

Healthy Communities for Young and Old: How Transit and Better Community Design Help The Most Vulnerable Generations

May 1, 2006

PANELISTS

Dr. Howard Frumkin, Director, National Center for Environmental Health, Centers for Disease Control (CDC).

Richard Gilbert, Director of Research, Centre for Sustainable Transportation, Toronto, Canada.

Kathryn Lawler, Director, *Aging Atlanta*, Atlanta Regional Commission

The Environmental and Energy Study Institute held a Congressional Briefing to examine ways to protect and enhance the health and well-being of the youngest and oldest members of society through improvements in the way our communities and transportation systems are designed.

Mobility for the young and old is especially limited in the United States due to our heavy reliance on personal automobiles. Several major health problems, including obesity, asthma, and

social isolation, are exacerbated by our overdependence on this single mode of transportation and the spread-out land-use patterns that developed around the automobile. The briefing highlighted the need to provide alternatives to the car, including transit, walking, and other options as well as to support the use of such modes through improved community design. Briefing speakers described transportation and land use policies and programs that could help to alleviate health problems and better address the needs of youth and the elderly.

SECTION I: Health Implications of Community Design and Transportation

Community design and transportation directly influence several major health challenges in the United States. Dr. Howard Frumkin, Director, National Center for Environmental Health, Centers for Disease Control (CDC), expounded on the links between post World War II suburban development and health challenges including obesity and weight problems caused by a sedentary lifestyle; injury from auto accidents; asthma exacerbated by transportation air emissions; and poor mental health due to fewer opportunities for social interaction.

Frumkin connected the rise in childhood obesity and other ailments with a decline in active modes of transportation - including walking and biking to school. The following statistics illustrate these claims.

- In 1969, approximately half of all school children walked or bicycled to school, and 87 percent of those living within 1 mile of school walked or bicycled.¹ Today, less than 15 percent of children and adolescents use active modes of transportation.²
- The CDC recently reported that between 1999 and 2004, there has been a **significant increase in the prevalence of girls and boys between the ages 2 and 19 who are overweight** (13.8 percent in 1999 to 16.0 percent in 2004 for girls, and 14 percent in 1999 to 18 percent in 2004 for boys).³ Seventy to 80 percent of obese adolescents will remain obese as adults.⁴
- Obesity increases risk for heart disease, cancer, diabetes, and other major health problems. In 2000, the U.S. Surgeon General estimated that **the economic cost of obesity was approximately \$117 billion.**⁵

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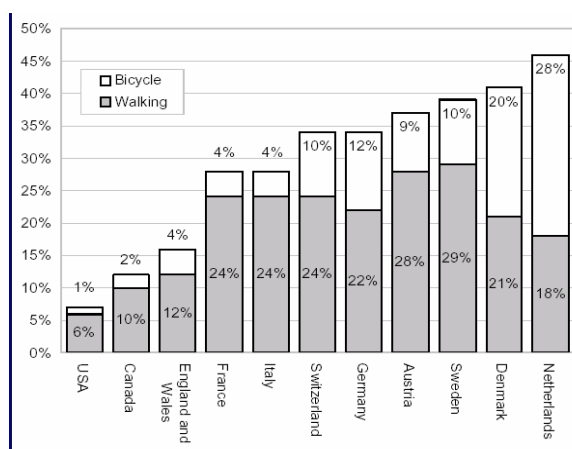
This briefing was organized with support from the American Public Transportation Association (APTA) and the National Institute of Environmental Health Sciences (NIEHS).

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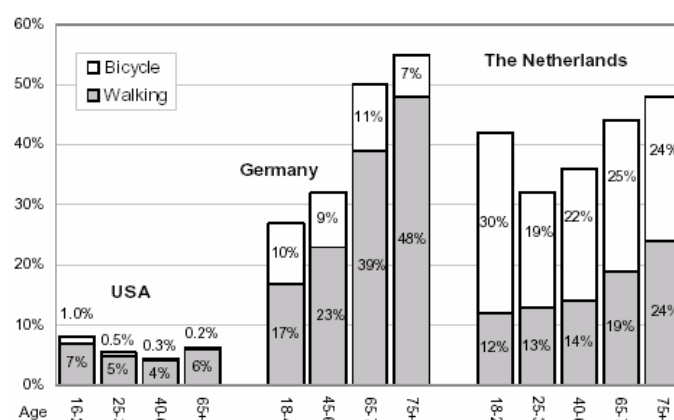
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According to Dr. Frumkin, public health professionals have become increasingly interested in examining the health consequences of different land use patterns to determine how to keep people healthy throughout their lifespan. This interest is leading to new collaborations between health professionals, transportation specialists, and land-use planners.

Figure 1: These graphs highlight the differences between the U.S. and European nations in terms of transportation methods. The U.S. has a much lower rate of biking and walking. Europeans engage in physically active transportation throughout their lifetime



Walking and Biking Shares of Urban Travel in Europe and U.S.



Walking and biking shares of urban travel in the U.S., Germany, and the Netherlands by Age

Source: Pucher and Dijkstra. *Promoting Safe Walking and Cycling to Improve Public Health: Lessons from the Netherlands and Germany*. *Am Journal of Public Health*, September 2003, Vol 93, No. 9, pp. 1509-1516

Section II: Special Needs of Youngest and Oldest Populations

Both children and older adults have special transportation needs that must be addressed if they are to be served adequately. A 1996 report by the Federal Transit Administration found that **nearly one-third of the American population is transportation disadvantaged**. This includes the fifty-six million children under the driving age, thirty-two million senior citizens who are seeing their driving ability diminish, and twenty-four million people with disabilities who depend on transit, paratransit, or expensive private transportation services.⁶

Children

Richard Gilbert, Director of Research, Centre for Sustainable Transportation, Toronto, Canada and lead author of a new report *Child and Youth Friendly Land-Use and Transport Guidelines* quoted the former Mayor of Bogotá when he stated that “children are an ‘indicator species;’ if you can build a successful city for children, you will have a successful city for all people.” This report outlines how communities can better accommodate the needs of children and youth in design and transportation decisions (See Box 1). Children are particularly susceptible to air pollution from vehicles because their body systems are more sensitive to environmental toxicants. The following statistics emphasize the need for better transportation options for children to minimize harmful health impacts.

- **Asthma affects more than 20 million Americans, including 9 million children.**⁷
- **Air pollution can bring on asthma attacks.** When traffic congestion was reduced in Atlanta during the Olympic Games, there was a decreased traffic density which was associated with a reduction in pollution and lower rates of childhood asthma events.⁸ A study by Yale University researchers in 2003, found that children with asthma were

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particularly vulnerable to ozone (formed as a result of transportation emissions) even at levels below EPA's current 8-hour ozone standard.⁹

Furthermore, their sense of independence is diminished when they are unable to travel to any destination on their own. For these reasons, it is especially crucial for communities to address transportation and community design with children in mind.

BOX 1: *Child and Youth-Friendly Guidelines - Key Recommendations*

- In transport and land-use planning, the needs of children and youth should receive as much priority as the needs of people of other ages and the requirements of business. Identify where children and youth want to go or need to go and, to the extent possible, provide ways of getting there by foot.
- Explore pedestrian routes used or to be used by children to ensure that they are as usable and safe as possible.
- For younger children, arrange walking buses and other means of supervision. Walking school buses are designed to make walking to school safer by providing adult supervision for children who walk to school. The children walk to school in a group, picking up additional kids along their route.
- Separate sidewalks used by children and youth from heavily trafficked roads, particularly where traffic moves slowly or vehicles are stationary with engines idling for long periods.
- For older children and youth, ensure that destinations that cannot be a walk away are no more than a bicycle ride away.
- For younger children, ensure that sidewalks are suitable for their tricycles and bicycles.
- For destinations to be reached by bicycle, provide separate bicycle paths, and install bicycle lanes on regular roads only as a last resort.
- Ensure that every part of a transit system is safe and welcoming to a child, and affordable. Keep fares for children low, so as to encourage their use of transit systems, with or without supervision.
- Reduce the time children spend in school buses to a maximum of no more than 40 minutes per day. (See EESI fact sheet)
- When children must travel in vehicles, act to avoid poor in-vehicle air quality.
- Use low-emission rather than regular diesel vehicles for urban transit or, where possible, electric vehicles.

Source: Gilbert R and O'Brien C. *Child and Youth Friendly Land-Use and Transport Guidelines*. The Centre for Sustainable Transportation. April 27, 2005

Elderly

By 2030, the number of older Americans is expected to double from 35 million to 70 million.¹⁰ In order to accommodate this growing population, it is necessary to be proactive about adjusting communities to address the special needs of older individuals. For example, suburbs, which attracted young families in the 1950's and 60's, have not been keeping up with the needs of aging suburbanites. To deal with these unique challenges, better and more accessible transportation options should be provided along with a diverse housing stock, comprehensive planning, and integration of services. If Americans wish to "age in place," it is critical to begin to address these issues and design more elderly-friendly communities.

According to the American Public Transportation Association, failure to expand mobility options for the elderly will have large social and economic ramifications including:

1. Heightened safety risks – older people are forced to drive, increasing risks.

2. Limited options; lost mobility

- **More than one in five Americans (21 percent) over the age of 65 do not drive.**¹¹
- An AARP survey found that **60 percent of seniors did not have transit** within a 10-minute walk of their home.¹²
- In rural areas, nearly two-thirds of all residents have few, if any, transit options.¹³

3. Isolation and reduced independence- More than 50 percent of non-drivers age 65 and older - or 3.6 million Americans - stay home on any given day partially because they lack transportation options.¹⁴

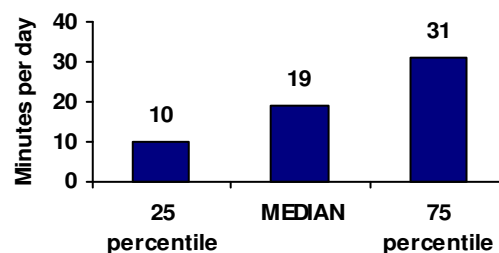
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4. Diminished health and quality of life - Older non-drivers have a decreased ability to participate in the community and the economy. Compared with older drivers, older non-drivers in the United States make:

- 15 percent fewer trips to the doctor; 59 percent fewer shopping trips and visits to restaurants; and 65 percent fewer trips for social, family and religious activities.¹⁵
- **Fifty one percent of older Americans (65+) do not engage in any regular physical activity¹⁶; and 41 percent are overweight.¹⁷** Lack of public transportation options diminishes opportunities to walk as older adults are forced to drive or stay at home.
- The National Household Travel Survey reveals that 29 percent of Americans who use transit walk at least 30 minutes a day to and from transit, providing much needed physical activity.¹⁸

Figure 3: Minutes of Walking To and From Public Transit Per Day



Source: Besser LM, Danneberg AL. Walking to public transit: steps to help meet physical activity recommendations. *Am J Prev Med.* 2005;29(4):273-80

Kathryn Lawler, Director, *Aging Atlanta*, Atlanta Regional Commission proposes a three-pronged approach to address these concerns:

1. Providing transportation alternatives—Lawler discusses paratransit in high density areas, transit training, transportation vouchers, and flex routes as options. Transportation voucher programs are of particular interest because they provide flexibility to seniors and are cheaper than traditional van services. Transportation vouchers, which can be used to pay for regular municipal transit service, special pick-up, or even to reimburse a relative for a ride are of particular interest because they provide seniors flexibility and can be less costly to a municipality than providing special van pick to all non-driving seniors;
2. Making roads as safe as possible for drivers; and
3. Increasing opportunities to walk by improving pedestrian infrastructure and better planning.

BOX 2: Making Transit Work For Seniors

Lane Transit District (LTD), Eugene, OR

LTD operates a one-on-one training initiative called the Bus Buddy Program, which teaches seniors how to ride the bus in a relaxed way. LTD recruits regular bus riders, known as “bus builders,” to serve as volunteers and teach seniors how to plan trips and navigate routes.



The agency partners with local senior centers to match individual seniors with these volunteers. In addition, seniors age 62 and older can ride LTD buses free every Tuesday, courtesy of community sponsors. Seniors schedule doctor appointments, visits with friends and shopping trips on Tuesdays to take advantage of this extremely popular program. For individuals age 70 and older, LTD offers a Pass for Life card.

Charlotte Area Transit System (CATS), Charlotte, NC

CATS has partnered with local churches, senior centers and community groups, to sponsor “demonstration rides” for older residents, scheduled seven or eight times a year, to shopping malls and social events.

In addition, CATS developed a database of bus stop features that identifies elements needing improvement and installed new trip-planning systems to show photographs of stops to riders. Through funds from the Elderly General Purchased Transportation Program, subsidize vouchers are available for use on local taxis for older residents who neither live near a bus route nor are eligible for other types of transportation assistance. Seniors in Charlotte also pay only half fare, are guaranteed reserved seating, and have access to low-floor or “kneeling” buses for easier boarding and exiting.

Source: American Public Transportation Association, *Expanding the Transportation Options in an Aging Society*, http://www.apta.com/research/info/online/documents/aging_options.pdf, Accessed September 13, 2006

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SECTION III: Community Design

When sprawling places were first built, land-use planners and developers believed they were improving living conditions, moving people from crowded and sometimes unsafe and polluted conditions to more comfortable surroundings. The last fifty years, however, have revealed some of the negative consequences of suburban sprawl such as increased driving resulting in more pollution, increased oil consumption and other health impacts.

For older adults, the need for better and more compact community design is even more acute. Kathryn Lawler addressed the importance of “aging in place” and the need to design communities that integrate housing and other community amenities. She stressed the value of diverse housing types so that older adults are able to downsize homes but remain in the communities they have lived in for most of their lives. She highlighted efforts in Atlanta to change zoning policies to ensure that a wide range of housing stock is available throughout the community, particularly in areas where there are high concentrations of older adults.

The advantages of compact neighborhoods (aka New Urbanism) for both young and old include:

- Increased social capital and opportunities for interaction
- Greater opportunity to integrate physical activity into one’s daily routine
- More independence for those who cannot or choose not to own/drive a car
- Reduced driving and related transportation emissions

While better community design and transportation planning can help to alleviate some of the nation’s fastest growing health concerns, it is also necessary to ensure these systems are as effective and safe as possible by providing seniors transit training, pedestrian safety education, etc.

SECTION III: Social Dynamics and Community Involvement

Low density development patterns have contributed to a decline in social interaction. When communities are spread out and people spend large amounts of time in cars, opportunities for interaction decrease. This is especially marked for the oldest and youngest populations who do not drive.

“When considering how to improve design and transportation options for children, above all, figure out where children and youth want to go and how they want to get there.” Richard Gilbert

Transportation options are important for childhood development. Those not old enough to drive a car, but independent enough to expand out of the neighborhood are in need of transit, and pedestrian and bicycling options. Older people become isolated and disengaged from the surrounding community without transportation options, resulting in feelings of uselessness which can trigger depression.

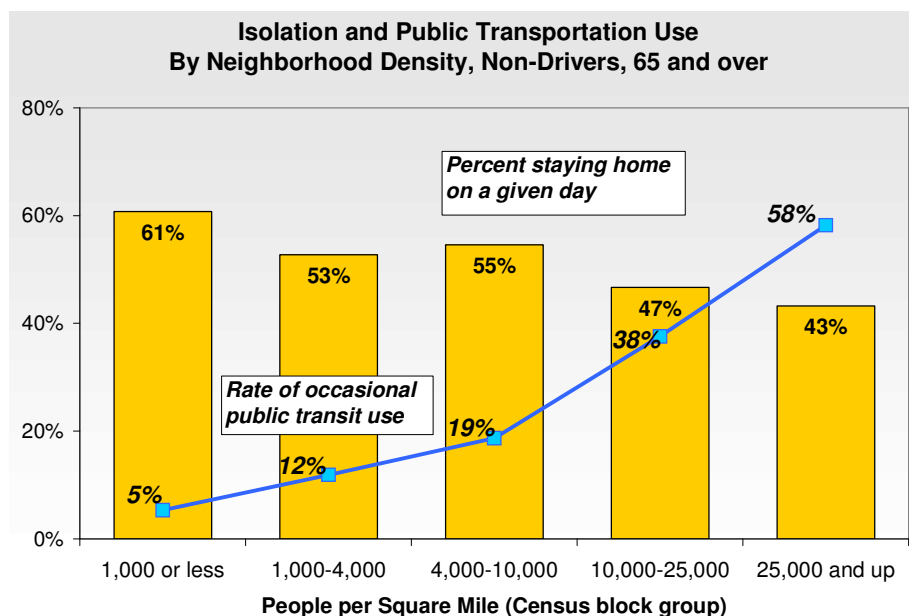
The list below illustrates the increased isolation non-driving seniors experience in spread-out suburban communities.

- **61 percent of older non-drivers stay home on a given day in more spread-out areas**, as compared to 43 percent in denser areas;
- **More than half of older non-drivers use public transportation occasionally in denser areas**, as compared to 1 in 20 in more spread-out areas;
- **One in three older non-drivers walks on a given day in denser areas, as compared to 1 in 14 in more spread-out areas.**¹⁵

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Figure 4: Public transportation can help integrate seniors in communities by providing mobility options



Source: Bailey L. *Aging Americans: Stranded Without Options*. Surface Transportation Policy Project, Washington DC. April 2004

CONCLUSION

The correlation between land use patterns and health risk factors, particularly among the youngest and oldest populations, are becoming increasingly clear. Many of the nation’s most pressing health problems, such as obesity, asthma, depression, and car-related accidents are exacerbated by current patterns of community design and transportation systems.

“Active transportation—walking and biking is feasible across the entire lifespan even in very old people if the infrastructure permits it.” Howard Frumkin

The majority of evidence suggests that places with the following features can improve the health and well-being of the population, particularly the oldest and youngest members:

- Higher density, more contiguous development with walkable neighborhoods
- Preserved green spaces and other environmental amenities
- Mixed land uses
- Housing choices that allow individuals to age in place; more affordable housing
- Limited road construction, balanced by transportation alternatives (pedestrian, bicycles, mass transit)

Examples of communities with these “smart growth” characteristics include the city of Portland, Oregon, and the Rosslyn-Ballston corridor in Arlington, Virginia. Communities that adopt these qualities may enhance the quality of life, especially that of children and older adults who often lack the ability to drive and may experience the negative consequences of social isolation and transportation related air pollution more severely than others. By improving community design as outlined above, and providing greater transportation options, public health and quality life can be improved.

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ENDNOTES

This brief includes some relevant information not presented at the May Congressional briefing. Sources for all such information are cited.

¹ U.S. Department of Transportation, Federal Highway Administration. *1969 National Personal Transportation Survey: travel to school*. Washington, DC: US Department of Transportation; 1972

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