growth approaches to land use must be instituted and their success quantified. Perhaps then we will all realize the public health benefits of walking.

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