Transportation Options for a Maturing Population: Strategies and Tools for Communities and Decision Makers

FINAL REPORT

Prepared for
National Cooperative Highway Research Program
Transportation Research Board
National Research Council

Eno Transportation Foundation
Washington, DC

September 2005
ACKNOWLEDGEMENT OF SPONSORSHIP

This work was sponsored by the American Association of State Highway and Transportation Officials, in cooperation with the Federal Highway Administration, and was conducted in the National Cooperative Highway Research Program, which is administered by the Transportation Research Board of the National Research Council.

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ACKNOWLEDGEMENTS

The Eno Foundation would like to acknowledge the key role that the NCHRP funding played in supporting this forum. NCHRP funding and the sponsorship of the American Association of State Highway and Transportation Officials were critical to the development of background papers for forum discussion and the event itself.

Eno would particularly like to recognize the support of John Horsley, Executive Director of AASHTO, Janet Oakley, Director of Policy and Government Relations, and Jack Lettieri, Jr., Commissioner of Transportation for the State of New Jersey as well as President of AASHTO, for their strong support of the forum and the critical issues it explored.

Emil Frankel, Assistant Secretary for Transportation Policy and Intermodalism at the USDOT, released a key DOT study so that it would be available for this forum, and his participation in the forum was greatly appreciated.
Transportation Options for a Maturing Population: Strategies and Tools for Communities and Decision Makers

Executive Summary

With the leading edge of the “Boomer” generation reaching the age of 60 next year, the U.S. is facing a flood of maturing Americans who want and need to maintain their mobility. We have never faced this type of challenge in our history.

Forum participants deliberated the following proposed solutions:

• Acknowledge the issue. The nation seems to be in denial about the massive mobility challenge that we will face. A better understanding of our demographics at the state and regional levels will help the policy debate develop.

• Realize that the real solutions to this challenge are at the state and local level. The planning to address mobility demands of the elderly must be done on a regional basis, supported by federal initiatives in research, evaluation, and best practice recognition.

• Improvements in the existing road environments that will help a maturing population will help everyone. Better signage, traffic lights, and pavement markings are win-win investments. They are cost effective in every environment and should be encouraged as part of every Transportation Improvement Plan (TIP).

• Development of better automobile technology to extend the safe driving of a maturing population is also for the entire population’s benefit. Rear object sensing, forward night imaging, and better dashboard information all help make drivers safer over a longer period of driving.

• Develop more non-driving options. Transit options can seem both unavailable and unfriendly if they are not developed with a maturing population in mind. Easy access to bus and rail schedules, station and bus stops and route maps benefit everyone, but especially a population that is not easily convinced to use transit. On-demand service providers, in both volunteer programs and full-time staffed organizations, need to be able to provide easy service information and the have ability to custom-design their services to a changing population.

• Recognize that in many small urban and rural areas, there are few mobility options besides the help provided by friends and volunteers. Supporting those drivers with state laws that define the limits of liability is very important.
Lastly, we need to recognize that our land use policies of isolating a maturing population in inaccessible developments that have no pedestrian access and no transit access are creating tremendous long-term social services and mobility problems. It is important that state TIPs begin to address this problem.

At the end of the conference, the participants ranked some specific action steps. These included:

- Encourage and support volunteer senior mobility programs as a matter of policy.
- Create new capabilities to deal with this issue by creating the position of Senior Mobility Manager at every state DOT. Develop national training centers where states can build relevant management and planning capacities.
- Encourage the development of mixed-use “livable communities” where appropriate attention is paid to senior mobility.
INTRODUCTION

Transportation Options for a Maturing Population: Strategies and Tools for Communities and Decision Makers

By the year 2030, 70 million Americans -- twice as many as today -- will be age 65 or older. Members of the Baby Boom generation, who’ve enjoyed unprecedented mobility via the private automobile, will soon present the nation’s transportation system with tremendous challenges. Highway officials will see growing numbers of unsafe drivers, as well as vulnerable pedestrians, on the roadways. Transit operators will be called upon to provide special services for seniors who’ve given up their car keys and find themselves isolated in suburban and rural areas.

To prepare States for the challenges ahead, the Eno Transportation Foundation, in collaboration with the Association of State Highway Transportation Officials (AASHTO) and the National Cooperative Highway Research Program (NCHRP), hosted a national forum on elderly mobility on November 4-5, 2004, in Washington, DC. The program featured presentations on the latest research in the field, on the status of federal policy development, and on early “safe mobility” initiatives now operating in various communities. Participants representing a wide array of stakeholders developed consensus around priorities for action by federal and state leaders as they prepare to meet the bow-wave of aging boomers. The meeting agenda is presented in Appendix A.

New Jersey Transportation Commissioner Jack Lettiere, Jr. and AASHTO executives John Horsley and Janet Oakley were instrumental in planning the forum, along with Tom Downs, Kathryn Harrington-Hughes, and Gina Burge of the Eno Transportation Foundation.

Participants

More than eighty stakeholders took part in the 2-day conference. The group included state and local highway and transit executives from 15 states, USDOT officials, Congressional staff, transportation researchers, engineers, health and human services professionals, gerontologists, representatives of senior citizens groups, and staff of national transportation industry associations. The list of attendees is provided in Appendix B.

Setting the Stage

To lay the research foundation for the forum, organizers invited experts in elderly mobility to contribute papers on several important issues, including:

- Policy, funding, and research to enable lifelong mobility
- State and local action plans for safe mobility
• Support for older people in their efforts to continue driving safely
• Transportation alternatives to the private car
• Development of safer roads and infrastructure for older drivers and pedestrians
• Development of safer, easier-to-use automobiles
• Mobility-focused land use policies
• Informational programs promoting maximum mobility and safety for seniors

These topics were drawn from a document previously prepared for AASHTO by Jon Burkhardt and John Eberhard: “Technical Background for A Symposium on Transportation Mobility for the Elderly, Task 1 and Task 2.”

The following papers were prepared for the forum:

• Jon E. Burkhardt, “Better Public Transportation Services For Seniors” WESTAT Rockville, MD  Lewis G. Grimm “Elderly Issues in Transportation”; Cambridge Systematics, Inc. Chevy Chase, MD

• Richard A. Marottoli, “Mobility, Mobility Decline, and Available Interventions: The Good, the Bad, and the Ugly.” Yale University, New Haven, CO

• Katherine Freund, “Personal Transportation: Federal Programs for the transportation-Disadvantaged” ITNAmerica, Portland, ME

• Lewis G. Grimm “Elderly Issues in Transportation”; Cambridge Systematics, Inc.; Chevy Chase, MD

• Robert McNulty, “Livable Communities & Aging In Place” Partners for Livable Communities Washington, DC

One additional paper was presented at the forum:

• Sandra Rosenbloom, “The Mobility Needs of Older Americans: Implications for Transportation Reauthorization,” The Brookings Institute, Washington, DC

All of the above documents are provided in the Appendices.
Defining the Challenge

Jack Lettiere, Jr., New Jersey Commissioner of Transportation and President of AASHTO, opened the forum on Thursday afternoon, November 4th. He expressed his view that safe mobility for seniors would be one of the major issues states would have to grapple with in the coming decades. Lettiere explained that he’d become interested in the subject while dealing with developers of a residential community for seniors in New Jersey. He learned about the elderly’s special needs and the barriers that stand in the way of implementing remedies, such as adequate sidewalks, clear traffic signals and street signage, ready-access to transit, etc. The Commissioner concluded that concerns related to the growing senior population must be made explicit in the state’s five-year capital program so that developers and other community leaders will know in advance what is required.

Lettiere thanked the audience for their participation and outlined the forum agenda. He explained that the first segment of the program would explore the nature and scope of the elderly mobility problem. He then welcomed keynote speaker US Assistant Transportation Secretary Emil Frankel to the podium.

Secretary Frankel articulated the Department’s goal of providing for the safe mobility of America’s maturing society. He explained that the country anticipate more highway fatalities involving seniors citizens in the years to come, both because of the growing percentage of seniors in the overall population and the fact that aging Boomers are expected to drive more miles than past groups of seniors.

Frankel painted a vision of a transportation system that would allow older Americans to remain independent and to age “in place.” USDOT would work in partnership with state and local transportation agencies, private businesses, medical and social service providers, and the myriad of interested community groups to extend safe driving and to offer convenient and affordable transportation options when driving and walking must be curtailed.

Frankel articulated the Department’s goals related to elderly mobility:

- Construction of safer, easier-to-use roadways and walkways.
- Safer, easier-to-use automobiles.
- Improved systems for assessing the competency of older drivers and pedestrians.
- Better, easier-to-use public transportation services
- Targeted state and local action plans
- Better public information
- Basic and social policy research

Following Emil Frankel’s presentation, Mort Downey, President of PB Consult and former Deputy Secretary of Transportation, greeted participants and gave them a brief
“charge” for the meeting. He urged them to use the opportunity of the forum to expand their knowledge of the complex elderly mobility issue, learn from the experiences of others in the room, and think creatively about recommendations they might make to government leaders – federal, state, and local -- who may only now be appreciating the magnitude of the problem.

**Sandra Rosenbloom, Professor of Planning, University of Arizona**, next offered a presentation entitled, “Demographics is Destiny.” She described demographic trends showing increasing numbers of elderly citizens living in suburban and rural areas, highly dependent on their private cars. She explained that even if per capita highway fatality rates continue to drop, the large increase in the number of older drivers would cause an absolute increase in crash rates. She said a greater percentage of older drivers will be over age 85, and crash rates rise rapidly after 85.

Rosenbloom identified a number of assumptions about senior mobility that she considered as “myths”:

- **As people age, they first lose the ability to drive; they then use public transit if it is available; when unable to use public transit they walk, and finally, unable to walk they use special transit services.** Rosenbloom refuted this progression, saying that many seniors continue to drive when they can no longer walk easily. And she argued that the elderly may not have the option to take special transit services because such services are not widespread.

- **Older people who drive meet their mobility needs without assistance; those who cannot drive have substantial unmet needs.** Rosenbloom explained that seniors who still drive often limit their travel long before they stop driving altogether, and those who cannot drive may, in fact, have adequate mobility, thanks often to the efforts of friends and family.

- **All loss of mobility skills is permanent.** She argued that disability was not always permanent and could fluctuate in response to a variety of factors.

Professor Rosenbloom concluded by sharing with the group recommendations she made months prior for the pending reauthorization of the federal highway and transit bill:

- Plan explicitly for the mobility needs of the elderly.
- Target public transit services and facilities directly for the elderly.
- Support alternative transport options, including local volunteer organizations.
- Improve the highway and street infrastructure.

**Lessons from Early Efforts**

A panel of transportation executives next spoke to the audience about their experiences in designing and delivering elderly mobility programs.
Sandy Modell, General Manager of Alexandria Transit Company of Alexandria, VA, described her agency’s work in support of the “frail elderly.” She explained that the most vulnerable of the senior population often need escorts to assist them in moving from their home to their desired destination.

Arthur Holmes, Jr., Director of Public Works and Transportation for Montgomery County, MD, spoke of the need to make services more reliable for seniors who, his staff had learned, were hesitant to take public transit because of they were uncomfortable waiting for buses. Now, his agency can use GPS technology to notify seniors when a bus is within 5 minutes of a stop. Another hurdle cited by Holmes is low awareness of available services among seniors and their caregivers. Montgomery County has developed a comprehensive transportation guide for seniors and those with disabilities.

Gloria Jeff, Director of the Michigan Department of Transportation, gave a DOT executive’s perspective on the senior mobility challenge. She described some of the practical concerns that force older people to rely on business establishments with higher prices and limited capacity. She also outlined highway improvements targeted to seniors now being implemented in Michigan, such as surrounding traffic lights with black shields to make them more visible in bright sunlight.

Roundtable Discussions: Can current systems adapt?

For the balance of the afternoon, participants divided into four groups to discuss hurdles to making needed changes to transportation systems on behalf of seniors. Topic areas included:

- Planning for seniors through the Statewide and MPO processes
- Designing for accessibility, safety, and mobility
- Developing funding strategies to support elderly mobility efforts
- Collaborative partnerships and funding flexibility

Statewide / MPO Planning Process

Participants discussed the need for states and localities to employ better land use planning to enable older people to live in their homes for as long as possible. Emphasis was given to helping residents in a community move from place to place with less reliance on a personal vehicle.

Participants spoke about the finding in New Jersey that seniors accustomed to using the state’s paratransit services begin opting out of the system in their late 70s / early 80s. Researchers found that these elderly riders need an expanded service offering, including help getting to the bus stop, help getting in and out of the vehicle, and an escort at their destination.
The group made a number of suggestions to enhance the statewide / MPO planning process, including:

- Tax incentives for the development of affordable, accessible housing
- Marketing campaigns to promote new residential areas that are “friendly” to seniors
- Partnerships with the financiers of these new communities.
- Requiring new healthcare and life-care facilities to prepare “transportation impact statements”

**Jack Lettierie** described how New Jersey officials were able to use existing authority to press for modifications that would make developments more transportation-friendly. He discussed the value of mixed-use communities where seniors were in the hub or central area.

**Tom Downs of the Eno Transportation Foundation** brought up the need to have more useable demographic data that would permit better forecasting. This information would assist planners in defining the transportation needs of people at a much more specific level than is now possible.

It was the sense of the roundtable group that more effective land use planning must be undertaken if the mobility (and overall) needs of seniors are to be addressed.

**Designing for Accessibility, Safety, and Mobility**

This group addressed how vehicles, highways, and transportation options can be enhanced by the use of new technologies and better planning. There was discussion of hybrid passenger vans, ITS /smart vehicles, and smart vehicle/roadway interface and how these technologies can foster accessibility, safety, and mobility.

The recommendations from the FHWA’s “Highway Design Handbook for Older Drivers and Pedestrians” work better when they are addressed as local level problems and issues. This was exemplified by the work that Michigan has done in their demonstration project in Detroit, such as the black shielded traffic light discussed by Gloria Jeff. They also emphasized the need to measure outcomes to see what is actually working and what isn’t.

In the area of improving highways, there was discussion of the need for more resources for traffic safety strategies – signage, stripping as well as for safety conscious planning. There was also a need to highlight eligibility for funds that would enhance older drivers’ safety and the safety of pedestrians. There was also discussion of the potential role that public/private innovations and partnerships might bring to this activity. There was also discussion of the need to inform different populations of the value of some of these new features and the potential of intergenerational programs such as shown in “Safe Routes to School for Elderly Escorts/Concierge Programs.” It was suggested that NHTSA might authorize inter-generational education/re-education programs.
There was also the recommendation that the planning guidelines from FHWA include date requirements that would support safety conscious planning for maturing populations.

**Developing a Funding Strategy to Support Elderly Mobility Efforts**

The funding strategy group discussed many of the complications in current funding of federal programs. For example, under the Older Americans Act, seniors with financial resources over a certain amount cannot use needed services, even though they would be willing to pay.

**Jane Hardin of the Community Transportation Association of America (CTAA)** indicated that transportation programs are commonly fueled by funds from multiple sources. She stressed the need to create a new paradigm where elderly needs are recognized and the burden is shared between the public and private sector. **Kathy Freund of Independent Transportation Network** suggested that private resources could be leveraged by creating public policy incentives to match private resources and eliminating insurance barriers.

The group agreed that an infusion of venture capital would speed development of innovative new programs to serve seniors. There is also a need for market-based/private subsidy programs. With coordination of services, some programs have been able to provide services for 24 hours a day, 7 days a week. Kathy Freund brought up her experience of converting non-working assets (cars) into working assets that can be used for funding personal transportation and the use of transit checks/vouchers from private sector employers.

Some of the findings of the TCRP projects that have synthesized new systems, services, and approaches were discussed. One of the options discussed was having older Americans who can afford it cover the costs of transportation services they utilize.

**Making A Fragmented System Work for Seniors: Collaborative Partnerships and Funding Flexibility**

Participants in this group identified several limitations on funding sources, including fragmentation, inability to move funds from one “silo” to another or combine funds from two sources, and insufficiency of available Federal/State/Local funds to meet current needs. There was discussion of the need to allow a mix of HHS and DOL funds. There was discussion of how the Title 3b funds from the Older Americans Act have unnecessary program restrictions. For example, the program is not means tested and prohibits fees and fares.

**Selma Sauls of the State of Florida** expressed her belief that current systems can be made to work for seniors, but not without accountability, top brass commitment, interdisciplinary approaches, and flexibility to accommodate the changing problems and demographic trends. There is a need to engage the gerontologists, and the elder alliances to ensure they are sufficiently involved in identifying the problems and developing
solutions. We need to design communities for the elderly that will enable them to age in place, with reasonable access to needed and desired goods, services, and social activities. Sauls called for the establishment of national training centers for those responsible for delivering programs for seniors, more extensive sharing of successes and failures, and mentoring and job shadowing in successful programs.

Particular attention needs to be given to those who have the greatest mobility needs – those requiring door to door, door through door, and escort services. System connectivity and a commitment to “one call does it all” customer service must be top priorities.

The limitations of federal grant programs lasting only three years can have a very negative impact on having consistency in programs.

“Why can’t we plan for this?”

At the Thursday evening dinner session, Tom Downs, President and CEO of the Eno Transportation Foundation, addressed forum participants. He spoke about the limitations in available census data and what might be done to help state and regional planners do a better job of including senior transportation needs in the state transportation improvement program. There is some hope that the American Community Survey (ACS) will provide more detailed information to planners to help shape future programs. Downs also raised the question of why the nation’s leaders seem to be “in denial” about the inevitable decline of mobility skills among Baby Boomers.
Forum participants reconvened Friday morning and first listened to presentations by several key stakeholders.

**A View from Capitol Hill**

Andrew Patzman, Senior Policy Advisor & Counsel to the Senate Special Committee on Aging, spoke about the Committee’s work in the area of senior mobility. He summarized the findings of a GAO study commissioned by the Committee on the current state of transportation services for the elderly. Concerns raised by GAO include:

- Lack of information on how well seniors’ needs are being met
- Lack of effective guidance to service providers
- Lack of flexibility to effect change
- Inadequate communication to the senior population
- Failure of programs to meet the varied needs of seniors
- Poor coordination
- Lack of guidance to seniors on preparing for alternative transportation when the need arises.

Patzman outlined several opportunities for improvement:

- Providing clear guidance to area agencies on aging (AAA) on evaluation and performance measures
- Helping seniors extend their driving lives through training, therapy, and mechanical devices
- Better ways to accommodate the varied needs of the elderly, as well as incentives to make improvements, e.g., lighted guideways
- Better leveraging of resources and allowance for greater flexibility in how funds can be used
- Involving seniors in all aspects of planning – as potential users of the enhanced systems/services and potential service providers.

The next White House Conference on Aging, scheduled for 2005, was mentioned as an opportunity to address these issues. Suzanne Stack, a Safety Team Leader in the Office of the Secretary, USDOT, indicated the Conference could raise awareness of the senior mobility challenge and help put it on the nation’s agenda and the agenda of all state officials.
Promising Initiatives

Jane King, Campaign Manager of AARP’s Life Answers Program, addressed forum participants about AARP’s “Social Impact Agenda.” She explained their goal to develop a comprehensive agenda for livable communities within the next 5 years.

Helen Kerschner, President and CEO of the Beverly Foundation and Bryna Helfer, FTA Program Manager for Human Service Transportation, next spoke about obstacles to change and coordination issues in service delivery.

Helen Kerschner stressed the need for coordination in transportation for the older population. She described how her early work in the area had led her to see the need for volunteer supplemental transportation options since the elderly seemed to have difficulty using conventional transportation. She underscored the value of partnering with the wide variety of groups with interest in ensuring safe mobility options for seniors, including the AAA Foundation for Traffic Safety, the Community Transportation Association of America, Easter Seals/Project Action, AoA, ASA, WESTAT, and NHTSA.

Kerschner spoke of her focus on identifying the strengths of successful supplemental programs and disseminating best practices. She mentioned a project the Beverly Foundation is collaborating on with CTAA to better understand the workings of service delivery. She also described a project for AoA that will focus on “door through door” services – broadening the definition of transportation to include personal escort from the client’s home to his or her destination and back again.

Kerschner stressed the critical role volunteers play in making this and other services function smoothly. Good volunteers are hard to recruit, she said, but once recruited, they tend to stay for a long time. She told the audience that her team has gathered many heartwarming stories about the friendships that develop between volunteer drivers, often themselves senior citizens, and riders.

Bryna Helfer spoke about the Federal Transit Administration’s “United We Ride” program sponsored jointly with the AoA. The program is providing state coordination grants of $1.8 million to 45 states to support the following activities:

- Education and outreach
- Tracking from point of entry into the system to final booking
- Regulation relief by collecting all the regulations, analyzing eligibility requirements – some programs depend on who you are and others depend on where you are going
- Coordination of transportation planning within the agency.

Helfer said a “Framework for Action” would be developed from the best practices identified through the state demonstration grants.
Building Consensus

Over the two-day program, participants developed consensus around the urgency and complexity of the elderly mobility challenge and the need for more focused leadership at all levels.

They agreed that general awareness of the problem is low, and without sufficient awareness among leaders effective planning and targeting of resources would be difficult. The group felt it was important to understand the reason for this denial about the decline in mobility skills that will inevitably come to the Boomer generation.

Participants agreed that Federal efforts to-date have been, at best, fragmented and inadequately coordinated.

They also agreed that collaboration among public agencies, business interests, the medical community, human services providers, and senior citizens’ groups would be critical to overcoming hurdles.

Researchers and service providers who spoke to the group conveyed the common finding that the most effective mobility programs in operation are local ones, and include public/private partnerships and volunteer organizations. These experts and other forum participants felt that if community-based non-profits are to lead the way, federal and state government must support expansion of current and new providers by defining and disseminating best practices and offering a package of technical assistance, performance measures, and evaluation tools.

Next Steps

On Friday afternoon, Former Deputy Transportation Secretary Mort Downey led the group in an exercise to identify and prioritize actions for federal and state leaders to take in tackling the problems at hand.

Participants were asked to propose specific next steps out-loud. Their suggestions were written on flip charts. Once all ideas were presented, Downey asked each participant to vote on the five they felt were most critical.

The group’s top priorities were as follows:

- Encourage and support volunteer senior mobility programs.
- Create the position of Senior Mobility Manager at the state DOT level, who will plan regional strategies and coordinate resources and services. Identify and train professionals for this role to serve in regions across the country.
• Encourage development of mix-used “Livable Communities,” in which appropriate attention is paid to senior mobility needs.

• Develop national training centers, where states can build management and planning capacities related to elderly mobility and learn best practices in service delivery.

• Work with organizers of the 2005 White House Conference on Aging to ensure that transportation be given adequate focus on the agenda.

• Create incentives for States to develop comprehensive plans for safe mobility of their elderly residents.

• Use retirees as resources in decision-making and service delivery.

**Conclusion: Taking Charge – Creating Change**

Jack Lettiere closed the conference by issuing a call-to-action. He said he would work with his fellow state DOT executives to advance the proposals articulated at the forum and to ensure that senior mobility considerations are included in their comprehensive, state-wide planning efforts. He stressed that elderly mobility – with millions of baby boomers approaching retirement -- was a matter demanding the attention of all leaders in society, not just those responsible for transportation. Commissioner Lettiere concluded by urging participants to take what they’d learned at the meeting, share it with their home organizations and partners, and prepare for a challenging road ahead.
Appendix A

Transportation Options for a Maturing Population: Strategies and Tools for Communities and Decision Makers
Latham Hotel, 3000 M St. NW, Washington, DC 20007

Agenda

Thursday, November 4

Noon-1:30 pm  Welcoming Remarks
Jack Lettiere, Jr., Commissioner, New Jersey
Department of Transportation

Luncheon

Keynote Presentation
Emil Frankel, Assistant Secretary for Transportation
Policy, USDOT

1:30-1:45 pm  Break

1:45-2 pm  Forum Purpose/Charge to Participants
Mort Downey, President, PB Consult

2-2:30 pm  “Demographics Is Destiny”
Sandra Rosenbloom, Professor of Planning, University of Arizona

2:30-3:30 pm  Success Stories — What Works and Why
Moderator:  Mort Downey
Sandy Modell, General Manager, Alexandria Transit Co., Alexandria, VA
Arthur Holmes, Jr., Director, Department of Public Works and Transportation, Montgomery County (MD)
Gloria Jeff, Director, Michigan Department of Transportation

3:30-3:45 pm  Break

3:45-5:45 pm  Roundtable Discussions

1.  Statewide/MPO Planning Process
2.  Designing for Accessibility, Safety, and Mobility
3. Developing a Funding Strategy to Support Needs
4. Making Our Fragmented Transportation System Work for Seniors: Collaborative Partnerships and Funding Flexibility

5:45 pm Reception
6:45-8:30 pm Dinner

“Why Can’t We Plan for This?”
Tom Downs, President/CEO, Eno Transportation Foundation

Friday, November 5

7:30-8:30 am Continental Breakfast
8:30-9 am Remarks by Andrew Patzman, Senior Policy Advisor & Counsel, Senate Special Committee on Aging
9-9:45 am Reports from Roundtable Discussions
9:45-10 am Break
10-10:30 am “Social Impact Agenda”
Jane King, Campaign Manager, Life Answers Program, AARP
10:30-11:30 am Overcoming Obstacles to Change/Coordination Issues
Helen Kerschner, President/CEO, Beverly Foundation
Bryna Helfer, Program Manager for Human Service Transportation, Federal Transit Administration
11:30 am noon An Agenda for Action — Moderated Discussion
Moderator: Mort Downey
Noon Luncheon
Concluding remarks by Jack Lettierie
2 pm Adjourn
## Appendix B

### List of Forum Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
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<tbody>
<tr>
<td>Allan, Donna</td>
<td>Minnesota DOT</td>
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<td>Arikan, Jason</td>
<td>Project Coordinator, Virginia Transit Association</td>
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<td>Balentine, Ray</td>
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<td>Bauer Darr, Linda</td>
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<td>Beattie, Dan</td>
<td>Washington Office of Michigan Governor Jennifer Granholm</td>
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<td>Bickley, Rebecca</td>
<td>Director, PennDOT - Bureau of Driver Licensing</td>
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<td>Bowlden, Taylor</td>
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<td>Campbell, Sarah</td>
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<td>Chen, Sophy</td>
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<td>Dinh-Zarr, Bella</td>
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<td>Downs, Tom</td>
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<tr>
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Groeninger, Tom, Regional Manager, Pace Suburban Bus
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Appendix C

BETTER PUBLIC TRANSPORTATION SERVICES FOR SENIORS

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October 8, 2004

Prepared for the
Symposium on Transportation Mobility for the Elderly
Washington, DC
BETTER PUBLIC TRANSPORTATION SERVICES FOR SENIORS

Relatively few older persons in the United States -- individuals 65 years of age and older -- now use public transit; public transit trips are a very small proportion of all travel of older persons. (1) Improved public transit services could offer viable travel alternatives for all older persons, but especially for those older drivers whose abilities to safely operate automobiles is deteriorating.

Better travel options for older persons in the future will require a broader perspective than is commonly found in the transportation industry at this time. Still, several excellent examples of broader perspectives already exist. Several successful innovations now offer a greater range of services and a more direct focus on consumers. They also involve comprehensively examining the kinds of services that are being offered in relation to the kinds of services being demanded now and in the future.

While a few successful examples of better public transit services for older persons may be unique to specific challenges in specific communities, some useful and broadly applicable strategies are emerging from the wide list of potential improvements. These strategies include:

- Expanding and improving current patterns of operations and services.
- Providing new types of services.
- Obtaining additional resources.
- Obtaining the participation of new and different partners in service delivery.
- Training transportation system personnel in the needs and demands of older travelers.
- Providing more traveler information in a more user-friendly manner.

Some challenges can be more easily addressed than others. Some solutions can be implemented within existing structures for the delivery of transportation services and the legislative, policy and regulatory environment, but other solutions will require fundamental structural changes. Other solutions will require fundamental changes in the way services are organized, managed, and delivered.

This paper looks at various improvements to public transportation services that are being made, or can be made, to offer better public transportation services for older travelers. Short-term, low-cost improvements are possible, and are examined here. Beyond these improvements, new "reinventing transit" perspectives are needed. Greater varieties of services and vehicles are needed, and comprehensive examinations of services need to be conducted. Doing this would lead to a broad-spectrum approach to meeting the travel needs of older persons. This paper also describes communities in which some of the most forward-looking ideas have been applied.
SHORT-RUN IMPROVEMENTS

One piece of good news is that there are short-run improvements that transit operators can implement to make transit services more elder-friendly. As identified by focus groups of elders (I), these short-run improvements include

- improving schedule reliability (or finding means of providing accurate information on departures and arrivals, such as technologies that provide real-time information on actual arrival times),
- providing “guaranteed ride home” services,
- finding ways of welcoming persons who are not accustomed to using the service,
- finding ways to help seniors board vehicles when needed,
- improving information and providing much more of it, both for trip planning and while traveling,
- adding customer service features, such as calling out stops, reserving more seats for older persons, providing more friendly and more detailed travel information, providing more telephone lines for information, and making systems more responsive to complaints,
- working with human service organizations and volunteer agencies to better service the more specialized travel needs,
- partnering with representatives of the aging community to build additional community support for more local transit funding,
- providing special vehicles for special events,
- minimizing physical barriers, such as steep or long stairs, or standing and waiting outside in all kinds of weather for long periods, and
- putting an emphasis on polite, courteous drivers.

One of the key findings of this research (I) was that none of the desired changes are particularly new or revolutionary. Some have been tried in one community or another.

NEW PERSPECTIVES, NEW PARADIGMS

Some public transit systems are recognizing that transportation service delivery involves more than fixed-route service for the general public and complementary paratransit service for some people with disabilities who meet ADA eligibility requirements. Additional paratransit services may provide an appropriate, cost-effective way to deliver transportation services in some settings, especially for seniors. There are a variety of transportation options, or alternatives, which combine elements of fixed-route and paratransit services to more effectively meet the travel needs of customers. In a collaborative, coordinated setting, the focus can shift from the operation of fixed-route bus and rail service to the design and delivery of a family of transportation services that focus on the travel needs and requirement of customers. Customers can include individuals, local agencies purchasing services, organizations advocating for the needs of specific groups of people, funding agencies, local elected officials, and others.

For a number of years now, a variety of sources have been discussing the concept of "re-inventing transit." From applying the principles of Total Quality Management (2) to new paradigms for public transportation (3) to the pronouncements of the APTA Transit 2000 Task
Force, industry leaders and researchers have been calling for new approaches to providing public transportation. According to Jennifer Dorn, Administrator of the Federal Transit Administration, "Public transportation must diversify its product line . . . to better meet customer trip needs" (4).

The results of the Improving Public Transit Options for Older Persons project (1) support the other calls for substantial change. In fact, the currently unmet needs of older travelers can serve as a powerful stimulus for the challenges facing the public transportation industry.

The basic choice for the public transportation industry revolves around travel mode. Will the industry continue its almost exclusive reliance on fixed route, fixed schedule services? Or, alternatively, will public transportation providers move toward operating a range of services at a range of prices? Choosing the first option implies satisfaction with a relatively small role in fulfilling overall travel demands of the population in general and older travelers in particular. Accepting the second role would place the industry in a much better position to be the provider of a much larger portion of the trips of older persons and others in the future.

But accepting innovations is often difficult. According to the New Paradigms for Local Public Transportation Organizations report (3), "The search for new paradigms reflects a recognition that many public transportation institutions and services, which have remained largely unchanged over the past 30 years, have become unresponsive and inflexible in the face of trends, conditions, needs, and expectations that are dramatically different than they were even a decade ago." This report, which should be required reading for all persons interested in improving public transportation, says that

- Fundamental change (a paradigm shift) is needed
- The focus of the new services needs to be on customers (service), not modes (assets)
- Logistical controls need to be implemented to satisfy customer needs
- The customer needs to see a seamless product
- Individualized, door-to-door services need to be emphasized.
- Examples of the kinds of new services that should be adopted by the transit industry in the U. S. include FedEx, Sealand/CSX, London Transport, and paratransit services in Gothenberg, Sweden.

The report goes on to note that

“We can send a package door-to-door across the continent with a single phone call and can report to senders and recipients its exact whereabouts instantaneously. Our travel expectations are now being built around this level of performance. The fact that we cannot manage the door-to-door trip for people as effectively says legions about the paradigm shift that is needed in passenger transportation.”

This kind of paradigm shift would provide the kinds of services that focus groups of older travelers have identified as key to their trip satisfaction (1):

- reliable departure and arrival times,
- door-to-door service,
- one central number to call for “on-stop transportation shopping,”
- reduced walking distances to fixed route bus services,
- flexible service available on demand (no 24-hour waits for trips),
- comfortable vehicles and waiting areas,
- connections between a wider range of origins and destinations, and
- services available during more hours of the day and week.

It is VERY important to note that these kinds of improvements to public transit services would be valuable to an extremely broad range of travelers beyond those who are elderly.

**A FULL RANGE OF SERVICES: THE FAMILY OF SERVICES CONCEPT**

Part of the paradigm shift would involve a greater range of services. A concept that originated in Sweden, but is now applied much more widely, is that of the family of services (6). **This concept recognizes that there is no single solution to the mobility needs of a whole population.** For example, services that provide for larger sectors of the population can provide wider coverage, higher frequency and lower cost, but will not be usable by some groups. Services that become more specialized to meet the needs of small groups will be less flexible to use and more expensive to supply. The objective of the family of services is to provide mobility for all at the lowest cost and with the greatest potential for spontaneous travel, by encouraging people to use the tier of service that offers greatest flexibility and costs least to provide.

A network of **high quality, accessible public transit services** (provided, for example, by low-floor buses) is the basis of a family of public transport services for an urban or suburban areas. These provide the opportunity for spontaneous travel and are relatively inexpensive to provide and use. They do require people to be able to walk to and from bus stops (about one-quarter mile (400 meters) at each end of a journey), to move quickly when boarding and alighting, and to tolerate crowding at peak periods.

For people who find mass public transport too demanding to use, the second tier of the family of services is **Service Routes**. These are scheduled bus services using low-floor midi-buses (around 20 seats) on routes that may be fixed or allow small diversions. The routes bring the buses close to the origins and destinations of trips to reduce walking distances, and buses can be hailed anywhere along their routes. Service Routes can be used by anyone; in some small towns, the whole public transport service is provided by Service Routes. Service Routes are more expensive per passenger than mass public transport, but less expensive than taxis or dial-a-ride.

For particular groups of passengers — those who need door to door service, or who cannot manage a Service Route vehicle, but do not require help entering or leaving the vehicle or attention during the journey — taxi services are provided with user side subsidies (7).

**Paratransit services** provide trips in response to specific customer requests (hence the term "demand-responsive"). Small buses, vans, or cars are typically used. For passengers who need help from their home into a vehicle, or attention during the journey, dial-a-ride services with an attendant in addition to the driver can provide mobility for those persons who have the most severe mobility limitations (7). These services are the most expensive to provide. Also, they usually need to be booked at least one or two days in advance, so spontaneous travel is seldom possible.
For many years, **taxis** have provided on-demand services for riders. Typically operated by public companies, taxis offer exclusive services from the origin to the destination of the passenger's choice. This is a premium service that usually commands premium fares. In recent years, some taxi companies have broadened the scope of their services to include shared ride and subscription trips.

An essential complement to a vehicular family of services is an **accessible pedestrian infrastructure**. All journeys involve some walking or assisted walking, and lack of accessible infrastructure is as much a barrier as an inaccessible vehicle. "Safe, convenient and comfortable walking is the key to local mobility" (8).

**THE FAMILY OF SERVICES CONCEPT IN EUROPE**

Families of transportation services are now general in Scandinavia and are developing in other parts of Europe. Sweden has led the way in providing integrated systems of accessible transport for people with differing degrees of disability (8). The full range of public transportation options appears likely to consist of the following components:

- accessible fixed route public transport (low floor buses and accessible metros) for those who can reach bus stops or metro stations;
- service routes for people who need a little more care than public transport can provide, and who do not need a very frequent service;
- subsidized taxis or volunteer drivers for people who need transport door to door, but do not need specialized care during the journey;
- dial-a-ride for the most severely disabled people who need considerable assistance or care; and
- subsidized private automobiles for those who are physically able to drive and who live far from public transport services.

**THE FAMILY OF SERVICES CONCEPT IN MESA, ARIZONA**

The community of Mesa, Arizona, east of Phoenix, is developing a family of transportation services. This family of services includes:

- Fixed route bus service
- Complementary paratransit service
- "Enabling Transportation," and
- Neighborhood circulator service.

To expand transportation alternatives for older adults in Mesa, Mesa Senior Services implemented a new program called **E.T. (Enabling Transportation)** in 2000. Modeled after the TRIP program developed in Riverside, California (1), ET is a mileage reimbursement program that enables older persons in Mesa to choose their own volunteer driver to provide them with transportation services and reimburse their volunteer driver with funding provided to them by the City of Mesa. Volunteer drivers are recruited directly by the participating resident and may be a neighbor or friend. Travel is reimbursed at a rate of $.32 per mile. The City of Mesa pays the participating resident and the resident pays the driver. The City of Mesa is also planning to
implement a neighborhood circulator route within a defined neighborhood area in 2003. This service will offer flexible routing to meet customer service requests.

A FAMILY OF SERVICES OPERATION IN UPPSALA, SWEDEN

Uppsala County is one of Sweden's fastest growing counties. The County, together with Stockholm and the Mälar Valley, is the country's largest labor market, and makes up one-third of the population of Sweden. Uppsala, the County capital, has a population of about 190,000 and is Sweden's fourth largest city. Commuter train traffic between Uppsala and Stockholm is the most extensive in the country, with trains for the 35-minute ride departing on an hourly schedule. About 10,000 persons commute from Uppsala to Stockholm on a daily basis.

For many years, Uppsalabuss has focused on the "entire trip requirements" of various segments of the transit rider population, including persons with disabilities. Uppsala was among the first communities to implement the family of services concept, including low-floor accessible buses, service routes, and dial-a-ride services. Service routes were started during the early nineties when the first low floor bus came into operation; approximately 70 percent of the fleet now consists of low-floor vehicles. In the city center, small low-floor battery powered buses are used both for a park-and-ride system and for those who need to travel short distances in the business area. There is also training and education for the drivers in the special needs different groups have on their trips.

The stated goal of Uppsalabuss is to make public transportation accessible to everyone by 2010. By applying the family of services concept, the community has been able to minimize the use of the more expensive specialized transit services for persons with disabilities.

COMPREHENSIVE EXAMINATIONS OF OVERALL SERVICES

Several comprehensive reexaminations of overall service patterns suggest that such activities could be emulated in other communities with attractive results. In 1996 and 1997, Fort Worth conducted a comprehensive review of transportation services and implemented a significant restructuring of its services. Prior to the restructuring, Fort Worth was operating a system of fixed routes, all radiating out of downtown Fort Worth. Any travel to locations not along a specific route required travel into downtown and a transfer to another bus to complete a trip. In January 1998, Fort Worth Transit ("the T") implemented a new system of services. The radial fixed route system was replaced with fixed routes that continued to serve downtown, cross-town routes, rider request routes, express routes, and one downtown and four suburban timed transfer centers.

Vehicle hours were reduced by 1.5%, vehicle miles by 5.5% and cost by 4.0%. Fixed routes into downtown that remained in service were the more highly used and productive routes. Some of these routes were simplified, with less branching, and their total distances were reduced. Other unproductive routes or route segments were eliminated.

Rider request routes were introduced into areas where fixed route service had been removed and gaps in service were created. Rider request service is curb-to-curb in each of these areas in the same way that complementary paratransit service is operated. Customers within the service area call to schedule pick-ups the day before a desired trip will be made. Approximate
pick-up and drop-off times are scheduled. Fort Worth permits same day scheduling of trips during lower demand midday hours, as well.

Within each of the rider request areas, time points are also established where customers are able to simply wait for a bus to get to a desired destination within the rider request area. Destinations can include locations for transfer to fixed route service out of the rider request area. Customers who are making the same trip on a daily basis can schedule their trip as a subscription trip so that a daily call to schedule the trip is not required.

A BROAD-SPECTRUM APPROACH TO SATISFYING THE NEEDS OF OLDER TRAVELERS

Several transportation operations have attempted to address the special transportation needs of certain segments of the older population. The Independent Transportation Network (ITN) in Portland, Maine was established to enhance the mobility of elderly persons in small communities. The ITN has been more ambitious than most other services in addressing customer satisfaction issues of acceptability, accessibility, adaptability, affordability, and availability. ITN offers a range of demand-responsive services to a broad spectrum of older riders. A key feature is that ITN offers a high level of consumer choice regarding service levels, trip costs, and payment options. The ITN has been consciously configured as a service to meet the travel needs and desires of seniors that are not being met by other means (10). Also, the system's objectives are highly consumer-oriented: ITN's stated objectives include helping seniors maintain their mobility, dignity, and independence without compromising safety.

The ITN is a non-profit membership organization that uses automobiles driven by both paid staff and volunteer drivers. Trips are available to persons 65 years of age and over and visually impaired persons. There are no other restrictions on eligibility for services. Services are available 24 hours a day, 7 days a week, 365 days a year with no restrictions on trip purpose.

Among this program’s innovations are the following features:

- Services are demand-responsive, from any origin to any destination, for any purpose, within the service area. Services are available throughout the day and night.
- The system intends to achieve financial viability through a combination of fares and donations, and does not depend on public subsidies.
- Customers become “members” of the ITN. Seniors prepay into their own account in advance of travel.
- There are three forms of service -- regular service, errand service, and night rides -- with different costs for each. Services are paid for on a per-mile basis.
- Fares vary according to the level of responsiveness. Customers receive discounted fares if they call 24 hours in advance and/or share rides with others.
- A variety of innovative payment plans are in place or proposed, including trip cost sharing by merchants visited by the riders and trip cost sharing by professionals visited by the riders.
- The system relies heavily on volunteers for drivers and other positions.
Riders are involved in a variety of research programs that test and evaluate service components. The system emphasizes the dignity and desires of the participants.

The strength of the ITN is that it has reconfigured the usual transportation system components into an unusual and attractive combination of business practices that are highly oriented to the specific needs of older persons.

**APPROACHES TO NEW SERVICE PATTERNS**

Transit agencies wishing to respond to the changing needs and demands of tomorrow’s older persons will need to reconfigure their operations and services; traditional responses will not be considered responsive. New ways of conceptualizing and providing transportation services will be needed. Better transportation services for older persons will need to address both the mobility preferences of older travelers and the challenges to providing these improved services that have been identified by transit industry personnel. (1)

Fundamental changes to transit services are needed in five areas:

1. **Consumer Orientation.** Future customers will gravitate to those services that most closely fit their specific demands. Following the lead of consumer-oriented industries like package delivery services, personal transportation services will need to focus on tailoring travel options to the wishes of individual customers. The primary focus thus shifts to the trip instead of the travel mode. Demand-responsive services will be highly favored, as will services that emphasize customer comfort.

2. **Agency Responsibilities.** As is already happening in Europe, many agencies that now provide transportation should embrace new paradigms for public transportation services. This means shifting their focus to mobility management, and organizing but not operating public transit services. Contracts for various types of services with multiple kinds of service providers could provide different kinds and levels of service for differing travel needs. Advanced transit services will be seen primarily as travel facilitators, not service providers.

3. **Customer Choice.** Older travelers will demand many more travel options in the future. Multiple service types at varying prices will be needed. Recognizing that no one solution fits all travel needs, heavy emphasis on one or two modes of travel will be replaced by more travel options within an overall family of services. High levels of responsiveness, speed, comfort, and flexibility will command higher prices; trips reserved in advance with more scheduling dictated by the operator than the consumer will command lower prices.

4. **Fare Strategies.** Future transportation operators should focus on full cost recovery for the trips that they provide; non-operating agencies could assume responsibility for providing subsidies for those riders deemed to need subsidized trips. Electronic fare payments will predominate.
5. **Advanced Technologies.** Consumer-oriented technologies can provide real-time information about when vehicles will arrive to pick someone up and how long trips may take. Low-floor vehicles should be emphasized, as should non-cash transactions.

In meeting the needs of older travelers of the future, there are roles for all of today’s familiar transportation modes and probably some that have not yet been designed. One approach would be to offer a wide variety of services which could then be matched closely to the individual needs of individual travelers, with people of the highest level of independence served by the least tailored services and people with specialized needs served by the most specialized transportation services.

Under such a multi-modal, multi-service approach, large vehicles operating on fixed routes and schedules may still serve the most trips and most persons with high-volume routes and major activity destinations. Service Routes and feeder services, with multiple stops in small areas like neighborhoods, will grow in number and demand, serving some of the more specialized needs. A strong role for taxis and paratransit services will develop as these modes change to meet increased demands for quality service and flexible responsiveness and pricing. Special services operated by human service agencies will continue to address special client needs. Services provided with volunteers will assume an even larger role in responding to unique needs of travelers for whom other services are not cost-effective. For people who are frail and need the highest level of personal assistance, escorted or medical services may best meet their needs. To the extent that all of these components can be managed and coordinated by one central office, the chances for high-quality, cost-effective services rise dramatically. Important features of this multi-modal, multi-service concept are that all modes are working together, that many choices for travel exist, that levels of service can match the specific needs of particular people or individual trips, and that some people might use one mode for one trip or kind of trip and use another mode for other trips with differing travel needs.
SEVERAL INSPIRING EXAMPLES

Innovative transportation services are beginning to appear in many communities. Several of these are shown in Table 1, but there are many other examples (1). From specialized services operated for human service agency clients to public and private paratransit operations to major transit authorities, new service types are being provided from the smallest to the largest communities and in foreign countries as well.

Table 1:
EXAMPLES OF INNOVATIONS
AND SITES WHERE THEY NOW OCCUR

<table>
<thead>
<tr>
<th>Innovation</th>
<th>System</th>
<th>Locality</th>
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<td><strong>Customer Orientation</strong></td>
<td><strong>Fort Worth Transit Authority</strong></td>
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<td>Demand responsive transit</td>
<td>Mountain Empire Older Citizens</td>
<td>Big Stone Gap, VA</td>
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<td>Tailored services</td>
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<td><strong>Agency Responsibilities</strong></td>
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<td><strong>London, England</strong></td>
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<td>Non-operating agency</td>
<td>Port Authority of Allegheny County</td>
<td>Pittsburgh, PA</td>
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<td>Contracts for service</td>
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<td><strong>Customer Choice</strong></td>
<td><strong>Independent Transportation Network</strong></td>
<td><strong>Portland, ME</strong></td>
</tr>
<tr>
<td>Multiple services and fares</td>
<td>AB Uppsalabuss</td>
<td>Uppsala, Sweden</td>
</tr>
<tr>
<td>Family of services</td>
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<td></td>
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<tr>
<td><strong>New Fare Strategies</strong></td>
<td><strong>Independent Transportation Network</strong></td>
<td><strong>Portland, ME</strong></td>
</tr>
<tr>
<td>Multiple copayment sources</td>
<td>Transportation Reimbursement and Information Project</td>
<td>Riverside, CA</td>
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<tr>
<td>Riders contract with volunteers</td>
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<td><strong>Advanced Technologies</strong></td>
<td><strong>Valley METRO</strong></td>
<td><strong>Phoenix, AZ</strong></td>
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<td>Low-floor vehicles</td>
<td>San Francisco MUNI</td>
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<td>Real-time arrival notice</td>
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CONCLUSION

Increased mobility could create substantially more independence and freedom for many older persons, and is likely to help reduce overall social costs of caring for older persons. Public transit agencies could play an expanded role as future transportation providers by offering improved mobility options for seniors. The improved mobility options for seniors would benefit many other
non-senior riders as well. The key improvements desired by older travelers and agreed as important by most industry professionals are as follows:

- Reliable departure and arrival times;
- Door-to-door service;
- One central number to call for “one-stop transportation shopping”;
- Reduced walking distances to fixed-route bus services;
- Flexible service available on demand (no 24-hour waits for trips);
- Comfortable vehicles and waiting areas;
- Connections between a wider range of origins and destinations; and
- Services available during more hours of the day and week.

These improvements qualify as "universal design" enhancements; they appeal to anyone who rides transit, not just the elderly.

Achieving these improvements will not necessarily be easy. From the industry perspective, the major problems in achieving these ideal attributes are lack of funding, the press of other responsibilities, and a reluctance to embrace service changes.

Long-term approaches to meeting a large proportion of the travel needs of tomorrow’s older persons will need to focus on reliable door-to-door services. Transit industry professionals often view such services as excessively expensive. Ways of addressing this concern are to increase the revenues from such services, employ cost-cutting measures, increase the productivity of such operations so that per-trip costs are reduced to a reasonable level, or to allow other transportation providers to dominate the market for trips for older persons.

To meet future travel needs of older persons, transit agencies will have to function more as customer-oriented mobility managers than as system-oriented service providers, offering a much wider range of services at a much wider range of prices than we see today. Three key changes need to be made:

1. Public transportation needs to be perceived as a customer-oriented and friendly industry. This perception is lacking in the minds of many seniors in the year 2002.
2. The concept of fitting the service to the needs of the customer — instead of fitting the customer’s needs to the service — needs widespread adoption within the transportation industry.
3. Finally, there are many particular submarkets of older riders, which means that no one form of transportation service can possibly benefit all these riders. Understanding this may be one of the most important keys to offering improved public transit services for older persons in the future.

There is an enormous market of unmet needs in the area of elderly transportation. Transit agencies that successfully meet those needs will be rewarded with increases in ridership, community support, and revenue. The number of potential elderly transit passengers will be increasing rapidly over the next 30 years, meaning that improvements and preparations made today will become far more important as the years pass. Currently operating innovative services demonstrate that, with appropriate public support, necessary improvements can be made to serve much larger numbers and proportions of the travel needs of older persons than are now served by public transportation.
An important finding of this research is that the travel needs and preferences of older persons have strong similarities to those of other travelers. Real improvements are needed to make public transit more attractive to older persons, but the improvements that make public transit more attractive to older persons will also make transit more attractive to riders of all ages.
ACKNOWLEDGMENTS

This paper is a result of TCRP Project B-19, *Improving Public Transit Options for Older Persons*. The author is grateful for the efforts of the other key staff members on that project, Adam McGavock, Charles Nelson, and Kit Mitchell, for their assistance in the project. Dianne Schwager of TRB provided valuable direction, support, and guidance for this project, and the B-19 Project Panel contributed much advice and support. The time and assistance of members of focus groups of older persons and transportation professionals was also of great assistance to this project.

REFERENCES

Appendix D

Mobility, Mobility Decline, and Available Interventions: The Good, the Bad, and the Ugly

Richard A. Marottoli, MD, MPH

What does it mean to be mobile and to face the difficulty of losing some or all of that mobility? What do we mean by mobility and what factors contribute to its decline? Is this decline inevitable or can we do anything to alter its course?

As we age we face a number of obstacles and challenges to remaining mobile. Most definitions of “successful aging” include some element of how well we are able to overcome or circumvent the obstacles that inevitably will come along as we age. Several things are likely: we will not be as strong, move as nimbly, see as sharply, or think as quickly as we once did, but these impediments need not be severe nor interfere with our enjoyment of activities and life in general. In addition, there may be things we can do to minimize the negative effects of these changes.

Mobility, in its simplest sense, is the ability to get from one place to another. For practical purposes it is often divided into in-home and out-of-home
mobility. In-home mobility involves the ability to transfer (e.g. getting in and out of a chair or bed) and moving around short distances, either by walking or using a device such as a wheelchair. Out-of-home mobility involves these same elements but over larger distances and is typically accomplished by walking, driving, or using other forms of transportation. While walking and driving, as well as in-home and out-of-home mobility, are intertwined in many ways, for the purposes of the subsequent discussion we will focus on the factors contributing to, and consequences of, driving cessation and its effects on out-of-home mobility.

Driving is an essential element of out-of-house mobility in most areas of the developed world and especially in the United States. But there is more to driving than just its ability to get us from one place to another. It represents freedom, autonomy, independence, and control. Our view of driving may change across the lifespan, but it remains essential to our ability to stay connected to other people. As the prospect of the loss of the driving privilege looms on the horizon, we fear the potential effects that will have on our daily lives and the deeper meaning of that loss: our freedom, our autonomy, our sense of “self”. I never fail to be impressed by the power of this message; even in talking with very cognitively impaired patients who understand little of the details of their underlying disease, they uniformly understand the effect of that disease when it translates to their no longer being able to drive.
In reviewing the literature on the factors leading up to the decision to stop driving and the consequences of doing so, one theme is clear: the decision to stop driving is not made in a vacuum. There are often several contributing elements that taken together prompt a decision to limit or stop driving. These same elements, in their own right, may also contribute to the common consequences of driving cessation, increased depressive symptoms and decreased participation in out-of-home activities. However, if you statistically adjust for these factors, and for the other outcome (depression or decreased activity participation), driving cessation has an important independent effect on the development of depressive symptoms and decreased activity participations.¹,²

The factors contributing to the decision to stop driving vary somewhat depending on the population studied, but there are a number of common features identified in the literature. The factors most often identified are advancing age, female gender and declining health. The latter includes limitations in functional status, recent hospitalizations, and the presence of medical conditions such as neurological or vision disorders. Socioeconomic factors have also been linked to driving cessation including having less income or less need (not working, living in urban environments, having available alternative sources of transportation).³-⁷ It has also been shown that the more of these factors that are present, the greater the likelihood of driving cessation.⁷
As noted above, stopping driving can lead to a number of negative effects. The most commonly studied of these are depressive symptoms and out-of-home activity participations.\textsuperscript{1,2,8} In a study of 1316 community-living elders age 65 years and older followed prospectively for six years, driving cessation was among the strongest independent predictors of increased depressed symptoms and decreased out-of-home activity levels even when adjusting for other health and socio demographic factors that might influence these outcomes.\textsuperscript{1,2} Even if one of these outcomes was included in the analysis (i.e. depressive symptoms or activity participation), the effect of driving cessation on the other remained statistically significant. A recent review article described studies that found additional negative consequences of driving cessation, including effects on independence, spontaneity, personal identity, and life satisfaction.\textsuperscript{9}

Perhaps even more worrisome is that these negative effects may have further consequences of their own that adversely affect the health and well being of older individuals. There is a growing body of evidence that depressive symptoms and decreased activity participation can contribute to further declines in functional status, quality of life, and mortality. In the same population described above, participation in social and productive activities, even those that involved little or no physical activity, was independently associated with lower mortality risk even after adjusting for relevant health and sociodemographic factors.\textsuperscript{10}
One interpretation of these findings is that the factors leading to driving cessation set in motion a series of events that represent a downward spiral that leads to further declines in function, social isolation, and, in some cases, death. This same chain of events, however, offers many opportunities for intervention that may disrupt, and even reverse, this spiral. All the risk factors for driving cessation have potential interventions available and it is possible that if identified early enough, and interventions or adaptive strategies initiated, people may continue driving safely for longer periods of time.

For individuals who must stop driving because interventions are ineffective or not available, it may again be possible to intervene by monitoring closely for depressive symptoms and treating them if they appear. Similarly, identifying other approaches that allow for participation in out-of-home activities, such as the availability of other sources of transportation, may forestall some of the negative effects of declining activity participation.

The challenge is that our health care, social support, and transportation organizations as currently constituted are not well equipped to deal with the entirety of this issue. Traditionally they focus on one element or compartment. As a society, we need to work toward identifying approaches and systems that bridge these organizations and fields so they can work together more effectively to
identify individuals at risk and intervene to maintain or restore their mobility when possible.

Along these lines, a number of interventions can be conceived to extend safe driving and out-of-home mobility. A detailed assessment of medical conditions and functional impairments may lead to interventions to enhance driving safety, as suggested by recent studies of interventions for cataracts and physical impairments. Planning should be undertaken at the first signs of difficulty for potential future transportation needs of older individuals who may eventually need to stop driving. The creation of positions for transportation planners or mobility managers may help people navigate the transportation options in their community, identify alternate sources, and ease the transition to driving cessation. These people would help older individuals to bridge the gap among the health care, social support, and transportation systems, much as case managers do for other aspects of health care. Communities can also begin to plan for the needs of their aging population, developing a range of acceptable transportation options to encourage people who need or want to limit or stop driving to do so and placing a sufficient number of senior centers close to the populations that would use them. The goal of these interventions is to allow people to drive as long as they are safely able to do so and to identify appropriate transportation options that allow them to maintain their mobility, activity participation, and quality of life as much as possible.
Richard A. Marottoli, MD, MPH, a geriatrician, is an Associate Professor of Medicine at Yale University and Chief of Geriatrics and Extended Care at the VA Connecticut Health Care System, his research interests include approaches clinicians can use to identify drivers at increased risk for driving difficulties, interventions to decrease risk, and strategies for helping drivers, families, and clinicians discuss this issue and ease the transition to driving limitations or cessation when necessary.
References


9. Harrison A, Ragland DR. Consequences of Driving Reduction or Cessation for Older Adults. Trans Res Record 2003; 1843: 96-104.

FEDERAL PROGRAMS FOR THE TRANSPORTATION-DISADVANTAGED
Personal Transportation
by Katherine Freund

The recently released General Accountability Report, *Transportation-Disadvantaged Seniors*, prepared for the Chairman of the Senate Special Committee on Aging, evaluates existing federal programs designed to provide transportation for the poorest and neediest older Americans. Defining “transportation-disadvantaged” seniors as “those who cannot drive or have limited their driving and who have an income constraint, disability, or medical condition that limits their ability to travel,” the report concludes, as its subtitle suggests, that “efforts to enhance senior mobility could benefit from additional guidance and information.”

The GAO determined that federal programs are not meeting certain types of needs, including “(1) transportation to multiple destinations or for purposes that involve carrying packages, such as shopping, for which the automobile is better suited than other alternatives; (2) life-enhancing trips, such as visits to spouses in nursing homes or cultural events; (3) trips in non-urban areas, especially for seniors in rural communities, where alternatives to the automobile are less likely to be available and special transportation services are limited.”

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1 GAO
2 GAO, P. 4.
The GAO report is helpful, as far as it goes. However, because the GAO was charged to look only at the mobility needs of transportation-disadvantaged seniors, and further limited to an evaluation of existing federal programs, it was unable to address the safety and mobility needs of the majority of aging Americans whose health and income status place them beyond the reach of today’s federally funded transportation programs. The GAO report was also unable to look at the vast array of private resources available to address senior mobility needs or at policies designed to create incentives or reduce barriers for the use of those resources. A broader look at senior transportation, beyond marginal improvements to existing policies and programs, may improve services for seniors across all socio-economic groups.

A FRAMEWORK FOR SENIOR TRANSPORTATION

Resources to pay for rides are only one part of the senior transportation equation. Figure 1 shows transportation reduced to its primary elements—resources and logistics, and its primary forces—technology and policy. In the context of consumer choice, all transportation comprises these four components, balanced in a dynamic relationship wherein a change in one creates a corresponding change in one or more of the others.
RESOURCES

However a ride is delivered, the resources to pay for it must be either public or private. If they are public, they are necessarily scarce, because they are acquired involuntarily through taxes, and the process though which they are dispersed involves public policy. Private resources, whether personal or corporate, are expended as a consumer choice or as a gift, either personal or charitable.

Juxtapose this simple explanation with an understanding of how people spend private resources on transportation in this country and it will become apparent that addressing senior transportation needs by considering only public resources unnecessarily

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3 TRB chapter (amended by author)
limits available options. In 1998, for example, personal expenditures for transportation accounted for $675 billion, five times greater than government expenditures for all roads, highways and transit systems. At the household level, 17.9 percent of the average household budget was for transportation, second only to housing at 19 percent. 4

Are seniors less able to bear this expense than others? The median income for households headed by someone 65 or older was $34,484 in 2000, and the average cost to operate a 1997 American automobile was $3,687, or 11 percent of household income. 5 While we can, and should, justify the use of public resources to pay for the transportation needs of disadvantaged seniors, it does not follow automatically that those who cannot drive cannot pay. Data from the 2000 census show 9.9 percent of the over 65 population fell below the poverty line, compared to 12.4 percent of the population as a whole, and contrasted with 16.1 percent of related children who fell below the poverty line in the same year. Older Americans may be in a very good position to contribute to the cost of their own transportation.

Logistics

There are two logistical options in transportation: bring the person to the vehicle or bring the vehicle to the person. The first option is mass transportation and it achieves efficiency by using high occupancy vehicles and bringing people together at one location on a schedule. Mass transit as a logistical solution gives us train stations, airports and ferry terminals. The second option gives us personal transportation—cars, bicycles, horses, walking, etc. Personal transportation can increase the cost of a ride because it is labor intensive. However, the labor cost can easily be hidden when the operator of a

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4 Transportation policy project
5 AARP
vehicle is also the passenger, as is the case in bicycles, walking and automobiles. When older people who have depended on automobiles all their lives limit or stop driving, the hidden cost of labor surfaces, since the mode still works for them, but they are unable to provide their own labor. Indeed, because of special needs associated with aging, they may need the car more than ever.

Because three out of four seniors live in rural or suburban communities that lack the density for traditional mass transit, and because they often have functional impairments or other special needs, seniors need the vehicle to come to their door. They are unable to wait at bus stops in inclement weather and they are unable to spend long periods of time riding in a vehicle. Frequently, they need personal assistance getting into or out of a vehicle, carrying packages, navigating stairs, doors or seatbelts, or folding a walker or wheelchair. Senior transportation is not a ride; it is a ride and assistance. Senior transportation is expensive.

Technology

Of the three forms of technology—mechanical, energy and information—it is the third that holds the promise of efficiency in senior transportation. Mechanical technology produces mode (train, boat, airplane), while energy technology provides fuel (fossil, wind, solar). But information system technology and the intelligent transportation systems it is only beginning to provide hold the promise of the future. Historically, there has been a close relationship between communication and transportation. When the tracks were laid for the transcontinental railroad, the telegraph lines were strung on poles along the way. Sometimes the lines were tossed through the tops of trees to keep pace, so

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6 Rosenbloom
importance was communication to progress. All reservations and arrangements for rides of any kind depend on communication, whether by telegraph, telephone, internet or global position satellite.

To this traditional use of communication technology—connecting passengers with modes to arrange rides—may now be added the dimension of computerized calculation of routes through geographic information systems (GIS), a whole new use of information. It allows vehicles to respond rapidly and efficiently to consumer demands and brings transportation services closer to the modern notion of travel and communication in any direction, at any time. In addition to routing and communication, information technology may create efficiency in transit resources with innovative payment collection through smart cards or electronic toll collection, to name a few commonly accepted practices of the past few years. For seniors, passive technology is especially important, so they may benefit without the impediment of active participation in the process.

**Policy**

The four classic policy responses are: (1) do nothing; (2) regulate the problem; (3) publicly fund the solution; and (4) provide incentives (or remove barriers) for private solutions. The days of doing nothing about the safety and mobility problems of seniors are over. Regulating the problem—screening older drivers—is inevitable, however problematic, for scientific as well as political reasons. But regulation, even in a perfect world, addresses only the safety problem; if anything, it diminishes the mobility of older people.

Publicly funded solutions have been the norm and they will always be an essential alternative for transportation-disadvantaged seniors. The greatest need for an...
alternative to the private automobile, however, will come at a time when the tax burden to fund Social Security and Medicare is heaviest. Future alternative transportation costs for seniors are estimated to be between $572 billion and $2.2 trillion by the year 2030 (not adjusted for inflation)\textsuperscript{8}. These estimates are based on a set of assumptions generally accepted by the research community that: 1) 25% of the \( \geq 75 \) population will need some form of alternative transportation; 2) each ride will average about $15 to deliver; and, 3) people will require four to sixteen trips a week. If society relies only upon public resources to meet this transportation need, it is likely to provide only rationed or subsistence transportation services.

Creating incentives for private solutions is a policy technique that has met with extraordinary success in other areas of public policy. For example, by allowing interest on a home mortgage to be a tax deduction, the government has preserved and protected the built environment, increased housing stock, supported families, and boosted the construction, real estate and banking industries. By encouraging people through tax incentives, to save for their own retirement with Roth or traditional Individual Retirement Accounts, the government steers people toward planning for the day when they will stop working and need resources to pay for their own needs. No such policies exist in personal transportation planning, at the state or federal level, even though we now know that men outlive the decision to stop driving by 7 years and women outlive it by 10 years.\textsuperscript{9}

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WHERE DO WE GO FROM HERE?
Volunteer Transportation Alternatives

Across the country, many communities have already responded to the need for more senior transportation by producing volunteer transportation services. For myriad reasons, volunteers are a logical part of the senior transportation solution. First, they typically provide their own automobiles, the vehicle of choice for seniors who need a ride. Second, volunteers are more than willing to provide the kind of assistance elders require. Time spent carrying packages, folding walkers or offering a supportive arm are all activities that enhance both the volunteer and the passenger experience. Third, as a logistical solution, volunteers are heaven sent, able to leave from their home or office at various times of the day, to cover a ride or two, before returning to their own busy lives. Using volunteers helps to solve one of the classic transportation problems—peak demand. Volunteers are an efficient way to expand capacity during peak demand periods without unreasonably adding to capital or operating expenses.

Volunteers are a scarce resource, however, and most transportation services use them very inefficiently, matching one volunteer to one passenger, then asking that volunteer to remain as an “escort” for the duration of the ride. For very frail elders unable to travel alone, escorts are sometimes necessary, but for seniors seeking a ride, and nothing more, a volunteer who remains for an entire trip may be an incursion of privacy. The hidden reason volunteer transportation services use the one driver/one rider approach, however, is that it is a logistical solution. If the transit manager cannot calculate how long it will take a volunteer to get to the next senior who needs a ride and return in time to pick up the first, second or third senior, the simplest most effective
solution is to keep the original rider and river together throughout trip. Instead of delivering three or four rides in three hours, a volunteer delivers one. The price of this low-tech approach is very inefficient use of scarce volunteer resources. Here, then, is an excellent example of how information system technology—in this case a GIS system and a database—can be used to create efficiency.

The most commonly mentioned barrier for volunteers is insurance. Policy varies from state to state, but the issues are the same: fear that an insurance carrier will raise rates if an accident occurs, fear that a rider will sue a volunteer, fear that an insurance company will prohibit a volunteer from driving altogether. Some states have progressive policy in this area. Maine, for example, has a law that prohibits insurance companies from raising the rates for an individual who uses a personal vehicle to volunteer. But there is great room for clear and progressive policy at the state and national level in this critical area. It is an excellent example of how public policy can be used to remove barriers to the use of private resources to address senior transit needs.

Sustainability is another key issue for volunteer transportation services for seniors. One study found that of 236 supplemental transportation programs surveyed, 42 percent named insufficient resources as the most difficult problem they faced. Ironically, 69 percent of respondents in the same survey reported that they charge no fees.\textsuperscript{10} This hints at another hidden problem in senior transportation—willingness to charge. For government funded programs designed to serve the transportation-disadvantaged, policy that prohibits fares is justifiable and appropriate, but the patronizing and old-fashioned “poor dear” approach to senior transportation may also be at work here. Millions of seniors who limit or stop driving wish to do more than visit the doctor or the

\textsuperscript{10} Beverly Foundation
supermarket. Like everyone else, they go to the library, the shopping mall or the homes of friends and relatives. They exercise, get their hair done, attend concerts, volunteer in their communities and vote. They do not need an escort for these activities. They need a ride, and they are willing to pay.

**Looking Creatively at Private Resources**

As the need for and cost of alternative transportation for seniors increases in the coming years, it is well worth the effort to look at resources in many forms. While dollars are the most liquid and obvious form, resources may be in-kind labor (volunteer drivers), in-kind equipment (vehicles and office goods), and in-kind services through collaborative community arrangements, such as volunteer recruitment.

The more creatively communities view and access resources, the more service they will be able to provide. Using private resources for those able to pay helps to preserve public resources for transportation-disadvantaged seniors. One transportation alternative, the Independent Transportation Network®, has developed an innovative program in which seniors who stop driving can trade their automobiles for rides in the service ([www.ITNinc.org](http://www.ITNinc.org)). The program is so successful, legislators in Maine are looking for ways to change public policy so the non-profit transportation service does not run afoul of laws regulating used car dealers. Here is an example of using public policy to remove barriers to the use of private resources to pay for personal needs, at no cost to the taxpayer.

Other ITN® programs use information systems management to store volunteer driving credits, or Transportation Social Security, to pay for future transportation needs. Electronically stored credits become transportation equity and may also be donated to
family, friends or the Road Scholarship Program™ for low-income seniors. Collaborative relationships, in which municipal governments help to recruit volunteer drivers through the Community Road Scholarship Program™, earn transportation credits for low-income seniors without using taxpayer dollars.

**Recommendations for Future Senior Transportation Policy**

American consumers prefer to travel in private automobiles, and seniors are no exception. Indeed, seniors take 90 percent of their trips in cars and walk when they cannot ride (8 percent of trips). Only 2 percent of trips are taken by other modes, including public transportation.¹¹

Since most senior transportation is personal, and private, the door is wide open for incentives for private solutions through policy that encourages people to do what they already want to do. Remembering the dynamic relationship between resources, logistics, technology and policy, policy makers can help to create viable, sustainable, practical, consumer-oriented solutions to accompany information campaigns designed to facilitate the transition to alternative transportation for diminished capacity older drivers. Areas for policy action include:

- Resources—remove barriers to volunteerism; create incentives for the use of personal resources; include all forms of resources, such as personal automobiles

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- Logistics—consider senior transportation needs in land use policy, such as the location of health care facilities; include a “transportation impact statement” in all senior-oriented development.¹²
- Technology—seek the cost effective use of information system technology in resource management of all kinds, whether it is volunteer effort, community support, communications, or operations
- Policy—seek policies that support both marginal improvements to existing systems as well as system-wide, paradigm shifts that make way for the future

Above all, transportation planners and policy makers must think beyond publicly funded solutions to access the vast resources that senior consumers are willing and able to pay for transportation that meets their needs.

¹² Sandi Rosenbloom
Appendix F

Elderly Issues in Transportation

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Introduction

The United States faces a coming revolution in the planning, design, and operation of its surface transportation systems, driven by its rapidly growing population of persons older than 65. Health and medical advances have made it possible for people to live longer, and the baby boomers are moving toward their retirement years. The 2000 Census found that about 12.4 percent of the national population of 281,421,906 persons, or almost 35 million people, was age 65 or older. Population projections prepared by the U.S. Census Bureau anticipate that, even as the United States continues to experience population growth, a continually greater percentage of that population will be elderly. It is estimated that, by the year 2030, nearly 20 percent of the total national population, or about 70.3 million persons, will be age 65 or older. This represents a doubling of the total elderly population over only three decades. Moreover, there are presently more than 25 million people age 70 years and older in the United States. In 2000, this age group made up 9.1 percent of the total U.S. resident population, in comparison to 8.5 percent in 1990. From 1990 to 2000, this older segment of the population grew nearly twice as fast as the total population (according to the National Highway Traffic Safety Administration (NHTSA) “Traffic Safety Facts 2001” DOT HS 809 475). The accommodation of the mobility needs of this large and ever growing segment of the population present major challenges for the transportation planning profession.

Knowledge and understanding of the dimensions and characteristics of the challenge has expanded dramatically over the past decade through targeted research and limited program implementation and demonstration. In 1989, the Transportation Research Board (TRB) published Special Report 218, a compendium of original research papers on older person safety and mobility issues. More recently, TRB, with funding from the NHTSA, commissioned another set of papers to update Special Report 218 and provide a progress report. These 19 papers, a large number of focus groups, an ongoing professional dialogue, a national agenda developed by Eberhard and Trilling (NHTSA) and other information sources (e.g., Aging and Transport: Mobility Needs and Safety Issues, OECD, Paris, 2001), and a report issued by the Executive Committee of the European Ministers of Transportation, have further expanded the knowledge base regarding the safe mobility of older persons.

A question of interest to Congress, as well as the highway and traffic safety and transportation planning communities, is: What are the safety and mobility implications of a burgeoning older population? There is a widespread assumption that doubling and, in some age groups, quadrupling the number of potential older drivers implies there is a...
safety nightmare on the horizon. Furthermore, recent history already shows that a larger proportion than ever before of older Americans will be licensed to drive and that they will drive more miles than previous elderly generations. Between 1985 and 1995, the nation experienced a 22 percent increase in the number of licensed drivers. The number of licensed drivers among those age 70 and older has increased by almost 50 percent (Hu, 2000). The 85 years and older age group is growing the fastest in terms of the proportion of the total age cohort who possess a valid driver’s license.

Thus, not only are the absolute numbers of elderly persons becoming ever larger, but older persons are more mobile today than in the past. “Between 1983 and 1995, older Americans increased their travel activity on every index: they made 77 percent more vehicle trips, spent almost 40 percent more time driving, and drove 98 percent more miles than they had in 1983. They also increased the numbers of trips made in private vehicles by 13 percent and increased all trip lengths by 11 percent. In fact, older people had the largest increase of any age group on almost all these indicators” (Rosenbloom, 1999).

There is every reason to expect this trend to continue. However, exposure alone will not provide a complete analysis of the safety impact. It is also necessary to take into account some basic facts about older driver and passenger safety. With increasing age, older persons often find driving more difficult, as a result of vision problems, cognitive limitations, medication side effects, slower reaction time, muscular difficulties, disease, and other causes.

Older drivers generally become aware of their limitations and reduce or discontinue driving accordingly, sometimes long before it is necessary (especially in the case of women). They tend to avoid rush-hour traffic, nighttime driving, freeways, and other conditions and roadways that confuse or create discomfort. Yet in many cases, the ability to use options to driving is not readily available to seniors. As noted in the article Transportation and Our Aging Population in the spring 1997 issue of the Volpe Journal, 75 percent of seniors live in suburban and rural areas where the lack of transportation alternatives makes dependence on the use of the private automobile a virtual requirement to the maintenance of personal mobility.

There is a sense that limited mobility options have negative consequences on the quality of life of America’s elders. The effects include depression, reductions in life satisfaction, isolation, and loneliness (Marottoli, R.A., et al., 1995; Cutler, S.J., 1975; and Russell, D.W., et al., 1997). Many assumptions are largely based on data generated from focus groups or other studies of small groups. The picture is far from clear. (The complex relationship between mobility and health is not well understood or researched. During the TRB’s 2002 annual meeting, an entire session was devoted to a discussion designed to develop a framework for qualitatively and quantitatively assessing the effects of the loss of mobility on health and costs to individuals, families, and communities to guide future research and policy.) However, using these studies to develop a picture of tomorrow, there is one common theme: mobility reduction is not the solution to the safety problem that might be generated by greater numbers of older adults taking more trips and driving more miles (i.e., increasing their exposure to potential crashes).

Against this background of a more mobile and growing elderly population, the Standing Committee on Planning (SCOP) of the American Association of State Highway and
Transportation Officials (AASHTO) commissioned a research effort to document the current state-of-the-practice in transportation planning for older users of the transportation system. The primary objective of this work was to assess both the manner in which current highway design and traffic operations practices are accommodating the requirements of elderly drivers, pedestrians, and bicyclists and the way that planning for public transportation services considers the mobility needs of the elderly.

The importance of this effort cannot be overstated. Elderly transportation issues affect each of us in a direct and personal way. The elderly are our parents, our grandparents, and, in the not too distant future, many of us as well. To this end, the existing body of knowledge was brought up-to-date, organized, and summarized to prepare a report that state departments of transportation (DOTs), metropolitan planning organizations (MPOs), transit agencies, and others could use as a guide on how to better integrate the mobility needs of the elderly into the transportation planning process.

### Summary of Findings

The key findings from the research conducted for this project were developed through two principal research activities:

- Telephone interviews with representatives of the transportation planning staffs of 10 state DOTs and nine MPOs; and
- A literature review covering recent reports and studies with direct bearing on elderly drivers.

Staffs at 10 state DOTs and nine MPOs were interviewed to determine what efforts the agencies were undertaking to address the needs of older drivers in the transportation planning process. Each of these agencies was contacted because they were known or believed by the members of the research team to either be active in addressing elderly safety and mobility or located in jurisdictions with a large and growing elderly population. The findings described in the report are thus believed to represent a portrait of the current state-of-the-practice in addressing elderly safety and mobility in transportation planning. The states and metropolitan areas contacted are illustrated in Figure 1.

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Summary of Findings – – – State and MPO Interviews

Each telephone interview included a set of 14 questions that were posed to each agency surveyed. Topics ranged from the extent to which older users had impacted the transportation planning process to specific measures of that impact on programs such as traffic engineering, alternative transportation, and driver licensing. Towards the end of the interview, the agencies were asked to elaborate on their programs and the extent to which they were cooperating and coordinating with other agencies within their jurisdiction or other neighboring jurisdictions on this issue. For the majority of the questions, agencies were asked to rank their existing efforts on a five-point scale, with a rank of one meaning that minimal effort relative to the topic was currently being undertaken and a rank of five meaning that extensive effort relative to the topic underway. While it is acknowledged that this survey method sought to employ somewhat quantitative measures to obtain what in many instances were qualitative assessments of performance, the methodology appears to have been effective in capturing the degree to which this topic is being considered by the organizations that were contacted.

While there were mixed results throughout the categories, the states that gave their existing transportation planning programs the highest ratings relative to the consideration
of elderly mobility issues included Florida, Oregon, Texas, and Wisconsin, in decreasing order of aggregate ratings. Florida stood out in all areas as a leader in planning for elderly safety and mobility; it was clear that the issue is currently being given a high degree of attention throughout the transportation planning process. Among the MPOs contacted, the agencies that gave their programs the highest ratings included the Atlanta Regional Commission (ARC), the Anchorage MPO, and the Maricopa Association of Governments (MAG) in Phoenix, Arizona. MAG appears to be a leader among the MPOs surveyed in terms of its degree of coordination with state and national entities. MAG works closely with AZDOT to plan for senior mobility and safety, and has hosted two national conferences on this topic since 2000.

The ratings received from the two groups were aggregated to determine which areas are currently receiving the most attention in the planning process. Among the states DOTs, the highest rated programs included more visible and easily readable road signage, and driver licensing programs for older driver referral, evaluation, and family intervention. At the other end of the ratings spectrum, driver retraining programs were given the lowest ratings, followed by the consideration of alternative transportation systems utilizing ITS. Many of the states rely in part or completely on private sector firms to provide driver retraining services for their jurisdictions — the most frequently mentioned was the American Association of Retired Persons’ (AARP’s) 55Alive program, now known as the AARP Driver Safety Program. Among the MPOs, the major thrust of their programs was to improve alternative transportation options. Most of the MPOs were involved in administering the Federal Transit Administration’s (FTA’s) “Elderly and Persons with Disabilities Capital Program” (49 U.S.C. 5310) (FTA 5310) for elderly and disabled users. Many of the MPOs had also worked with their corresponding Area Agency on Aging in planning for elderly mobility, and some of the MPOs had even absorbed this function into their organization.

Many of the states went on to describe initiatives that they had taken in this area, or multi-agency groups in which they had participated to plan for elderly mobility and safety. It became clear throughout the interviews that this is an issue of growing importance, as the state transportation planners look at the demographic shift in the populations of their jurisdictions. As can be seen in Figures 2 and 3, the older population of the United States is forecast to greatly increase its number and share of the total population between today and 2025. The elderly population (those 65 and older) is the fastest growing age segment and is growing at rates far outpacing that of total population growth. As more of these older users continue to drive, their diminished cognitive abilities and extended reaction times will need to gain importance in the planning process.
Figure 2.2  Projected Resident Population of the United States as of July 1, 2000

Middle Series

In order to deal with the implications of the anticipated continuing increase in the elderly population, there have been several recent Federal initiatives undertaken to plan for older users’ needs and limitations. One of the more significant activities in the field of transportation planning was development of the Federal Highway Administration’s “Older Driver Highway Design Manual” in 1998, the updated “Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians” in 2001 and the follow-up regional workshops presented by FHWA. Most of the state DOTs surveyed had already participated in these FHWA workshops, and all of those who had participated felt that they had benefited from this effort.
Unmet Needs

Survey participants identified the need for better standards of practice, better communication of information among all levels of government, and better access to resources -- i.e., funding.

Resources from FHWA and FTA appear to be needed at the state and regional level in order to make improvements to the planning practices of state DOTs and MPOs with regard to considerations of elderly mobility, and to implement the changes in infrastructure needed to prepare for the rapid increase in the elderly population.

Improved coordination between the U.S. DOT, state DOTs, MPOs, and local governments appears to be needed to make use of currently existing funds in the most efficient manner possible, and to make sure that maximum benefits are realized from these expenditures.

Better methods for distributing information to the public on transportation programs affecting the elderly are needed to help insure the public has the knowledge to understand the need for new programs and policies.

Further Areas of Improvement

State DOTs and MPOs could better serve their constituencies by creating public access web sites and “one-call centers” to provide better information to the public on transportation options.

FHWA would better serve the state DOTs and MPOs by encouraging more wide spread access to the Older Drivers and Pedestrians design workshops and by more widely publicizing the existence of the “Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians” manual.

State DOTs, MPOs, FHWA, and local governments would all do well to communicate with neighboring jurisdictions and share responsibility for funding to ease budget restraints and increase efficiency.

Summary of Findings – Literature Review

The following is a summary of the key findings from the literature review. In compiling the reports for this review, it was found that there is a diverse and growing body of literature on this subject. The reports chosen for this review were obtained from a variety of studies undertaken at the Federal, state, and MPO level, as well as from studies undertaken to demonstrate the impact this issue is having in the private sector. The recommendations from the reports reviewed in this study can be grouped into the following general categories: Traffic Engineering, Alternative Transportation, Housing and Land Use, Health and Medicine, Driver Licensing, Education and Awareness, Private-Sector Initiatives, and Further Research and Planning.

Improvements recommended in the category of “Traffic Engineering” included the need for better coordination with AASHTO and FHWA to facilitate changes in engineering standards to better accommodate the abilities of elderly drivers; better sign design and
implementation to better accommodate the diminished sensory and cognitive capacities of older drivers; better geometric design at interchanges, at-grade intersections, roadway curvatures and passing zones, and in construction zones; designated turn lanes to help older drivers navigate cross-traffic turns; better traffic enforcement; better promotion of coordinated traffic systems using ITS; and better funding of traffic engineering services at the local level (lighting, signage, and pedestrian considerations) that focus on elderly issues.

Improvements recommended in the topic of “Alternative Transportation” included the creation of “One-Call” Centers; implementation of Intelligent Transportation Kiosks; improvement of bus/vehicle design and interior seating layout; improvement of transit stop facilities and amenities; improvement of customer service; and better utilization of volunteers and community service groups.

Recommendations relative to the topic of “Pedestrian Improvements” included the following: wide, well lit, and safe pedestrian paths; curb descents allowing easy access into crosswalks; the provision of tactile surfaces to warn visually impaired people of changing conditions; audible signals at crosswalks; traffic lights and electronic warning signs at junctions; longer traffic signal timing to accommodate the slower walking speed of older persons; and the installation of median traffic islands to allow elder users unable to completely cross an intersection to safely wait for a second signal to complete their crossings.

Recommendations for improvements in the area of “Land Use and Housing” included the promotion of transit friendly, walkable neighborhoods; locating services used by the elderly closer to residential areas; and the development of an “Elder-Friendly” planning guide for land-use and zoning.

Improvements recommended for the category of “Health and Medical” included implementation of a training program for healthcare providers on how to assess traffic safety risks in older drivers; development of guidelines to assist physicians in making recommendations for the revocation of driving privileges; and creation of physician immunity legislation to remove the threat of lawsuits from physicians making recommendations to licensing agencies for those evaluated to stop driving.

With regard to the topic of “Driver Licensing”, the reports in the literature review recommended the development of driver referral programs; development of driver re-training programs to re-train problem drivers; and development of identification procedures and program intake mechanisms to aid in targeting problem drivers.

The studies surveyed recommended the following improvements in the topical area of “Education and Awareness”: Utilize the FHWA’s “Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians” manual; provide training programs for teaching seniors how to use transit and alternative transport; create single-source information call center; develop educational materials; create a driver intervention program; and develop a regional public awareness/education campaign.

Several “Private Sector Initiatives” identified in the literature review appear to have substantial merit for more widespread application. While admittedly outside the scope of activities possible for most government agencies, recommended private-sector measures...
included designing safer automobiles to provide improved ease of driving and crash protection for older vehicle occupants, and encouraging insurance premium discounts for seniors who complete older driver training courses, such as the AARP 55-Alive course.

The issue of how to better plan for elderly mobility is clearly one where “Further Research and Planning” is called for. Specific areas for further research identified in the literature review included the following:

- Examine, compile, and publish a best practices manual for engineers, planners, and traffic safety personnel detailing successful implementation of “elderly friendly” traffic engineering practices.

- Require explicit consideration of the FHWA Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians in all highway improvement projects.

- Evaluate the most effective mobility services and systems, and provide the means to stimulate their replication.

- Initiate selected studies to support improved public policy decisions, covering such areas as security in transportation; linkage of mobility to health care costs; influence of mobility alternatives on driver cessation; and research to improve the current understanding of the effects of certain medical conditions, functional disabilities, and behavioral limitations on operator performance and crash involvement.

- Initiate studies to determine the role mobility plays in successful aging, and improve data collection, analysis, and dissemination of aging driver information.

- Mobility for older adults should be integrated into planning at all levels: individual, community, state, and Federal. At the community level, MPOs and state planning agencies should more explicitly consider the special needs of older adults. The creation of state and local safe mobility action plans should be encouraged.

- Determine what visual skills are important for safe driving, the extent to which the visual skills crucial for driving are more likely to be perceptual/cognitive skills, rather than sensory capabilities.

- Identify dependent measures to link vision to driving that reflect not only the end result (i.e., a crash) of “bad” behavior (i.e., poor driving skills), but rather the behavior itself.

### Recommendations

Given the findings of this limited literature review and the similar findings and recommendations outlined in the various studies that were examined, it is clear that a more uniform, comprehensive method of addressing the transportation needs of older drivers is necessary. One possible candidate for standardizing highway design and traffic engineering practices in this area would be the wide scale incorporation of the FHWA’s “Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians” manual into all highway improvement projects, particularly since this document
incorporates many of the recommendations made by other studies in its technical recommendations. Further extending the application of this manual and the accompanying workshops would help provide guidance for government officials and transportation engineers at a local level, and make them aware of current initiatives undergoing implementation in this sector.

A similar document, “Improving Public Transit Options for Older Persons” has just been published by the Transit Cooperative Research Program (TCRP) for application to the public transportation sector. The report highlights exemplary programs and provides in-depth recommendations for improving transit programs to increase ridership and divert current elderly auto drivers and passengers from the highway system. This document’s focus on successful programs could also facilitate coordination between similar communities looking for role models in their searches for effective transit program improvements to serve the mobility needs of the elderly.

Conclusions

While most state and local agencies appear to be in the early stages of formulating policies to deal with the mobility needs of their aging populations, important lessons can be learned from the efforts undertaken to date. Increasing coordination and dissemination of information between different agencies with parallel functions has had real benefits at both the state and regional level. While a blanket policy for dealing with the needs of elderly drivers would be unrealistic and hard to implement in the diverse conditions present in different regions of the country, some standardization and guidelines would be helpful to agencies that have only recently begun to plan for older users unique needs and limitations. By following the examples of those state DOTs and MPOs that were surveyed, and using the most effective methods to implement coordinated strategies, state and regional planners guarantee that their jurisdictions will gain the maximum benefit from their efforts.

Current conditions would appear to call for a more coordinated national response to communicate the best, most relevant information to planning staffs at the state and local level. The workshops administered by FHWA to present the Guidelines and Recommendations to Accommodate Older Drivers and Pedestrians appear to provide an excellent vehicle for this coordinated effort, and should be both continued and expanded in terms of their audience. But the provision of improved highway design and traffic engineering practices is only one important aspect of addressing the larger issues associated with elderly mobility. States like Florida provide excellent examples of how to employ interdepartmental cooperation to take into account broader perspectives on this topic, and should be emulated. The same can be said of MPOs closely coordinating with or absorbing the functions of their local Area Agencies on Aging. Overall, there seems to be a growing interest in this topic and with proper guidance, coordination and funding, states and regional governments should have few problems providing safe mobility for their aging populations.
Livable Communities &
Aging In Place:

Developing an elder-friendly community
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Introduction

As the baby-boom population continues to age, the nation must become aware of the challenges that await such a demographic. In ten years, nearly 10,000 people will turn 65 each day.¹ While seniors over 85 continue to become the fastest growing population segment, the nation has yet to adapt to their needs.² Problems of appropriate housing, transportation, health care, delivery and supportive services have become much more apparent as 1 in 5, or 80 million Americans will be termed ‘elderly’ by 2050.³ This unprecedented demand on health, social services and housing accommodations is a unique opportunity that the nation must recognize and begin address.

As members of the baby boom generation reach and pass the retirement age, the United States will witness a dramatic shift of economic and social forces as this segment of the population grows. A recent report to Congress by the Commission on Affordable Housing and Health Facility Needs for Seniors in the 21st Century has deemed the growing needs of the increasing numbers of elderly Americans to be a ‘quiet crisis.’⁴ Although 89 percent of baby-boomers claim they want to grow old in their own homes, many American communities cannot support appropriate housing, social services, and transportation needs for seniors living in their own homes. As the nation turns to increasing assisted living facilities to solve the problem, they fail to see a structure of livability that will benefit all groups and strengthen communities on a broad level. This strategy will allow elderly to live at home longer, significantly increasing the diversity and vitality of a neighborhood and allow more financial and social independence for seniors.

This paper serves to briefly introduce critical issues the Aging In Place initiative will concentrate on. Participants should read each section carefully and understand the key elements of each.

Defining the Problem

People in the United States are living longer. Advances in medicine and health care, more in-depth knowledge of healthy lifestyles and an increase in environmental standards have shaped longevity in humans. The consequences of a prolonged life are multi-faceted. With the senior population rising, challenges in transportation, housing
and health care also dramatically increase. Communities across the United States need to take appropriate steps to prepare for this burgeoning of elders, the result being:

- One-third of senior households are expected to have housing needs;
- Almost one-fifth of seniors will likely have service needs, and existing programs are not well structured to meet those needs.
- With 56 percent of elderly living in the suburbs, and 23 percent in rural areas, the lack of public transportation options will become problematic.

The senior aging process is filled with difficulties. Many barriers prevent older persons from remaining a part of their community and not enough emphasis is placed on developing a realistic, workable strategy to overcome these issues. The process of aging crosses racial, geographic and socio-economic lines to reach millions of people across the nation. While the elderly feels the brunt of these problems, communities on a whole suffer the consequences.

**Housing**

Many older Americans will continue to reside in the home they raised their families, or buy a home in their later years with more than enough bedrooms to accommodate their needs. But as people age, their activities, family composition and financial resources alter. If the majority of older Americans wish to live in their homes, certain modifications need to be considered as their ability to be independent may diminish. Ideally, they should be able to find housing of the type and location that best suits their particular evolving situation. But too often, many seniors go straight from their home to a nursing home or assisted living care facility, and there appear to be few options in-between.

In 2001, there were 21.8 million households headed by persons 65 years or older. Of these, 80 percent were owners and 20 percent were renters. The median family income of older homeowners was $23,409 while for renters it was $12,233. Some of these housing units are in the suburbs and in rural areas where transportation is limited and tends to follow commuter patterns and services are scattered; others are in inner cities where steps and security issues become problems. Elderly property owners will face increasing maintenance or the need to
make modifications to their homes while their own health and ability to cope with these issues is deteriorating. Meanwhile, older renters must deal with public and private landlords who are less willing to make adaptations to meet the needs of older adults. Increased rent may be a problem if alterations occur.

There are many reasons for encouraging older persons to remain in their own homes. The strongest argument is that older adults overwhelmingly report that they want to grow old in their homes and communities. Additionally, providing home and community services that enable older adults to age in place has shown to be the most cost-effective model for aging.

Every year, millions of unwilling older Americans move to institutional facilities prematurely because there are no resources available to help them continue to live at home. The typical cost of nursing home services for an individual is approximately $52,000 per year, compared to slightly over $12,000 per year for home and community based services. This is not only a very expensive way of delivering services, it tends to propel people into that system even though their needs may not require the intensity of nursing home care. Improved assistance programs and housing options that will allow seniors to age in their neighborhoods and remain involved in their communities is crucial.

Transportation

The separation of home and the public realm also produces problems regarding flexible transportation options and fulfilling daily needs. As the baby boomers age, communities will have to come to terms with land use patterns that assume that seniors can drive themselves anywhere at any time just as younger people do. While many urban and metropolitan areas have a variety of public transportation options, the majority of their public systems is not fully integrated or has significant gaps in service and access.

According to the U.S. Bureau of Labor Statistics' Consumer Expenditure Survey, almost 18 cents of every dollar spent by American households is on transportation. Almost 98%
of this expense is owning and maintaining an automobile. The Survey also shows that lower income households (earning between $12,000 and $23,000 a year) spend almost 27 cents of every dollar on transportation; the percentage spent on transportation increases as income decreases. For seniors on fixed incomes, this could mean a choice between owning a car and obtaining necessary health care services.

According to an AARP Public Policy Institute Fact Sheet “Transportation: The Older Person’s Interest,” the elderly use private vehicles more than any other mode of transportation, traveling as passengers or drivers. Even in urban areas where public transit is more accessible and less expensive, private vehicles are still preferred by the majority of older people, and like people of any age, most older people rely on friends or family instead of public agencies for a ride.

Many government and advocacy group policies and programs focus on keeping seniors actively behind the wheel. Public programs are mostly geared toward giving seniors a ride, not toward providing other transportation options. Helping seniors to stay behind the wheel is necessary. Most seniors will tend to travel by car for reasons of health, comfort and convenience. Yet, by continuing to focus on driving, we are deliberately creating places with the built-in necessity for driving, and thereby eliminating options.

Suburban Lifestyles and Aging in place

When baby boomers flocked to the suburbs for their chance at the ‘American Dream,’ they probably never imagined that one day their ability to run their daily errands, chat with friends at a local restaurant, and visit the doctor would depend upon the possession of an automobile and a driver’s license, or upon someone else to drive them there. The same generation that spawned the growth of the suburbs is now dealing with the negative consequences of once innocent choices for a better quality of life. As the boomers continue to age in the coming years, the traffic congestion and separation of land uses that are now inconvenient at best may well become real barriers to community interaction and to the ability to meet the needs of daily life in the future. This will be most apparent for people with low incomes and frail health.

The national conversation on this looming crisis is focused mostly on the provision of services, tax breaks and housing modifications. While such modifications and programs are necessary and useful for many elderly citizens, this focus is treating the symptoms
and not the disease, ignoring the real issue of how to build places where all life transitions are more easily accommodated. Aging in place is more than the ability to remain in one’s home; it is also the ability to continue to function and thrive in one’s community. Combating the disease entails careful attention to physical details of place; in the case of suburban sprawl, it will entail radical surgery to restore community accessibility to meet the variety of needs and situations of the elderly.

**Rural Transportation**

Residents of rural communities face similar challenges to those of suburban neighborhoods, yet with further isolation in many cases. There are often vast distances between destinations; some rural communities being as far as 200 miles away from inpatient medical facilities or the nearest airport. According to the National Highway Traffic Safety Administration, 60% of all traffic fatalities for motor vehicle occupants age 65 are in rural areas, compared to 40% in urban areas. Rural retirement communities will see higher proportions of the elderly due to aging in place, in addition to the migration of older people from metropolitan areas. With this imminent projection of rising numbers of seniors living in rural areas, adequate transportation access must be assessed and implemented within these underserved areas, so older persons can easily access needed services such as stores and medical facilities.

**When Driving is not an option**

Driving is not an option for nearly 7 million Americans aged 65 and older, according to the AARP. The report also states that older individuals are more likely to walk to their destination than to use public transportation. In fact, the Nationwide Personal Transportation Survey revealed that nearly one-fifth of all daily trips made by non-drivers age 70 and older are made on foot. How can we support the option of walking, and how can we make public transportation more accessible and appealing to older persons, especially those for whom driving is not an option?

While a small percentage of these persons never learned how to drive or rarely ever drive, the majority of non-drivers choose not to drive for safety reasons associated with the aging process. Driving also may not be an option for seniors on a fixed income who cannot afford to purchase or maintain an automobile. Issues of fear for personal safety, inconvenience, difficulties in negotiating the system, and accommodations for disabilities are also factors that deter the elderly from using public transportation. Federal, state and local policy should account for those who cannot or
do not drive, and should implement definitive strategies to reintroduce walking and public transportation as real options for more seniors in suburban areas.

One of the most effective policies that can be implemented for affordable and convenient transportation is the concentration of mixed-use development, where public agencies, health care and social service providers, commercial establishments, churches and residential areas are clustered on interconnected and well-designed streets. Another solution is to develop more walkable communities for the elderly. Improved street lighting and larger sidewalks will invite the elderly and community onto the streets. More pedestrians make neighborhoods safer, more sociable and promote healthy walking habits.

**Traffic Safety Services**

As Americans continue to grow older, communities must ensure there are services that will effectively protect them. Most communities have safeguards in position to help citizens with a variety of issues from abuse to traffic safety. A large number of communities also have councils to ensure older adults are not overlooked. Such councils develop partnerships with a variety of judicial and social services to minimize victimization of older adults. These councils can play a major role in improving the ease and safety of transportation for older people.

**Traffic Safety Programs** recognize the difficulties transportation and driving issues pose for older Americans. Poor transportation alternatives and the desire to remain independent keep many elderly people driving.

**Improved pedestrian facilities**

Behind driving, walking is the second most frequented mode of transportation among older people. The pedestrian death rate for persons 75 and older is nearly double that of all other ages. Older adults account for 21 percent total of pedestrian fatalities, but only 13 percent of the total population. In considering changes that occur in the aging population such as reduced visual acuity and slower walking pace, facilities must improved to accommodate all pedestrians. Crosswalk signals should be made brighter and clearer, and the timing should be adjusted to reflect the often slower walking pace, in addition to pedestrian refuge islands on wide, busy streets.
Improved streets and highways
As older people are highly auto-dependent and because they are more easily injured and killed in car accidents, roads need to be safer and easier for them to use. Improvements include better nighttime visibility of signs and pavement markings, intersection design, lighting, and other safety enhancements. While highway improvements are a rather slow, incremental process taking 10 to 20 years, the nation needs to phase in these changes more rapidly in anticipation of an aging society.

From Universal Design to Universal Communities

In recent years, urban design has become a more pressing issue for cities, suburbs and even rural areas. Design issues pertaining to the specific needs of the aging can benefit all people, not just the elderly. Improved street lighting, additional benches, well-maintained sidewalks, increased signage and more time to cross the street benefit all members of a community, including visitors. Seniors often struggle with activities of daily living due to restrictions in mobility, eyesight and other impairments. More street lighting increases safety, increased signage allows older people to feel confident about using public transit, benches allow them to rest while waiting and longer lights assure them pedestrian safety. Modifications of a physical urban environment allow seniors to be more independent in their everyday activities. Additionally, the development of pedestrian walkways, improved street design and accessibility has been proven to aid economic and public interest in the area. While these may seem like elementary design techniques, a majority of communities have not retrofitted their streets for such convenience and safety.

Universal design is expanding from the streets of communities to homes. Builders have begun to devise houses that cater to older individuals, disabled people, babies, and even large furniture. Houses have four-feet wide hallways, a master bedroom and full bathroom on the first floor, door handles rather than knobs and easily reached light switches. There must also be one entry into the house that does not have steps. Entries and exits to the outside must be on the first floor. For the high percentage of people who want to stay in their own homes but may encounter problems in the later years, this solution allows independence and stability for seniors. Assisted transportation can also help seniors travel to and from their home and place of destination. Mobility managers,
varying from organizations that serve the elderly from public transportation operators, to Area Agencies on Aging, to faith-based or community-provided services, can potentially provide more individualized transportation services that accommodate special preferences or the functional limitations of the trip-maker.

**Your Next Steps**

There is a growing imperative for a comprehensive national agenda of rethinking, retrofitting and redesigning our existing cities, housing opportunities and social services so people can age where they feel most comfortable; their homes and communities. Preserving the sanctity of home for the elderly will also cut the national healthcare budget by curtailing the migration to healthcare facilities, as baby boomers grow frail. Communities designed to serve the needs of youngsters, elders and citizens with special physical and mental conditions will be livable for everyone.

As the population aged 65 and over grows, communities should ensure that they are prepared to accommodate this shift in demographics. While there is no single answer for aging because every senior faces unique challenges as they approach old age, there are several areas to highlight. Communities need a system of services that integrates health care, daily living needs, transportation, housing, recreation, social services, and educational, social and cultural opportunities to allow seniors to age in place.

To adopt these principles, the cooperation of local, state and federal officials is crucial, as well as the integration of private sector services into the delivery system for the elderly. Incentives such as tax breaks for developers who build integrated senior housing around public transit facilities will be key in ensuring the success of these strategies. The aging population will only increase in the upcoming years, making this issue inevitable. Communities must understand that in changing their transportation policies, street design, lighting public parks housing opportunities and public spaces, this ‘universal design’ will serve the entire community.
i Alliance for Aging Research <http://www.agingresearch.org>

ii Alexandar, Christopher. *A Pattern of Language*, p. 730


ix Ibid.

x AARP. Transportation: The Older Person’s Interest.” AARP Public Policy Institute Fact Sheet Number 44R. March 2002. Page 1 <http://research.aarp.org.ppi>


xii Ibid.

xiii Ibid.


The Mobility Needs of Older Americans: Implications for Transportation Reauthorization

Sandra Rosenbloom

I. Introduction

In 2000, 35 million Americans, or 12.4 percent of the total U.S. population, were over age 65, and almost 4.5 million (or 1.6 percent of the total population) were over age 85. By 2030, the number of older Americans will more than double; 9 million alone will be over age 85. Almost all of those seniors will have been licensed drivers for most of their lives, including many seniors too disabled to walk far or use conventional public transportation. Seniors in the future will be even more dependent on the car than today’s elderly.

These unprecedented demographic changes have rarely received the attention they deserve because there are so many myths about how most older Americans live. Public policy discussions assume that either elderly people need substantial government assistance and many publicly provided services or they have no unmet needs and require little governmental attention. In fact, most older Americans lead complicated lives that rarely place them on either end of the spectrum. Many older people drive but still face mobility barriers, or they suffer from physical or medical problems but still seek an active community life. Equally important, the elderly are a significant and growing component of many of the transportation problems we face as a nation—from metropolitan decentralization to air pollution, environmental degradation, and congestion—and they eventually suffer disproportionately from those very problems. To address both the mobility needs of the elderly and the important societal problems to which they contribute, we must refocus and redirect a wide range of public policies to respond to the complicated opportunities and constraints older people face today.

The reauthorization of the federal transportation law, the Transportation Equity Act for the 21st Century (TEA-21), presents an excellent opportunity for Congress to respond directly to the diverse mobility needs of the elderly. This brief challenges the easy assumptions that underlie most policy debates on transportation and the elderly, it describes how an aging society adds to a range of transportation problems, and it discusses special approaches and solutions necessary to meet the mobility needs of over 70 million seniors in the coming decades.
II. Demographic Trends with Important Transportation Implications

Both the number of older people and their share of the population are growing rapidly. Across the spectrum, older Americans will both create and face daunting transportation challenges because the majority will live, increasingly alone, in suburban or rural communities that foster a deepening dependence on the private car to sustain their mobility.

A. Population Growth and Characteristics

The number of elderly is growing both absolutely and relatively, as shown in Figure 1. By 2030, more than one in five Americans will be over age 65, and one in 11 of those individuals will be over age 85.3 Compare this to 1970, when less than 1 percent of the population was over age 85. At the same time, fewer younger people are available to pay for or provide the growing service needs of the expanding elderly population.

Older women will continue to substantially outnumber men. Older Americans will also become more diverse; people of color are one of the fastest-growing groups among those over age 65.4 In 1994, roughly one in seven American seniors was from a racial or ethnic minority, and this number will more than double in the next few decades.5

Most of the elderly will be in good health and not seriously disabled. In fact, disability rates have been falling among all cohorts of the elderly for decades, owing to a combination of good nutrition, improved health care, better education, and higher incomes. In 1996, almost three-quarters of older people reported that they were in good to excellent health, and only one-quarter reported being unable to conduct one of nine major activities of daily living.6 Although disability rates increase with age, two-thirds of those over age 85 reported being in good to excellent health. Overall, new generations of older Americans will be healthier for a greater percentage of their lives than those just a few decades ago.

However, a substantial portion of the elderly will eventually face increasing disabilities as they age. Almost 35 percent of those over age 80 in 1997 reported that their disabilities were severe enough to require assistance. Moreover, women and older people of color were significantly more likely to report serious health problems or disabilities. In 2000, over 40

![Figure 1. Projected Growth in Elderly Population](image_url)

Source: U.S. Census
percent of older blacks and more than 34 percent of older Hispanics rated their health as fair to poor (compared with 26 percent of white elders).  
As their degree of disability increases, those over 85, and women in particular, will face several serious constraints with little family assistance. The majority of older women will live alone, some because they have never married, some because they have been widowed or divorced. In 1998, only 55 percent of women aged 65–74 were married; as a consequence, 41 percent of all older women were living alone compared with only 17 percent of comparable men. A 1995 study noted that “while most elderly men have a spouse for assistance, especially when health fails, most elderly women do not.” In fact, most older women will have no relatives or family members to provide support or assistance, given that the 85-and-older cohorts in the upcoming two decades will have had fewer children than any previous cohort of the elderly.  
In addition, people of color, and particularly older women of color, are less likely to have the resources to buy assistance or the services and goods they need as they face mobility problems. In 1997, almost 14 percent of U.S. women but only 7 percent of men over age 65 lived below the poverty level. Older women had a poverty rate almost 50 percent higher than older men, and those who lived alone had the highest poverty rate of all. In fact, over half of older Hispanic women who lived alone or with non-relatives had incomes below the poverty line. In 2000, almost 22 percent of older blacks and Hispanics were poor compared with fewer than 9 percent of elderly whites.

B. Residential Patterns
As Figure 2 shows, almost three-quarters of the older population live within metropolitan areas, and over three-fourths of those live in the suburbs.  

![Figure 2. Percent of U.S. Elderly by Residential Location](source)

This pattern has been intensifying for decades owing to the aging-in-place phenomenon: people remain in the homes in which they lived while rearing their children and holding jobs. According to demographer William Frey, the suburbs aged more rapidly in the 1990s than the nation as a whole. In large measure, this “graing” of the suburbs resulted not from migration in the 1990s, but from residential decisions made long ago.
Frey found that in 2000, those aged 35–54 accounted for 31 percent of the total suburban population and most will likely remain in the suburbs as they grow older. In fact, Census data show that one- and five-year moving rates are lowest among those over age 65 and have been declining for years. Between 1990 and 1995, only 15.7 percent of those over age 65 moved compared with almost 70 percent of those aged 20–29 and 56 percent of those aged 30–39. Moreover, Americans over age 65 today are only one-fourth as likely to move after they retire as were comparable elderly three decades ago.

C. Transportation Patterns

Regardless of where they live, most older people are extremely dependent on the private car, either as a passenger or a driver, and increasingly the latter. One indicator of the growing importance of the private car is the rate of licensing. In 1997, over 95 percent of all men and 80 percent of all women over age 65 were licensed drivers. By 2030, the gap between the sexes will have narrowed substantially given that 94 percent of women aged 45–49 are currently licensed to drive. As result, as Figure 3 shows, those over 65 make roughly 90 percent of all their trips in a car; over 45 percent as the driver of a single-occupant vehicle, and another 43 percent either as a driver or passenger in a vehicle with two or more occupants. Even those over age 85 make 80 percent of their trips by car, driving half the time. In fact, data from the 2001 National Household Travel Survey (NHTS) show that older people make a greater percentage of their trips as drivers than do younger people.

Conversely, use of alternative transportation modes has been dropping rapidly among the elderly for decades. In 1995, transit use for nonwork trips among the elderly was, for the first time, below that of younger people. In 1995, the elderly made only 2.2 percent of all trips by transit. As low as that was, transit use by older people fell by almost 50 percent between 1995 and 2001, when only 1.3 percent of all trips were made by transit.

Although much policy debate about the elderly centers on their possible use of alternative public transit—such as special paratransit services or subsidized taxis—there is little indication that use of these options is large or growing among older people. In fact, taxi use (either private-pay or subsidized service) fell among the elderly from 1995 to 2001, while the use of other subsidized paratransit options was too small to break out in national data. At the same time, there is substantial anecdotal information about the growing use of alter-
native private vehicle modes by the elderly, such as small electric vehicles, motorized scooters, and golf carts.20

Clearly linked to the growing dependence on the car is the growth in the number of trips and the mileage traveled, which have been increasing steadily among the elderly for more than three decades. Of course, whether more and longer trips are desirable is open to question. Most transportation planners and engineers define mobility in terms of the number of trips made, and an increase in trips is considered a positive social indicator.21 However, others contrast mobility to access, or a measure of the ease with which people can access needed goods and services.22 Making more trips or traveling more miles by car may be an indicator not of improved mobility, but of poorer access. At the same time, not all destinations are equal; people both young and old frequently bypass nearby stores, doctors, and religious institutions for preferred services often miles away. In reality, increased travel is a probably a measure of both increased opportunities and increased constraints for older people.

As much as they travel, older people make roughly 22 percent fewer trips than those under age 65. A surprising amount of research refers to this difference, as well as the drop in trips at retirement, as a reduction in mobility.23 This again illustrates the problem of defining mobility as the number of trips made. In fact, the obvious difference between those younger and older than 65 is that the elderly rarely, if ever, make five roundtrips to work each week. The focus on the gap in trip-making between the young and old obscures the fact that the elderly are very active until they reach age 80 or even older; older men take as many as 23 percent more non-work trips and travel 6 percent more miles than men under age 65.

Older women are also very active, but they take fewer non-work trips than younger women. However, this pattern may change as more active cohorts of women age. Given increasing income, education, and job achievement among women over age 40 today, it is likely that future cohorts of elderly women will more resemble men in their desire for an active post-retirement lifestyle, in which travel plays an important role.

There are important variations by race and ethnicity in the travel patterns of otherwise comparable elders. Even when controlling for income and residential location, black, Asian, and Hispanic elders make fewer and shorter trips than white elderly, and generally less often in a car. Moreover, there are greater travel differences between men and women within each of these ethnic and racial groups than there are between the groups or among whites. These patterns may be a complex combination of residential location, current or historical discrimination, and ethnic and cultural differences in attitudes and preferences. Certainly not all differences are problems that require remediation, but they do suggest a need to understand how older people from different backgrounds view travel and access, and the role family members are expected to and do play in the personal mobility of older family members.

Although most older people today drive to meet their needs, an important subset does not. Those living in the central city, older women (particularly over age 75), the poor, those living alone, and ethnic and racial minorities are all less likely to be licensed to drive. Nevertheless, the car is a significant mode of transportation among those who do not drive. In 1995, the percentage of trips in cars (albeit fewer in number) made by those over age 65 without a license was almost as high as licensed drivers. Clearly, older people who do not drive depend heavily on others for rides, and often on other older drivers.24 Thus, one older person losing a license (or ability to drive) may substantially reduce the mobility of several elderly individuals.25

Not having a license makes a substantial difference in the number and length of the trips older people make. For example, in 1995, licensed drivers aged 65–69 made 87 percent more trips than comparable older people without a license. Even at age 85, those with licenses make more than twice as many trips as those without a license. Of course, not all those differences represent transportation problems, given that trip-making is an imperfect measure of mobility and most data conflate those who have never driven with those who gave up driving. Older people without licenses may have located in areas where they did not need to travel as often, they may live near family who bring them goods and services, or they may be too ill or otherwise disadvantaged to leave their homes. However, if increased
trip-making is ever viewed as an indicator of increased mobility, then a portion of the gap between licensed and unlicensed drivers must signify immobility.

III. The Societal Challenges of Aging

Most older people lead active lives dependent on the convenience and flexibility offered by the private car. Yet, much policy debate seems to assume that older people contribute only marginally to the major transportation problems. In fact, because of their lifestyles and growing reliance on the car, the elderly exacerbate several societal problems, even as they may disproportionately suffer from those problems.

A. Environmental Pollution and Energy Consumption

The important role played by the private car in the lives of older people will have significant environmental implications. There is substantial evidence that traditional planning efforts underestimate the environmental impact of older drivers because those efforts assume that the relatively low licensing and travel rates seen among older people in the past will continue into the future. Those rates, however, have been increasing substantially for decades. In 2030, if all older drivers only drove as much as did comparable individuals in 1995, the total number of vehicle miles among the elderly would more than double, simply because the population of older drivers would have increased substantially. If, however, as current trends suggest, older people increase the miles they drive to resemble the travel patterns of the cohort just 10 years younger in 1995, the total number of miles driven annually would more than triple in the next three decades.

A large part of the increase in car travel will stem from the increasing number of women drivers. In 2010, if older women trip rates equaled men’s in 1995 and men’s stayed constant (at the 1995 level), the elderly would make over 94 million trips per day. If, however, vehicle trip rates for older men and women were to continue to increase at the same annual rate as they did between 1983 and 1995, the number of daily trips would skyrocket to over 118 million in 2010 and 183 million in 2020 (or six times more than in 1995).

In addition, the kind of trips older drivers make will exacerbate pollution problems. The shorter trips that the elderly typically make never allow the car engines to warm enough for pollution control devices to be effective, the so-called “cold start” problem. The catalytic converters on modern cars work best when both the catalyst and the engine exceed 600 degrees Fahrenheit; therefore the majority of emissions occurs during the first 10 percent of a trip. Even though trips are shorter, the emissions produced by cars driven by the elderly may increase even as their total trip-making decreases. Overall, data strongly suggest that older drivers will be significant contributors to the damage done to the environment by the use of the private car.

B. Metropolitan Decentralization

Low density development caused by metropolitan decentralization has long been recognized as a major and growing societal problem. What is often overlooked in these discussions is that the suburbanization of the elderly parallels the suburbanization of the U.S. population. That so many people aged 30–64 live in suburban areas means that the aging-in-place phenomenon will create suburbs with an even greater percentage of elderly people in the future. Metropolitan areas with large soon-to-be elderly populations are those that successfully attracted large numbers of migrants with “good demographics” during their working years. These areas tend to be located in growing parts of the country, such as the Sunbelt, and in growing parts of metropolitan areas, typically selected suburbs.

Although most seniors do not move when they retire, the migration that does occur will reinforce suburbanization and sprawl in many rapidly growing states. Today, the states with the highest total growth rates are those with the fastest growth among those over age 65, which is largely attributable to in-migration upon retirement. On a metropolitan scale, the
suburbs with the greatest share of seniors aged 65 and older are primarily located in the Northeast, where the share of the under-35 population is declining most rapidly. These “senior suburban havens,” shown in Table 1, illustrate the aging-in-place phenomenon. By contrast, the “senior suburban growth centers” with the largest increases in elderly are all located in the Sunbelt, particularly in the southwest (see shown in Table 2).

As William Frey points out, fast-growing centers generally house seniors in communities with generally stable or growing tax bases and an energetic, active senior population. Slow-growing suburbs will likely see an increased need for community services and information targeted to the elderly population, such as transportation services, access to medical care, and affordable housing. However, as the workforce-aged population shrinks in these places, so does the tax base needed to provide these additional services.31

People over age 50 compose over 20 percent of all new home buyers and exhibit the same demands for housing that fuel suburban development and sprawl. Most older people migrating to the Sunbelt choose fairly large homes in low-density areas, often in greenfield communities. Older buyers, “want eight-to-nine foot ceilings, bigger garages, a bathroom for each bedroom. Even people who don’t cook want fancy kitchens.”32

As a result of these trends, the elderly are becoming disproportionately represented on the suburban fringe. This is particularly true in fast-growing places such as metropolitan Phoenix, where the elderly represent almost one-third of new urban fringe residents. This is because, as Map 1 shows, the elderly tend to congregate in the numerous age-segregated

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**Table 1. Metropolitan Areas’ Suburban Share of Elderly Over Age 65 and Change in Population Under 35, 1990–2000.**

<table>
<thead>
<tr>
<th>Metropolitan Rank in Percent of Suburban Population 65+</th>
<th>Metropolitan Area</th>
<th>Percent of Suburban Population 65+</th>
<th>Change in Suburban Population Under 35</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sarasota, FL MSA</td>
<td>29.5</td>
<td>13.0</td>
</tr>
<tr>
<td>2</td>
<td>West Palm Beach, FL MSA</td>
<td>24.0</td>
<td>22.3</td>
</tr>
<tr>
<td>3</td>
<td>Tampa, FL MSA</td>
<td>20.5</td>
<td>11.9</td>
</tr>
<tr>
<td>4</td>
<td>Scranton, PA MSA</td>
<td>18.8</td>
<td>-11.0</td>
</tr>
<tr>
<td>5</td>
<td>Pittsburgh, PA MSA</td>
<td>17.9</td>
<td>-11.2</td>
</tr>
<tr>
<td>6</td>
<td>Tucson, AZ MSA</td>
<td>17.3</td>
<td>20.7</td>
</tr>
<tr>
<td>7</td>
<td>Monmouth, NJ PMSA</td>
<td>16.9</td>
<td>3.4</td>
</tr>
<tr>
<td>8</td>
<td>Buffalo, NY MSA</td>
<td>16.6</td>
<td>-9.6</td>
</tr>
<tr>
<td>9</td>
<td>Youngstown, OH MSA</td>
<td>16.3</td>
<td>-8.7</td>
</tr>
<tr>
<td>10</td>
<td>Fort Lauderdale, FL MSA</td>
<td>16.2</td>
<td>32.0</td>
</tr>
<tr>
<td>11</td>
<td>Allentown, PA MSA</td>
<td>16.0</td>
<td>-3.4</td>
</tr>
<tr>
<td>12</td>
<td>Providence, RI-MA NECMA</td>
<td>15.3</td>
<td>-6.3</td>
</tr>
<tr>
<td>13</td>
<td>Cleveland, OH MSA</td>
<td>15.0</td>
<td>-6.1</td>
</tr>
<tr>
<td>14</td>
<td>Phoenix, AZ MSA</td>
<td>14.9</td>
<td>47.5</td>
</tr>
<tr>
<td>15</td>
<td>Harrisburg, PA MSA</td>
<td>14.9</td>
<td>-2.8</td>
</tr>
<tr>
<td>16</td>
<td>Hartford, CT NECMA</td>
<td>14.5</td>
<td>-7.4</td>
</tr>
<tr>
<td>17</td>
<td>Springfield, MA NECMA</td>
<td>14.4</td>
<td>-9.0</td>
</tr>
<tr>
<td>18</td>
<td>Albany, NY MSA</td>
<td>14.3</td>
<td>-8.3</td>
</tr>
<tr>
<td>19</td>
<td>Bergen, NJ MSA</td>
<td>14.1</td>
<td>1.4</td>
</tr>
<tr>
<td>20</td>
<td>Bridgeport, CT NECMA</td>
<td>14.1</td>
<td>-3.5</td>
</tr>
</tbody>
</table>


*Note.* MSA is metropolitan statistical area; PMSA is a primary metropolitan statistical area, and NECMA is New England County Metropolitan Area.

"The elderly are becoming disproportionately represented on the suburban fringe."
According to the Urban Land Institute, the majority of so-called active adult retirement (AAR) communities that attract after-retirement migrants are being built in the Sunbelt states and often on the suburban fringe where land assemblage is easy and relatively less expensive. The average AAR community had just over 400 units, on 163 acres; the median size of the most popular detached home plan was 1,900 square feet. Recently, developers have begun to build in “four season” markets or in closer-in suburbs, but the desirability of such facilities is still being tested.35

C. Congestion
In the past two decades, traffic congestion has become a way of life in nearly every major metropolitan area. Metropolitan congestion is expected to increase as the number of vehicles, number of drivers, number of miles traveled, and number of intercity trucks grows and as regional economies continue to decentralize along low-density settlement patterns.36 It is less recognized that older drivers are a growing contingent of almost all of these causes of congestion.


<table>
<thead>
<tr>
<th>Metropolitan Rank in Growth in Percent of Suburban Population 65+</th>
<th>Metropolitan Area</th>
<th>Percent Change In Suburban Population 65+</th>
<th>Percent change in Suburban Population Under 35</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>El Paso, TX MSA</td>
<td>83.1</td>
<td>39.5</td>
</tr>
<tr>
<td>2</td>
<td>Las Vegas, NV-AZ MSA</td>
<td>78.1</td>
<td>75.4</td>
</tr>
<tr>
<td>3</td>
<td>Colorado Springs, CO MSA</td>
<td>69.8</td>
<td>17.7</td>
</tr>
<tr>
<td>4</td>
<td>Honolulu, HI MSA</td>
<td>53.4</td>
<td>-7.1</td>
</tr>
<tr>
<td>5</td>
<td>Tucson, AZ MSA</td>
<td>53.1</td>
<td>20.7</td>
</tr>
<tr>
<td>6</td>
<td>Phoenix-Mesa, AZ MSA</td>
<td>52.1</td>
<td>47.5</td>
</tr>
<tr>
<td>7</td>
<td>Austin, TX MSA</td>
<td>48.6</td>
<td>42.4</td>
</tr>
<tr>
<td>8</td>
<td>McAllen, TX MSA</td>
<td>47.3</td>
<td>50.7</td>
</tr>
<tr>
<td>9</td>
<td>Denver, CO PMSA</td>
<td>47.2</td>
<td>23.5</td>
</tr>
<tr>
<td>10</td>
<td>Jacksonville, FL MSA</td>
<td>46.6</td>
<td>16.2</td>
</tr>
<tr>
<td>11</td>
<td>Houston, TX PMSA</td>
<td>46.2</td>
<td>19.6</td>
</tr>
<tr>
<td>12</td>
<td>Albuquerque, NM MSA</td>
<td>43.0</td>
<td>12.1</td>
</tr>
<tr>
<td>13</td>
<td>Dallas, TX PMSA</td>
<td>41.5</td>
<td>28.2</td>
</tr>
<tr>
<td>14</td>
<td>Salt Lake City, UT MSA</td>
<td>41.3</td>
<td>17.7</td>
</tr>
<tr>
<td>15</td>
<td>Baton Rouge, LA MSA</td>
<td>40.1</td>
<td>8.2</td>
</tr>
<tr>
<td>16</td>
<td>Atlanta, GA MSA</td>
<td>39.9</td>
<td>35.3</td>
</tr>
<tr>
<td>17</td>
<td>Memphis, TN-AR-MS MSA</td>
<td>39.8</td>
<td>6.8</td>
</tr>
<tr>
<td>18</td>
<td>Sacramento, CA PMSA</td>
<td>39.6</td>
<td>13.5</td>
</tr>
<tr>
<td>19</td>
<td>Fort Worth, TX PMSA</td>
<td>39.2</td>
<td>14.1</td>
</tr>
<tr>
<td>20</td>
<td>Columbia, SC MSA</td>
<td>36.3</td>
<td>5.0</td>
</tr>
</tbody>
</table>


Note: MSA is metropolitan statistical area; PMSA is a primary metropolitan statistical area, and NECMA is New England County Metropolitan Area.
Of course, older drivers do not generally make work trips, and they tend to avoid both congested time periods and congested areas. Many cities, however, increasingly suffer traffic congestion for long periods of the day; the morning and evening peaks have lengthened substantially in the last three decades. Many cities also experience substantial midday peaks. According to the Texas Transportation Institute, midday delays on the roadways are actually higher than the traditional rush hour periods in several metropolitan areas including Los Angeles, Minneapolis, Phoenix, and Norfolk. In the latter case, midday congestion is almost twice as bad as the morning peak period. They further state that cities that are congested during the peak hours, also have a significant amount of midday delay. As a result, older drivers can only avoid the worst of congestion; they do not generally travel in congestion-free periods.

In fact, older drivers make the bulk of their trips between 9 a.m. and 1 p.m., placing them on the road at the end of the morning peak and during the midday peak. Moreover, although they tend to avoid freeways, and thus contribute little to freeway congestion, older drivers may disproportionately affect arterial congestion (given that smaller streets have less capacity). Although far from the major cause of traffic congestion, older people do contribute to this societal problem because they make the majority of their trips during periods of moderate to heavy traffic.

Retirement communities were designated as those in a senior overlay zone or those with over 1,000 residents. Source: Morrison Institute for Public Policy, Arizona State University.
D. Safety

An aging population both creates and faces safety problems with many modes of transportation. Although the problems of the older driver are more frequently discussed, older pedestrians also face substantial dangers, which often makes it safer for them to be in a car than out on the street.

The safety consequences inherent in more elderly drivers is a recognized problem. Older drivers are not only more likely to have crashes on an exposure basis (per trip or mile driven), they are also more likely to be at fault in a multivehicle crash, and more likely to be killed or injured than are younger people in a crash of comparable magnitude. At the same time, older drivers have fewer crashes per capita than any other age group and, according to the Centers for Disease Control (CDC), they are less likely to be involved in crashes that kill someone else. In addition, older drivers are substantially more law-abiding than younger drivers and far less willing to make risky maneuvers; they are also far less likely to drive under the influence of alcohol or illegal drugs. Experts have postulated that people today are better drivers and bring their safer habits with them into their retirement years. As a result, per capita crash rates have been declining among those over age 65 for decades.

However, the large increase in the sheer number of older drivers, especially women, will cause an absolute increase in crash rates, even if per capita rates continue to drop. Moreover, a greater percentage of older drivers will be very old—over age 85—and crash rates rise rapidly after 85. Because all older drivers appear to be increasing their trip-making, their exposure will increase substantially, even if they are safer or more experienced than comparable drivers in the past.

Moreover, current per capita crash rates for older people are fairly low because older drivers self-regulate, that is, they change a number of things about their travel and driving behavior to accommodate loss of driving skills or problematic driving situations. They often avoid congested areas, left turns, and peak-period travel or avoid driving at night or on unfamiliar roads or in bad weather. It is doubtful, however, that future generations of older drivers will self-regulate as much; accustomed as they are to the flexibility and convenience of the car, they simply may be unwilling to change their driving habits when doing so impedes their lifestyle. If older drivers in the future fail to avoid problematic situations, and perhaps engage in riskier behavior, per capita crash rates may well increase despite greater driving skills and experience.

In addition, older people are more susceptible to injury and death in the crashes that do occur. Thus, older people, who represent 13 percent of the U.S. population, constitute 18 percent of U.S. motor vehicle deaths. Moreover, people over age 75 have more motor vehicle deaths per 100,000 miles driven than any age cohort except those under 25. The Insurance Institute for Highway Safety estimates that the doubling of the elderly population will mean that older people will be involved in 25 percent of all fatal car crashes.

The aging of the population also brings several overlapping pedestrian safety problems. The most discussed are crashes between pedestrians and autos. Historically, pedestrian crash data have been poor, and data on street falls almost nonexistent. Improved data collection methods here and abroad suggest that both crashes and falls are much higher than previously thought, and that street falls may be even more significant than auto-pedestrian crashes among the elderly.

In 2000, the pedestrian death rate for both men and women over age 70 was the highest of any age group. People aged 65 and over account for 22 percent of all pedestrian deaths and 32 percent of all nonfatal pedestrian injuries. People 70 and over, who constitute less than 10 percent of the population, account for 18 percent of pedestrian deaths. At the same time, pedestrian-auto crash rates have been dropping substantially in the industrialized world over the last three decades. Most traffic safety researchers conclude that the decline is tied most closely to the fact that older people in developed countries are walking less and driving more. The CDC also attributes the drop to better pedestrian facilities and restricted on-street parking.
IV. Debunking the Myths of Elderly Travel Needs

Transportation has been a recognized problem for the elderly for more than 30 years. In 1971, the first White House Conference on the Aging reported that transportation was one of the three greatest needs of older people. Subsequent White House conferences have also ranked transportation problems as a major barrier. In 1988, the National Academy of Sciences convened a conference to undertake a “comprehensive study and investigation of problems which inhibit the safety and mobility of older people.” They found that there were insufficient transportation resources for those unable or unwilling to drive. In 1999, another national conference found that mobility gains among the elderly had been significant, but only for those who could drive, and only for as long as they could do so.

Unfortunately, there are many misunderstandings about the mobility needs of older Americans. Most policy discussions tend to take an either-or stance: either they drive or they do not, either they are healthy and able-bodied or crippled and severely disabled, either they can use public transit or they cannot. Public policy has also tended to focus on only those with the most obvious and severe disadvantages. There are three important misconceptions about older people that must be overcome before we can develop appropriate policy and program strategies.

A. Myth One: As people age, they first lose the ability to drive; they then use public transit if it is available; when unable to use public transit they walk, and finally, unable to walk they use special transit services.

Although widely believed, this “progression” is largely wrong. In fact, driving is often the easiest physical task for older people. Long before they lose the ability to drive, older people may be unable to board or ride public transit, or to walk to a bus stop or train station. Even though many may still be able to use special transit services, the overwhelming majority of older people, regardless of their stage of disability, are able to ride in a car and choose to do so first.

The dangerous corollary to this first myth that the elderly opt for public transit or special transit services is that, in fact, there are few special services available, whether provided by a transit operator or a social or human service agency. First, special transit services are only available where there are regular transit services—which are almost nonexistent in rural areas and very limited in suburban areas, home to more than two-thirds of the elderly. Only 14 percent of the elderly who live in rural areas report having any kind of transit services within a half-mile. As the Community Transit Association of America (CTAA) noted:

The past two decades have seen many forms of transportation virtually abandon rural areas. Small town residents often travel hundreds of miles just to access the nearest airport; intercity bus service is a shell of its former self; taxi service is scant and expensive; and passenger rail services often only streaks through the countryside in the middle of the night.

In 1996, CTAA found that two of five rural counties had no public transit, and another 25 percent had service equal only to one trip per month.

Second, even in urban areas, many elderly people do not live close to existing bus lines and thus are ineligible by reason of geography for any special services that exist. In most communities, special services are only available within three-fourths of a mile of existing bus routes and only during regular bus route hours (i.e., the minimum requirements of the Americans with Disabilities Act (ADA)). Although most experts suggest that one-quarter mile is better measure of transit access for older people, in 1995, only 43 percent of the elderly in suburban areas reported living within one-half mile of public transit.

Third, most elderly people are ineligible for special transit services even if they live near existing bus routes. The complementary paratransit requirements of the ADA have put a
tremendous burden on most urban paratransit systems; transit systems must provide a very high level of expensive service to those certified as ADA-eligible. In response, the overwhelming majority of metropolitan transit operators have severely restricted eligibility for those services. Many elderly do not qualify because their disability is not severe enough; being unable to drive or having minor handicaps rarely qualifies one for services.54

Most communities also host many small, special paratransit services provided by non-governmental organizations, organizations supporting the aged, and public and private social services agencies. However, these providers generally transport only those involved in specific agency services and do not serve a large percentage of the elderly.55 Overall, as currently financed and delivered, special paratransit services serve a very small proportion of a very large population and will serve an even smaller proportion of the growing elderly population in the future. They can serve as one part of a “family” of transportation services, but they are not the only or even a major strategy for meeting the mobility needs of older people.56

B. Myth Two: Older people who drive meet their mobility needs without assistance; those who cannot drive have substantial unmet needs.

Older people who drive still face mobility barriers. Long before they cease driving, people begin to adjust their travel patterns to address personal limitations by, for example, not driving at night or to congested areas. As suggested above, this self-regulation helps keep them safer.57 However, most policy discussions fail to recognize how this behavior can negatively affect one's lifestyle. We currently underestimate the impact of reduced driving and overestimate the impact of driving cessation because cessation is viewed as a single point in time after which mobility falls drastically. In fact, long before they give up driving, older people gradually lose mobility and independence as they gradually reduce their driving.

In a Tucson study that followed 1,300 older drivers for five years, those who ceased to drive one year after being interviewed made substantially fewer trips after cessation than they had in the previous year or than did those who continued to drive. The most striking fact, however, was that those who stopped driving were already making substantially fewer trips one year before compared with those who continued to drive, even controlling for age, self-reported health status, and other variables.58

C. Myth Three: All loss of mobility skills is permanent; older people either have the skills needed to drive, use public transit, or walk—or they do not.

In reality, the mobility needs of the elderly are complicated. Public policy discussions in general often fail to recognize the varying abilities of older people. People may stop driving temporarily because of a heart attack or other serious illness but begin driving again as their health improves. Older people may need walkers and other mobility aids on some days but not on others. They may be able to travel by conventional public transit on a sunny day but need a ride on a rainy day. Thus, they may require differently options on different days or in different seasons of the year.

A corollary to this myth is that people who can drive will rarely use other modes no matter how those options are provided. This assumption reduces the incentive to focus attention on older drivers or older people who have mobility options. Indeed, most U.S. transit ridership among the elderly stems from those who do not drive. However, in Australia, Europe, and Canada, elderly car drivers make up a meaningful percentage of transit users.59 When given a reasonable set of transportation options, older people in those countries appear to choose the best or most convenient mode for each trip.60

Thus, it may be possible to structure public transit and other services to reduce car use among the elderly even if these options do not remove all need (or preference) for a car. The existence of such options before an individual ceases to drive may make older people more willing and able to use other transport options when they do stop driving.
V. Legislative and Policy Solutions

As Congress and other policymakers at the state and metropolitan levels consider the reauthorization of the federal transportation law, they should both develop policies and programs that reduce the contribution older people make to important societal problems, such as congestion and metropolitan decentralization, and offer realistic mobility and access options. To do so, policymakers should recognize the different subsets of the elderly, including those who still drive, those who have given up driving, and those who never drove. Programs should consider where older people live and their ethnic, racial, and cultural backgrounds. To meet the elderly’s mobility needs, policymakers should consider the following:

A. Plan explicitly for the mobility needs of the elderly.

There is a substantial and growing body of advocacy and planning research on the role of regional planning, community design, and metropolitan growth and development on people’s mobility. However, little of that research focuses specifically on the elderly. Indeed, many advocates assume that anything that improves the design of neighborhoods overall will help the elderly. Unfortunately, these types of improvements may not help older people unless special attention is paid to their needs.61

Many efforts to integrate transportation and land-use planning are designed to mix land uses, promote infill and central city redevelopment, and increase densities, all of which could increase the mobility and access of the elderly. Such development can locate a range of social and shopping opportunities nearer to home, reducing the elderly’s need to travel far or by car. Multi-use developments that include housing might allow older people to conduct their daily activities largely within their own apartment building or complex. If such developments occur near their suburban homes, the elderly may be able to move from houses now too large into more appropriate apartments, remaining in their own neighborhood as they age.

However, such developments can also substantially change neighborhoods in ways that pose new or different problems for older people, such as increased noise and congestion, an influx of unfamiliar activities, and the potential for gentrification. Clearly, the impacts of these strategies are site-specific and depend substantially on the attention paid to the housing and other details of relevance to the elderly. Planning for such development and redevelopment should ensure that older people, particularly those disadvantaged by extreme age, disability, or poverty, are not harmed by projects that are neither affordable nor accessible.

Walkable neighborhoods are also an essential element in several widely discussed public policies, from “smart growth” to community health. Neighborhoods designed and redesigned to make walking pleasant, safe, and secure might increase both the mobility and the health of older people. There is considerable design and engineering research that shows communities how to improve pedestrian access by implementing pedestrian-friendly facilities and treatments, improving intersections, and adopting traffic-calming measures. These approaches, however, must be implemented with careful attention to the specific needs of older people.

The existing federal transportation law currently requires states to assess the pedestrian accessibility of their major road projects. It would be useful if this requirement were strengthened in the new legislation, and transit operators were charged with the same responsibilities for assessing the degree of pedestrian access to their services and facilities.

B. Target public transit services and facilities directly for the elderly.

Over the last decade, older people have made less use of public transit. However older people would consider using this mode if services were provided in ways that better met their needs. To make transit services more appropriate for older people, federal, state, and metropolitan policies and programs should encourage or require, as well as finance, four major
categories of public transit developments: improving conventional service, increasing safety and security in all parts of the system, enhancing communication and information, and providing additional services more carefully targeted to the elderly.

The only element of TEA-21 explicitly designed for the elderly is the Section 5310 formula grants and loan for special needs of the elderly and persons with disabilities. Section 5310 provides transportation services in areas where transit service is unavailable, insufficient, or inappropriate.62 The program provides benefits, although the amount is far too small ($456 million, about 1.1 percent of the total transit authorization) to be broadly effective.

To improve transit services for older people will require additional funding geared toward not only the more severely disadvantaged of the elderly (as 5310 is), but the larger market of elderly who can be convinced to use improved conventional services and new or different services that respond to their special needs. To improve conventional services, communities must first make transit safer and more secure for older people and provide better pre-trip and enroute information. They must also purchase more low-floor (accessible) buses; schedule more regular services, particularly in the off-peak; consider route restructuring to better serve the origins and destinations of older travelers; and even provide sporadic but scheduled services for shopping or other needs. These services should target recreational vehicle and trailer parks and other neighborhoods with a growing elderly population.

Transit operators can also increase ridership among older people by changing the basic nature of the services offered. Some communities have been very successful with service routes and community buses—small accessible and scheduled buses in which the driver provides substantial assistance and all elderly travelers are guaranteed a seat. Community buses are also attractive because they are specifically routed to serve the origins and destinations of most interest to older people. Many systems have found that those who ride community buses are relatively healthy older people who are new to public transit or who used it only infrequently prior to the new services.63

C. Support alternative transport options.
There is a wealth of transportation resources and alternatives in many communities that are not well or fully used, many of which could become an important part of the transportation repertoire of the elderly if supported by state law and federal funds.

First, supporting formal and informal volunteer networks and facilitating ride-sharing programs would increase transportation options for older people. Communities could help formal volunteer programs to overcome the liability and maintenance problems faced when they begin to carry any appreciable number of riders. Federal law could assist a public agency or the transit operator to develop group insurance coverage or to establish insurance pools. In addition, a transit operator or other public agency could develop ways for volunteers involved in formal systems to receive auto maintenance at reduced rates.

Community agencies or transit operators could encourage more informal volunteer service through voucher programs, as implemented in Mesa, AZ, and Riverside, CA. Currently, several federal transportation programs (Section 5311 (Nonurbanized Area Formula Grant Programs) and Section 5310 (Elderly and Persons with Disabilities Programs) can be used to pay for vouchers, although they rarely are. A 1999 study found that voucher programs were an effective way to use volunteers because they were less expensive than directly providing such services, and riders were usually offered longer service hours.64

In addition, communities could strengthen the role, and the safety in some cases, of for-profit operators who provide mobility for older travelers by regularizing extra-legal operations, expanding the role of the taxi, and cultivating additional entrepreneurs. Many neighborhoods and communities, particularly those of color, currently host a variety of jitney-type transportation providers, which may or may not be operating illegally. There is substantial anecdotal evidence that many riders of these informal services are older people.

To the extent possible, communities should standardize if not fully legalize such operations; if necessary, they can be prohibited from working outside the neighborhoods in
which they have historically operated. Vehicle standards should be established and vehicles routinely inspected, and operators should be required to carry sufficient insurance. If they need assistance once their services are more formalized, communities can help lower insurance rates and maintenance costs. Moreover, communities should be encouraged to make better use of existing taxi operators, through user-side subsidies and contract programs. If lacking either taxis or informal providers, communities can help train and equip local entrepreneurs to provide needed services, particularly in specific neighborhoods.

**D. Improve the highway and street infrastructure.**

The entire auto-based infrastructure must be modified and enhanced so that older people can drive safely longer in ways that reduce or even eliminate the environmental and congestion-related features of their travel. Federal and state funds can be used to support programs and policies that make the road network safer, increase safe private vehicle use by qualified drivers, and help develop vehicles that are safer, cleaner, and easier to drive.

During the last decade, the Federal Highway Administration (FHWA), in recognition of the aging of society and the problems that older drivers face, has prepared several handbooks and reference sources linking older road-user characteristics to highway design and operational and traffic engineering recommendations, suggesting specific roadway, signage, and traffic standards. Federal funds should be used to encourage communities to update all aspects of the road system to conform to these important, but voluntary, older-driver design standards.65

States should also be allowed to use their own and federal funds to assist safe, older drivers with financial difficulties to continue driving. A community can develop programs that provide assistance for a car’s maintenance and fuel, or even its purchase. Given the car’s contribution to a number of environmental problems, this may seem a quixotic approach, but it has been adopted in the United States as part of several welfare-to-work programs. Communities can also develop car-sharing programs for older people in independent living centers, trailer parks, or naturally occurring retirement neighborhoods. These communities can cooperatively buy and operate a small fleet of vehicles, allowing individual residents to reserve and drive them, perhaps giving up their own cars.

Finally, the federal government, in partnership with private industry, should take a more active role in developing cars that are safer, cleaner, and easier to drive. The vehicle emissions improvements that have been achieved by reducing car size or weight are particularly relevant for older drivers; smaller, lighter, or less protected vehicles may meet environmental mandates but they also may increase the severity of the injuries received by older drivers in crashes.66 In addition, because the U.S. government is one of the largest purchasers (directly or indirectly) of a range of mechanized disability aids, it should take an active role in evaluating the safety and other consequences of the growing reliance by older people on powered wheelchairs, golf carts, and electric scooters on roadways and pedestrian paths.

**VI. Conclusion**

Older people are substantially more mobile today than ever before. Trip rates and distances have increased remarkably for all cohorts of the elderly. Whether cause or effect, these trends are directly related to metropolitan decentralization and the increasing dependency on the car. Although the mobility problems of older people who have never had a car or a license have consumed much of our attention, this group is a decreasing share of the total elderly population. The largest group of people facing substantial mobility losses is those who drove well into their senior years.

When older drivers lose the ability to drive, or cannot easily secure rides from others, they will suffer substantial losses in mobility. If they have made perhaps irreversible housing and other decisions based on the mobility afforded by the car, they may suffer disproportionately more than those who never drove, given that the latter group may have made household decisions in ways that better support a car-free lifestyle.

“Solving the mobility needs of older people is integral in answering several of the transportation challenges facing society.”
Comprehensive and long-term solutions to the mobility needs of older people must take into account the great variability not only among people, but for the same person in different situations. Policies and programs must recognize the preference for a repertoire of travel options that give the elderly freedom and flexibility in the face of declining skills.

Policymakers must focus considerable attention and resources to meet the growing mobility needs of older travelers, and not simply as an equity or social issue. Solving the mobility needs of such a large and growing segment of the population is integral in answering several of the transportation challenges facing society. To do so, we must meet the varied needs of different subsets of the elderly, based on a realistic understanding of those needs, using cooperative strategies that forge partnerships between and among public- and private-sector agencies and actors.

Endnotes

1. Sandra Rosenbloom is professor of planning and director of the Drachman Institute for Land and Regional Development Studies at the University of Arizona, Tucson.


3. Ibid.


6. Activities of daily living include walking one-fourth mile, standing for up to two hours, sitting for up to two hours, climbing stairs, stooping or kneeling, reaching up, reaching out, grasping something, and/or carrying 10 lbs. U.S. Federal Interagency Forum on Aging-Related Statistics, Older Americans 2000: Key Indicators of Well-Being (2000).


11. U.S. Department of Health and Human Services, Profile of Older Americans.


17. Ibid.

18. Ibid.

19. Ibid.


38. Nearly 90 percent of elderly drivers in Illinois said they frequently drove during off-peak hours (9 a.m. to 3 p.m.). Only about half also drove during the afternoon peak hours, and only one-quarter drove during the morning peak. See Rahim F. Benekohal and others, “Effects of Aging on Older Drivers’ Travel Characteristics,” Transportation Research Record 1438 (1997).

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40. This paper uses the convention that safety refers to the risk of crashes and injuries from crashes; security refers to crime against people and the fear of being victimized.


45. Rosenbloom, “The Mobility of the Elderly.”

46. Institute for Highway Safety, “Older Drivers Up Close.”


55. Rosenbloom, “The Mobility of the Elderly.”

56. Ibid.


60. It is important to note that the quality of transit service varies in different countries. The willingness to use transit depends a great deal on quality and availability of service.


Acknowledgments
The Brookings Institution Center on Urban and Metropolitan Policy would like to
thank the Ford, Joyce, MacArthur, and McKnight foundations for their support of its
work on transportation policy reform. Brookings would also like to thank the Fannie
Mae Foundation for its founding support of the urban center and its work.

The following individuals provides invaluable review and general assistance in the
development of this brief: Patricia Gober, Arizona State University; David Luberooff,
Harvard University; Helen K. Kerschner, Beverly Foundation; and Genevieve Guil-
iano, University of California, Irvine. Elizabeth Roberto, a presidential management
intern at Brookings, provided research assistance.

This brief was presented as written testimony to the U.S. Senate Special Committee
on Aging at a forum examining ways to improve senior transportation, July 21, 2003.

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