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Senior Transportation Abstracts: A Focus on Options

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UPDATED 9.8.11

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Senior Transportation Abstracts: A Focus on Options

The abstracts in this publication emphasize what are often referred to as Senior Transportation Options, Senior Transportation Alternatives, Transportation Options for Older Adults, and STPs (Supplemental Transportation Programs for seniors)

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The Beverly Foundation

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Introduction

This collection of abstracts represents a publication of importance for understanding the needs, challenges, solutions, and/or every day issues related to senior transportation services. While several of the abstracts include information about senior driver safety, the collection's primary purpose is to present a holistic approach to transportation options for older adults. Such a collection is timely because, although the practice of providing transportation to older adults is not new, research and preparation of practical informational and technical materials related to older adult transportation service needs and service delivery are quite recent.

In this first foray into identifying, documenting, and abstracting important publications related to transportation options, the editors contacted key researchers, professionals, and practitioners in the fields of aging and transportation. The result was the identification of countless publications, over sixty of which are included in this collection. In addition, we conducted a traditional literature search using key words and electronic databases. Keywords used were: "senior," "alternative transportation," "elderly," "older persons," "turn-key kit," "5 A's," "driving," and "volunteer." Because the editors plan to update the collection periodically to ensure that it remains current, it is in electronic form so it can be downloaded by interested researchers and professionals. (There are no plans to produce it in hard copy form.)

Why undertake an abstracting project on this subject? The reason is that transportation challenges generally are identified as one of the top three needs if not the number one need of older adults. At the same time, transportation for seniors is a cross-cutting issue and often buried within a senior service issue (housing, social service, health care); or a transportation service issue (public transportation. ADA paratransit, job access transportation). The result is that many publications about seniors and transportation reference transportation as playing an important role in service delivery and customer support, but do not focus on the concept and practice of senior transportation. In other words, being a cross-cutting issue does not allow senior transportation to be viewed as a stand-alone topic that contributes not only to sustaining, but also maintaining and enriching, the lives of older adults. This collection focuses on senior transportation options as its own issue with its own champions.

As editors, we want to express our appreciation to the many colleagues who contributed information for this collection. We look forward to receiving comments about its contents and to suggestions for additional publications that will be appropriate for future updates.

PROFESSIONAL CONTRIBUTORS

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2. Carr, D. B., Shead, V., Storandt, M. (2005). Driving cessation in older adults with dementia of the Alzheimer's type. *Gerontologist*, *45*: 824-827.

3. Donorfio, L. K. M., Mohyde, M., D'Ambrosio, L., & Coughlin, J. (2009). To drive or not to drive? That isn't the question—Defining self-regulation among older drivers. *Journal of Safety Research*, *40*(3): 221-226.

4. Fildes, B. N., Charlton, J., Pronk, N., Langford, J., Oxley, J., & Koppel, S. (2008). An Australasian Model License Reassessment Procedure for Identifying Potentially Unsafe Drivers. Monash University Accident Research Centre, Monash University, Clayton, Victoria, Australia. Traffic Injury Prevention

B. Alternatives to Driving

Abstracts in this section focus on the concept and practice of identifying and promoting alternatives to driving the automobile.

1. Coughlin, J. F. & Cobb, R. W. (2000). How will we get there from here? *Journal of Aging & Social Policy*, *11*(2-3): 201-210.

2. Finn, J., & Sterns, H. (Eds.) (2003). The Mobile Elder: Getting Around in Later Life. *Generations*, *27*(2): 1-77.

3. Johnson, E. E. (2003). Transportation Mobility and Older Drivers. *Journal of Gerontological Nursing*, Bol *29*(4): 34-41.

4. Kostyniuk, L. P. & Shope, J. T. (2003). Driving and alternatives: Older drivers in Michigan. *Journal of Safety Research*, *34*: 407-414. Retrieved on November 12, 2010, from ScienceDirect

C. Senior Mobility

Abstracts in this section address the broad topic of mobility in the context of physical movement from the perspectives of research, travel patterns, assistive technology, community planning, and pedestrian safety.

1. AARP Housing and Mobility Options (2010). *The Getting Around Guide: An AARP Guide to Walking, Bicycling and Public Transportation.* Washington, DC.

2. Bailey, L. (2004). Aging Americans: Stranded Without Options. Surface Transportation Policy Project: Washington, DC.

3. Collia, D., Sharp, J., & Giesbrecht, L. (2003). The 2001 national household travel survey: A look into the travel patterns of older Americans. *Journal of Safety Research, 34*(4): 461-470.

4. Dickerson, A. E., Molnar, L. J., Eby, D., Adler, G., Bédard, M. Berg-Weger, M., Classen, S., Foley, D., Horowitz, A., Kerschner, H., Page, O., Silverstein, N.M., Staplin, L., & Trulillo, L. (2007). Transportation and Aging: A Research Agenda for Advancing Safe Mobility. *The Gerontologist, 47*(5): 578-590.

5. Eby, D. W., Molnar, L. J., & Kartje, P. S. (2009). *Maintaining Safe Mobility in an Aging Society.* New York, NY: CRC Press. ISBN: 9781420064537.

6. Foley, D. J., Heimovitz, H. K., Guralnik, J. M., & Brock, D. B. (2002). Driving life expectancy of persons aged 70 years and older in the United States. *American Journal of Public Health, 92*(8): 1284-1289.

7. Freund, K. & Vine, J. (2010). Aging, Mobility, and the Model T: Approaches to Smart Community Transportation. *Generation. 34*(3): 76-82.

8. Hartford, Inc. (2010).We Need to Talk: Family Conversations with Older Drivers. And,
   At the Crossroads. A Guide to Alzheimer's Disease, Dementia, and Driving.

9. Hunter-Zaworski, K. (2007). Getting Around in an Aging Society. *Planning*. 22-25.

10. Langlois. J. A., Keyl, P. M., Guralnik, J. M., Foley, D. J., Marottoli, R. A. & Wallace, R. B. (1997). Characteristics of older pedestrians who have difficulty crossing the street. *American Journal of Public Health, 87*(3): 393-7.

11. Lord, S., Despres, C., & Ramadier, T. (2010). When Mobility Makes Sense: A Qualitative and Longitudinal Study of the Daily Mobility of the Elderly. *Journal of Environmental Psychology*. 1-10.

12. Lynott, J., McAuley, W., & McCutcheon, M. (2009). Getting out and about: The Relationship between urban form and senior travel patterns. *Journal of Housing for the Elderly*, *23*(4): 390-402.

13. Mann, W. (Editor). Community Mobility: Driving and Transportation Alternatives for Older Persons. Haworth Press, New York, New York. 2005, (172p)

14. Marottoli, R. A., Mendes de Leon, C. F., Glass, T. A., Williams, C. S., Cooney, Jr. L. M., & Berkman, L. F. (2000). Consequences of driving cessation: Decreased out-of-home activity levels. *Journals of Gerontology Series B: Psychological Sciences & Social Sciences*, *55B*(6): S334-340.

15. Marquie, J. C. & Gabaude, C. (2010). Editorial. Aging, Transportation and Mobility: Current Issues. *Le Travail Humain*, *73*: 1-5.

16. Mollenkopf, H., Marcellini, F., Rouppila, I., Szeman, Z., & Tachen, M. (Eds.) (2005). Enhancing mobility in later life (Assistive Technology Research Series). Personal coping, environmental resources and technical support. The out-of-home mobility of older adults in urban and rural regions of five European countries. Amsterdam, Netherlands: IOS Press. (325 pp.)

17. Rosenbloom, S. (2003). The Mobility Needs of Older Americans: Implications for Transportation Reauthorization in *Taking the High Road: A Metropolitan Agenda for Transportation Reform,* (pp. 227-254). Bruce Katz and Robert Puentes (Eds.), Brookings Institution Press.

18. Rosenbloom, S. & Herbel, S. (2009). The safety and mobility patterns of older women: Do current patterns foretell the future? *Public Works Management Policy*, *13*: 338.

19. Siren, A. & Hakamies-Blomqvist, L. (2006). Does gendered driving create gendered mobility? Community-related mobility in Finnish women and men aged 65+. *Transportation Research Part.* F, *9*: 374-382.

20. Silverstein, N. M., & Peters-Beumer, L. (2007). "Community Mobility and Dementia" in Cox, C. (Ed.) *Handbook for Social Work Practice and Dementia.*

NY, New York: Springer Publishing Company.

21. Silverstein, N.M. (Guest Editor). (2008). Special Issue of Mobility. *Gerontology and Geriatrics Education*, *29*(4).

22. U.S. Department of Transportation (2003). Safe Mobility for a Maturing Society: Challenges and Opportunities. DOT HS 809 745, Washington, DC: author. 31pp.

23. Webber, S. C., Porter, M. M., & Menec, V. H. (2010). Mobility in Older Adults: A Comprehensive Framework. *The Gerontologist*, *50*(4): 443-450.

24. Wolff-Branigin, M. & Wolff-Branigin, K. (2008). The Emerging Field of Travel Training Services: A Systems Perspective. *Journal of Public Transportation*, *11*(3).

D. Travel Options

Abstracts in this section address transportation alternatives and options for getting older adults where they need to go and include public transportation, ADA paratransit, human service and senior transportation programs, and volunteer driver programs.

1. Beverly Foundation Fact Sheets – Volume 1 (2008).

2. Beverly Foundation & TRIP Program. (2005). The TurnKey Kit: A Web-Based Resource for Volunteer Driver Programs. Washington, DC: Beverly Foundation & AAA Foundation for Traffic Safety.

3. Beverly Foundation (2007). Your STP Clearinghouse: A "How to Guide for Developing a State-Wide Clearinghouse of STPs." Pasadena, CA: The Beverly Foundation.

4. Beverly Foundation & AAA Foundation for Traffic Safety. STPs (Supplemental Transportation Services for Seniors) (2001); and STPs in America-Update (2004). Beverly Foundation & AAA Foundation for Traffic Safety.

5. Burkhardt, J. E. (2007). High-Quality Transportation Services for Seniors. Rockville, Maryland: WESTAT.

6. Burkhardt, J. & Garrity, R. (2011).TCRP Report 144. Volume 2: Research Report. Washington, DC: Transportation Research Board.

7. Burkhardt, J. & Kerschner, H, K. (2005). How to Establish and Maintain Door-Through-Door Transportation Services for Seniors. Washington, D C: A Westat project for the US Administration on Aging, U.S. Department of Health and Human Services.

8. Burkhardt, J. E., McGavock, A. T. & Nelson, C. A. (2002). Improving Public Transit Options for Older Persons, *TCRP* Report 82.

9. Easter Seals (2004). A Solutions Package for Volunteer Transportation Programs: Transportation Solutions for Caregivers. Easter Seals.

10. Environment Victoria (2004). Getting about without a car: Guidelines for promoting healthy transport to older people. Victoria, Australia. 44 pp.

11. Fiedler, M. (2007). Older people and public transport: Challenges and chances of an ageing society. Koln, Germany: European Metropolitan Transport Authority (EMTA). (116 pp.).

12. Foreman, C., Tucker, L., Flynn, J., & West. M. (2003). Chapter Four: Successful Strategies in Senior Transportation Services. In *Senior Transportation Alternatives: Why are they Important and What Makes Them Work?* Florida Department of Transportation, Tallahassee, FL BC, pp. 67-87.

13. Golob, T. F., & Hensher, D. A. (2007). The trip chaining activity of Sydney residents: A cross-section assessment by age group with a focus on seniors. *Journal of Transport Geography*, *15*: 298-312.

14. Hardin, J. (2003). Senior transportation: Toolkit and best practices. Washington, DC: Community Transportation Association of America.

15. Kerschner, H.. (2004). Innovations for Seniors. Public and Community Transit Services Respond to Special Needs. Produced by the Beverly Foundation and the Community Transportation Association of America. (16 pages).

16. Kerschner, H. K. & Hardin, J. (2006). Transportation Innovations for Seniors: A Report from Rural America. Washington, DC: Partnership project and publication of the Beverly Foundation and the Community Transportation

Association of America. (14 pp.).

17. Kerschner, H. & Harris, J (2007). Better Options for Older Adults. *Public Roads*, March/April: 26-13.

18. Kerschner, H. K. & Rousseau, M. (2008). Volunteer drivers: Their contributions to older adults and to themselves. *Gerontology & Geriatrics Education*, *29*(4): 383-97.

19. Kerschner, H., Rousseau, M-H., & Svensson, C. (2008). *Volunteer Drivers in America: The Hope of the Future.* Pasadena, CA: Beverly Foundation.

20. Koffman, D., Weiner, R., Pfeiffer, A. & Chapman, S. (2010). Funding the public transportation needs of an aging population. San Francisco, CA: American Public Transportation Association (APTA).

21. Low, James A., & Chan, Daniel K. Y. (2002). Air travel in older people. *Age and Aging*, *31:* 17-22.

22. Molnar, L.J., Eby, D.W., St. Louis, R.M, Neumeyer, A.L. (2007). *Promising Approaches for Promoting Lifelong Community Mobility.* Washington, DC. AARP. 111pp.

23. National Association of Area Agencies on Aging and Partners for Livable Communities. (2007). A Blueprint for Action: Developing a Livable Community for All Ages, Washington, DC.

24. Park, N. S., Roff, L. L., Fei, S., Klemmack, D. L., Sawyer, P., & Allman, R. M. (2010). Transportation Difficulty of Black and White Rural Older Adults. *Journal of Applied Gerontology*, *29*(1): 70-88.

25. Rosenbloom, S. (2009). Meeting transportation needs in an aging-friendly community. *Generations*, *33*(2): 33-43.

26. Stepaniuk, J.A., Tuokko, H., McGee, P., Garrett, D.D., & Benner, E.L. (2008). Impact of Transit Training and Free Bus Pass on Public Transportation Use by Older Drivers. *Preventive Medicine*. 47, 335-337.

27. Torres-Davis, A. I. (2008). The need for improved transportation options for the elderly and the elder advocate's role. *Clearing House Review Journal of Poverty Law and Policy*, *42*: 5-6, 281-291.

E. Planning/Coordination/Mobility Management

Mobility management is aimed at promoting planning and coordination of transportation services. While some materials address senior transportation options, many focus on the broader issue of transportation for the general public.

1. Burkhardt, J. E., Koffman, D., & Murray, G. (2003). Economic benefits of coordinating human service transportation and transit services. Transit Cooperative Research Program, Washington, DC.

2. Community Transportation Association of America. (2008) Supplement No. 1: Transportation for Persons with Limited English Proficiency, Senior Transportation, CTAA: 1-11.

3. Millar, W. (2008). Mobility management: A new role for public transportation. American Public Transportation Association. (6 pp.)

4. Organisation for Economic Co-operation and Development (OECD). (2001). Ageing and Transport: Mobility Needs and Safety Issues Highlights.

5. Transportation Research Board (2004). Strategies to Increase Coordination of Transportation Services for the Transportation Disadvantaged. Washington, DC: TCRP Report 105.

Reference List

Abstract Recommendations for Future Updates

This first edition of the collection of abstracts related to Senior Transportation Options is the product of literature reviews and recommendations from professionals in our field. Please suggest any additional publications or resource materials that you believe will be of importance in future updates of this edition.

ABSTRACTS

A. Senior Driver Safety Research

While most of the abstracts in this section focus on senior driver safety research, they are included because they also discuss transitions from driving to the identification and use of transportation options.

1. Bartley, M. & O'Neill, D. (2010). Transportation and Driving in Longitudinal Studies on Ageing. *Age and Ageing*, *39*: 631-636.

   Current studies show that public transportation and reliance on others are transportation modes used by older adults who limit their driving or after experiencing driving cessation. Yet, public transport does not reflect the mobility pattern of older adults. Increasing awareness of older adults adapting to alternative methods of transportation will help facilitate maintaining their health, independence, and daily tasks. The objective of this study was to observe the relationship of health, aging, and environmental factors gleaned from current longitudinal studies on transportation. Fifty-five longitudinal studies from the National Institute on Aging were selected. Of the 55 studies, 37 were reviewed. The breakdown included 16 studies that did not mention driving or transportation; 20 asked about public transportation; and 12 had questions about driving or car ownership. With further analysis, 17 studies looked at transportation systems; 12 observed transportation needs; 11 questioned transportation resources; and 5 asked about transportation satisfaction. Results show that health, aging, and environmental factors do affect seniors' mobility. Authors suggest future research to better measure resources, preferences, and satisfaction on the mobility of older adults. Developing methods to address driving cessation, alternative transportation, and new modes of transportation is crucial for facilitating community mobility among older adults.

2. Carr, D. B., Shead, V., Storandt, M. (2005). Driving cessation in older adults with dementia of the Alzheimer's type. *Gerontologist*, *45*: 824-827.

   This study profiled 143 drivers with dementia of the Alzheimer's type who had stopped driving and 58 drivers with dementia of similar severity who continued to drive. Through psychometric tests, specifically testing speed of processing and visuospatial abilities, the researchers expected those who had ceased driving to have poorer performance on the test than those who continued to drive. The researchers also surveyed the reasons for driving cessation as reported by a collateral source. Contrary to expectations, the two groups did not significantly differ in their performance on the psychometric tests. The predominant reasons provided for driving cessation were memory and thinking problems (76%), disorientation (32%),

unsafe driver (22%), accident (15%), physical problems (10%), lost license (4%), too old (1%), and other (9%).

3. Donorfio, L. K. M., Mohyde, M., D'Ambrosio, L., & Coughlin, J. (2009). To drive or not to drive? That isn't the question—Defining self-regulation among older drivers. *Journal of Safety Research*, *40*(3): 221-226.

   Self-regulation is a practice that many older adults use when they feel that their driving capabilities have declined. Driving assists a person in maintaining independence, feelings of self-worth, and being connected to life and society. This qualitative study looks at how older drivers rationalize and cope with their declining abilities. The authors used a national survey via mail to a sample of drivers over the age of 50 and received 3,824 valid responses. A multidimensional description of self-regulation came from the collected responses with maintaining independence as their major concern. Four dimensions emerged: driving skill and ability, life and society, self-worth, and role of the automobile. Each of the dimensions contained one important main theme, respectively: declining confidence, increased dependence, importance of independence, and lack of public transportation. The research emphasized psychological processes surrounding independence, self-worth, and connectedness to the community. Household compositions also affected decisions on self-regulation. Research implications include developing educational programs for older adults that explain the importance of self-regulation; and developing policies that address viable transportation options for older adults.

4. Fildes, B. N., Charlton, J., Pronk, N., Langford, J., Oxley, J., & Koppel, S. (2008). An Australasian Model License Reassessment Procedure for Identifying Potentially Unsafe Drivers. Monash University Accident Research Centre, Monash University, Clayton, Victoria, Australia. Traffic Injury Prevention Publication details, including instructions for authors and subscription information: Retrieved August 1, 2010, from: http://www.informaworld.com/smpp/title~content=t713456148

   This article addresses licensing and the transition from driver to non-driver. The proposed Australasian model has key features that include the incorporation of a series of community referral mechanisms (family, policy, licensing authority, community, health care, and medical providers) in the assessment of a driver's functional ability; the use of valid and reliable assessment tools; and a case officer in assessing the driver. The individuals and tools also are used in the transition to non-driver who uses transportation alternatives. The premise for the research notes that most licensing jurisdictions in Australia currently employ age-based assessment programs as a means for managing older driver safety, yet available evidence suggests that these programs have no safety benefits. The article describes a

community referral-based model license reassessment procedure for identifying and assessing potentially unsafe drivers; and presents a strategy for filling the gap between identification of impaired driving and referral to transportation options.

B. Alternatives to Driving

Abstracts in this section focus on the concept and practice of identifying and promoting alternatives to driving the automobile.

1. Coughlin, J. F. & Cobb, R. W. (2000). How will we get there from here? *Journal of Aging & Social Policy*, *11*(2-3): 201-210.

   This policy piece is included because it emphasizes the need for transportation options for our aging society. Existing options are discussed, and the article calls for a national transportation policy for older adults, which extends past the existing options. The article discusses national transportation policy for older adults and current transportation challenges faced by older adults who are aging in place. According to the authors, driving, for many, remains a crucial part of independent aging; however, a combination of personal choice and diminished capacity may conspire to limit the mobility afforded by a car. The options of walking, using public transportation, using paratransit transportation systems that respond to the calls of their passengers, and relying on family and friends for transportation needs are discussed. The authors also make the case that the greatest barrier to older adults using public transportation is that they are aging in place in the suburbs or rural areas, and their mobility patterns are suburb to suburb, not suburb to city. The article suggests that a national transportation policy for older adults should extend beyond the usual formula funding that finances transit, demand-response alternatives, and infrastructure; and that it should support meaningful research and development incentives to businesses. Objectives, actions, and public policy strategies are offered for agenda setting, institutional change, and technological innovations.

2. Finn, J., & Sterns, H. (Eds.) (2003). The Mobile Elder: Getting Around in Later Life. *Generations*, *27*(2): 1-77.

   This special issue of *Generations*, entitled "The Mobile Elder," examines the many ways older people get around and how they define and shape their world. Although the personal automobile is the primary means of getting around, this special edition is not merely focused on older drivers. Additionally, The special issue discusses the implications of older-adult transportation for aging services organization and public policymakers as they plan for and respond to an increasingly large and diverse population of older adults in the United States. Topics such as walking and biking, keeping older adults on the road, improving transportation and public transportation service models, and the mobility continuum are included. The following articles are contained in this special issue:

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1. “Moving along the mobility continuum: Past, present, and future.” Harvey L Sterns, Jon E. Burkhardt, John W. Eberhard.
2. “Public transportation: Options to maintain mobility for life.” Ronni Sterns, Vincent Antenucci, Charles Nelson, Nina Glasgow.
3. “Public transportation service models. Ways that work.” Ronni Sterns, Vincent Antenucci, Charles Nelson, Nina Glasgow.
4. “Serving older people by improving transportation.” Phyllis Madachy.
5. “The freedom of the open road: Driving and older adults.” James McKnight.
6. “Myths and facts about older drivers.” Sue Sampson, Loren Staplin.
7. “Driving and dementia.” Linda A Hunt.
8. “Keeping older adults on the road: The role of occupational therapists and other aging specialists.” Janie B Scott.
9. “Public policy and transportation for older people.” Audrey K Straight.
10. “Safe mobility for a maturing society: A national agenda.” Jeff Finn.
11. “Enhancing mobility: Britain as an example of European experience.” Kit Mitchell.
12. “What does giving up driving mean to older drivers, and why is it so difficult?” Jean T. Shope.
13. “A prisoner released: Helping older people resume driving.” Jane C Stutts.
14. “A low-cost, low-maintenance approach: The Pasadena PasRide Pilot.” Helen Kerschner.
15. “Mobility and older people.” Katherine Freund.
16. “Independent Transportation Network: The next best thing to driving.” Katherine Freund.
17. “Past 90, and still on the road.” Hila Colman.
18. “Walking and biking: Transportation and health for older people.” Molly E. French.
19. “Biking trek at age 60-plus.” George Walgrove.
20. “Mobility for the inner journey.” Harry Sky.

3. Johnson, E. E. (2003). Transportation Mobility and Older Drivers. *Journal of Gerontological Nursing*, Bol *29*(4): 34-41.

   This article examines driving cessation and the transition from being a driver to a non-driver from medical and psychological perspectives. The author examines the age-related physiological changes and health conditions that affect the driving performance of older adults. Three broad categories of changes that may affect driving are visual, cognitive or psychomotor, and musculoskeletal function. Age-related visual changes that affect driving are visual processing speed, dim illumination, dynamic vision, near vision, and visual search. Cognitive changes that may affect driving include distraction by irrelevant stimuli, decline in spatial orientation, decreased visual searching, and decreased visuomotor integration. Psychomotor slowing is a common experience of aging. Changes in musculoskeletal function, such as decreased strength and flexibility, may affect driving ability. The author makes the case that if driving cessation is the only alternative, maintaining the

older adult's dignity and finding alternative modes of transportation are priorities. At the same time, the aforementioned changes that affect critical driving skills may also have consequences related to navigating transportation options.

4. Kostyniuk, L. P. & Shope, J. T. (2003). Driving and alternatives: Older drivers in Michigan. *Journal of Safety Research, 34*: 407-414. Retrieved on November 12, 2010, from ScienceDirect

   The purpose of this study was to examine older drivers in Michigan and their mobility options. A telephone survey was used to collect information from Michigan drivers and former drivers on transportation choices, alternatives to driving, and plans for experiencing when they could no longer drive. Results indicate a significant number of older adult households owned at least one vehicle, and the personal vehicle was the primary mode of transportation. Former drivers were mostly dependent on relatives and friends for rides. Many seniors were not aware of public transportation or infrequently used it. Driving cessation was not a worry for older drivers, and more than half of them expected to keep driving beyond five years, even though they might have driving problems. The authors concluded that older seniors residing in Michigan were dependent on their personal vehicles; desired to drive themselves; and lacked knowledge of public transportation. These conditions must be taken into consideration when developing alternative methods of transportation to enhance the mobility of older adults.

C. Senior Mobility

Abstracts in this section address the broad topic of mobility in the context of physical movement from the perspectives of research, travel patterns, assistive technology, community planning, and pedestrian safety.

1. AARP Housing and Mobility Options (2010). *The Getting Around Guide: An AARP Guide to Walking, Bicycling and Public Transportation.* Washington, DC. Retrieved February 6, 2011, from: http://www.aarp.org/home-garden/transportation/info-11-2010/getting_around_guide_intro.html

   Walking, bicycling, and public transportation often are the transportation options for those without cars. AARP presents a guide for those without cars by giving pointers on how to use these alternative means of travel. Walking is a good way to get exercise as well as to get to a destination. Bicycling is a fun and healthy transportation option. Public transportation is an inexpensive way to travel and includes buses, vanpools, ridesharing, rail, and trolleys. AARP suggestions include how to get started and get out and about. Special transportation options and services for older adults may also be available. Knowing what options are available prepares the older adult for when the time comes to cease driving.

2. Bailey, L. (2004). Aging Americans: Stranded Without Options. Surface Transportation Policy Project: Washington, DC. Retrieved June 22, 2010, from: http://www.transact.org/report.asp?id=232

   This report presents data from the National Household Transportation Survey (2001) and places them in the context of other research on transportation mobility and options for older adults. The report states that more than one in five Americans age 65 and older (21%) do not drive due to health and safety concerns, access to a car, or personal preference; and that more than 50% of non-drivers in this age group stay at home on any given day. The report states that in many communities, public transportation is not a practical option due to the non-drivers health status or lack of convenient access to public transportation. The author also suggests that paratransit and specialized transportation are the only feasible modes of transportation other than asking for and getting a ride from others; and that making public transportation available to a greater number of older persons will require substantial investment to the infrastructure and considerable planning and coordination. Immediate action is urged: to substantially increase investment in public transportation systems; to improve coordination among transportation and human service agencies; to complete streets by providing a place for safe walking and bicycling; to adopt federal guidelines for safer roads for older drivers and pedestrians; and to preserve the flexibility of state and local governments to spend federal

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transportation funds on improving public transportation and other alternatives that will meet the mobility needs of older people.

3. Collia, D., Sharp, J., & Giesbrecht, L. (2003). The 2001 national household travel survey: A look into the travel patterns of older Americans. *Journal of Safety Research, 34*(4): 461-470.

   This much referenced study highlighted the personal automobile as the major travel mode for older adults and the use of community transportation options as an almost non-existant phenomenon for most. Using the 2001 National Household Travel Survey (NHTS), the researchers highlighted the travel patterns of older adults living in the United States. They determined personal travel characteristics for the population age 65 and older, and then compared these patterns with younger adults, ages 19-64. Travel patterns indicate that older Americans travel extensively and rely on personal vehicles as heavily as their younger counterparts, although older adults tend to take fewer trips, travel shorter distances, and have shorter travel times. Older people take long-distance trips at about the same rates and show a strong preference for using personal automobiles. The authors concluded that although older persons travel extensively, they are less mobile than their younger counterparts, and that this differential is most pronounced among older women and those with self-reported medical conditions that affect their ability to travel outside their homes. Thus, people who must give up their personal vehicles require alternative means of transportation, yet use of alternative transportation is relatively low. For example, excluding personal vehicles and walking, all other means of transportation account for about 2% of daily travel; and for those with medical conditions that affect travel, only about 12% use special transportation services.

4. Dickerson, A. E., Molnar, L. J., Eby, D., Adler, G., Bédard, M. Berg-Weger, M., Classen, S., Foley, D., Horowitz, A., Kerschner, H., Page, O., Silverstein, N. M., Staplin, L., & Trulillo, L. (2007). Transportation and Aging: A Research Agenda for Advancing Safe Mobility. *The Gerontologist, 47*(5): 578-590.

   In this collaborative effort from members of the Transportation Interest Group of the Gerontological Society of America, the authors develop a thoughtful review of what is currently known about older driver safety and mobility. They also highlight important research needs in a number of key areas that hold promise for achieving the safety and mobility goals for the aging baby boomer population as well as for current and future older drivers and transportation options users. Using a framework for transportation and safe mobility, the authors describe key areas of screening and assessment, remediation and rehabilitation, vehicle design and modification, technological advancements, roadway design, transitioning to non-driving and

alternative transportation, or meeting the goals of accident prevention and mobility maintenance of older adults. Four themes emerged from this review: 1) Safe transportation for older adults is important. 2) Older adults have a variety of needs, abilities, and resources. 3) Research to help meet the transportation needs of older adults may be of benefit to persons with disabilities. 4) Transportation issues concerning older adults are multifaceted. The authors contend that safe mobility is essential to continued engagement in civic, social, and community life, and to the human interactions necessary for health, well-being, and quality of life. They conclude that when safe driving is no longer possible for older adults, safe and practical alternative transportation must be available. Furthermore, older adults are individuals with specific needs, abilities, and resources. Not all older adults will have difficulty meeting their transportation needs, and no single transportation solution will work for all people. Research and many countermeasures intended to help meet their transportation needs will likely be universal and also benefit younger users of the transportation system, particularly those with disabilities.

5. Eby, D. W., Molnar, L. J., & Kartje, P. S. (2009). *Maintaining Safe Mobility in an Aging Society*. New York, NY: CRC Press. ISBN: 9781420064537.

   This comprehensive guide to safe mobility provides an in-depth introduction to the topic. It begins with a discussion of population and driving trends; and traffic safety and age-related declines including psychomotor, visual, and cognitive abilities that affect ones driving a personal automobile. Critical driving skills, medical conditions and driving, and medications and driving are reviewed as well as screening and assessment of the older driver. Chapters on licensing, legal and policy issues, and education and rehabilitation, as they pertain to the older driver, complete the background sections. Sections on vehicles, advanced technology, and roadway design discuss keeping the older driver in his/her car longer. The section on driving retirement covers the difficult transition to transportation options. The chapter on community options highlights traditional public transit, paratransit, private transit, supplemental transportation programs, walking, bicycling, and other forms of transportation as well as the need to create more senior-friendly community mobility options. The book highlights the many transportation options discussed in the literature today.

6. Foley, D. J., Heimovitz, H. K., Guralnik, J. M., & Brock, D. B. (2002). Driving life expectancy of persons aged 70 years and older in the United States. *American Journal of Public Health, 92*(8): 1284-1289.

   Foley and colleagues illustrate that life expectancy exceeds safe driving expectancy and that everyone needs to plan for a future where driving is no longer possible. One

can infer from the study that transportation options are necessary for the well-being of older non-drivers. Using data from the first and second waves (1993 and 1995, respectively) of the Asset and Health Dynamics Among the Oldest Old study, the authors estimated total life expectancy and driving life expectancy of US drivers aged 70 and older. They found that drivers aged 70-74 years had a driving expectancy of approximately 11 years based on their longer life expectancy; women rely on alternative sources of transportation for ten years, compared to men relying on alternative sources of transportation for six years. The authors concluded that nationwide many older drivers stop driving each year and must seek alternative sources of transportation; and that, because of differences in life expectancy, women require more years of support for transportation than men after age 70.

7. Freund, K. & Vine, J. (2010). Aging, Mobility, and the Model T: Approaches to Smart Community Transportation. *Generations. 34*(3): 76-82.

   This article ends with the message, "If we are willing to rethink some of our fundamental assumptions about transportation, in the future, people of all socioeconomic classes, including a growing number of older Americans who have given up driving, will have access to more mobility with fewer resources and less impact on the environment." The general theme of the article is that the demographics of aging and the way the transportation issue is framed are changing, and it is important to ensure that transportation policy and service delivery methods change, today as well as tomorrow. For example, not only is the aging population increasing dramatically, the issue of transportation for older adults has been reframed from a discussion of aging drivers to a discussion of aging and mobility. Another example is the future prospect for the transportation agenda to evolve from emphasizing public transportation services to promoting private transportation services. For older adults, this is welcome news, for the reality is that mass transit was never built for people with diminished physical or mental capacity. For them, the preference is the private automobile. The authors provide several examples of private shared-ride transportation services that they predict will be increasingly available in the future. Examples are Zipcar, I-Go, and volunteer driver programs such as Faith in Action programs funded by the Robert Wood Johnson Foundation. Finally, the article makes a strong case for policies that remove barriers or create incentives for using private resources for sustainable, senior transportation projects that are currently underway.

8. Hartford, Inc. (2010).We Need to Talk: Family Conversations with Older Drivers. Retrieved February 6, 2011, from: http://hartfordauto.thehartford.com/UI/Downloads/FamConHtd.pdf
   And,

At the crossroads. A guide to Alzheimer's disease, dementia, and driving. Retrieved February 6, 2011, from: http://hartfordauto.thehartford.com/UI/Downloads/Crossroads.pdf

The Hartford Insurance Company has produced excellent guidebooks written in clear accessible language, directed to family members to help start and continue the conversation about driving cessation and the transition to community mobility options. *We Need to Talk* is an updated guidebook that provides families with easy-to-use, practical information to help them plan ahead and initiate productive and caring conversations with older adults about driving safely. *At the Crossroads* is an updated guidebook to help families determine when it's time for loved ones with dementia to stop driving. These booklets can be ordered in large quantities free of charge and in multiple languages. They are effective resources for professionals for leading community conversations on transportation. The booklets can also be downloaded from the websites indicated above.

9. Hunter-Zaworski, K. (2007). Getting Around in an Aging Society. *Planning*. 22-25.

The authors emphasize the need for planners and engineers to collaborate to overcome challenges to maintain senior mobility. They state that innovative transportation options are needed to aid or supplement those experiencing driving cessation and three issues emerge: parking for disabled drivers and passengers, community buses, and neighborhood electric vehicles. The places for disabled parking may be abused or misused, and suggested solutions are special permits and public education. Buses may fulfill the needs of many seniors, especially those who frequent places on a fixed-route. However, challenges for buses include finding a vehicle that is well-equipped and meets demands of service life and durability. Neighborhood electric vehicle (NEV) may be environmentally friendly and used in safe enclosed communities. However, planners must consider the needs of the aging population when designing livable communities. All these methods can assist seniors to keep their independent and active lives.

10. Langlois. J. A., Keyl, P. M., Guralnik, J. M., Foley, D. J., Marottoli, R. A. & Wallace, R. B. (1997). Characteristics of older pedestrians who have difficulty crossing the street. *American Journal of Public Health, 87*(3): 393-7.

This study examines the sociodemographic and health characteristics and problems of older pedestrians. Walking is identified as an important transportation option. Interviews and assessments were conducted with 1249 enrollees aged 72 or older from the New Haven, CT, Established Populations for Epidemiologic Studies of the Elderly. Approximately 11% of those surveyed reported difficulty crossing the street.

Older pedestrians needing help in one or more activities of daily living were more than ten times as likely as others, and those with the slowest walking speeds were nearly three times as likely as others to report difficulty crossing the street. Less than 1% of those surveyed had a normal walking speed sufficient to cross the street in the time typically allotted at signalized intersections. The authors concluded that crossing times at signalized intersections in areas with large populations of older persons should be extended, and the recommended walking speed for timing signalized crossings should be modified to reflect the range of abilities among older pedestrians in the particular area.

11. Lord, S., Despres, C., & Ramadier, T. (2010). When Mobility Makes Sense: A Qualitative and Longitudinal Study of the Daily Mobility of the Elderly. *Journal of Environmental Psychology*. 1-10.

    With mobility becoming more difficult with age, reduced autonomy and "auto-mobility" is inevitable. Older adults must keep up with daily mobility to live fulfilling lives. However, this depends on their ability to drive and access to a personal vehicle. This study uses a qualitative and longitudinal perspective to discover how older adults stay mobile and adapt to their surroundings. From 1999 to 2006, 22 suburbanites aged 62 to 89 were interviewed and followed. Results indicate that older adults inevitably head towards immobility. Fatigue was the most common complaint. A change in environment can facilitate aging. Closer spatial and family proximities increase productive aging. Those in urban areas have a combination of personal meanings and experiences and a loss of autonomy. Seniors who postpone adaptation to their environment and experience a gradual decline of mobility, call for immediate change. Aging in the suburbs illustrates an increased dependency on personal vehicles. Seniors aging in place have the advantage of being in familiar surroundings and seniors depend on economic and social resources to maintain their lifestyles. Finally, the study illustrates the relevance of the meaning of "home" to individual mobility.

12. Lynott, J., McAuley, W., & McCutcheon, M. (2009). Getting out and about: The Relationship between urban form and senior travel patterns. *Journal of Housing for the Elderly*, *23*(4): 390-402.

    As the population continues to grow and expand, many older adults are extending their residencies from the urban core to the suburban surroundings. The authors present a relationship between travel patterns among older adults and their urban/suburban settings. A telephone survey was used to examine 1,636 persons 75 years and older and their travel patterns in Northern Virginia. The response rate was 45.1% with dependent variables representing various types of travel behavior. Demographic results showed most of the respondents were white and female, have

current driver's license, and were between 75-84 years of age. More trips were associated with being male, having a driver's license, having more education, and having a better score on health-disability measures. Senior urban/town dwellers tended to less likely drive, more likely to take more trips each week and get out of their homes, and more likely to use fixed-route transportation or walk. All study participants had health as a significant factor, with seniors in better health getting out more often. Environmental setting influenced the travel patterns of seniors as was illustrated by the differences between seniors living in urban and suburban areas. Understanding these differences could help communities develop a better strategy to address the mobility needs of older adults.

13. Mann, W. (Ed.) (2005). *Community Mobility: Driving and Transportation Alternatives for Older Persons*. N.Y., New York: Haworth Press. (172p).

    This book includes nine essays that examine issues related to the assessment of older drivers and transportation alternatives/options for older adults who can no longer drive themselves. The book includes articles about driving transitions and the need for transportation options.

    1. "Relationship of Health Status, Functional Status and Phychosocial Status to Driving Among Elderly with Disabilities." William C. Mann, Dennis P. McCarthy, Samuel S. Wu, Machiko Tomita.
    2. "Approaches to Improving Elders' Safe Driving Abilities." Dennis P. McCarthy.
    3. "The Relationship of Home Range to Functional Status and Cognitive Status of Frail Elders." Roxanna M. Bendixon, William C. Mann, Machiko Tomita.
    4. "The Influence of Climate and Road Conditions on Driving Patterns in the Elderly Population." Fred Sabback, William C. Mann.
    5. "Changes over Time in Community Mobility of Elders with Disabilities." Christy C. Hendrickson, William C. Mann.
    6. "Self-Regulation of Driving by Older Persons." Summer Ruechel, William C. Mann.
    7. "International Older Drivers Consensus Conference on Assessment, Remediation and Counseling for Transportation Alternatives: Summary and Recommendations." Burton W. Stephens, Dennis P. McCarthy, Michael Marsiske, Orit Shechtman, Sherrilene Classen, Michael Justiss, William C. Mann.
    8. "Recommendations of the Canadian Consensus Conference on Driving Evaluation in Older Drivers." Nicol Korner-Gitensky, Isabelle Gelinas, Malcolm Man-Son-Hing, Shawn Marshall.
    9. "Homebound Older Individuals Living in the Community: A Pilot Study." Sarah Sanders, Jan Miller Polgar, Marita Kloseck, Richard Crilly.

14. Marottoli, R. A., Mendes de Leon, C. F., Glass, T. A., Williams, C. S., Cooney, Jr. L. M., & Berkman, L. F. (2000). Consequences of driving cessation: Decreased out-of-home activity levels. *Journals of Gerontology Series B: Psychological Sciences & Social Sciences, 55B*(6): S334-340.

This article documents the need for transportation options. It provides an introduction to the consequences, not only of driving cessation, but of the absence of transportation options when older adults no longer drive. The authors discuss increasing age, socioeconomic factors, and declining function and health outcomes, including depression, that have been linked to driving cessation. The research was designed to test the hypothesis that driving cessation leads to a decline in out-of-home activity levels. Using a 1989 survey of driving practices administered to non-institutionalized members of the New Haven Established Populations for Epidemiologic Studies of the Elderly (EPESE), an activity measure was created based on self-reported participation in nine out-of-home activities. Driving cessation was strongly associated with decreased out-of-home activity levels.

15. Marquie, J. C. & Gabaude, C. (2010). Editorial. Aging, Transportation and Mobility: Current Issues. *Le Travail Humain*, *73*: 1-5. Retrieved on November 12, 2010, from: http://www.cairn.info/revue-le-travail-humain-2010-1-page-1.htm

This editorial introduces current issues of mobility in aging persons using transportation. Mobility becomes increasingly difficult with age. Many show a strong dependence on their personal cars. Some studies show that elders would stop walking or use public transportation before stopping driving. To overcome this obstacle, the authors suggest that research needs to take elders' characteristics into account including infrastructure, equipment, and service designs. New technology may also improve current situations in sustaining mobility in old age. One research direction explains the importance of safety in elder mobility. Another takes optimization processes during travel into consideration. The authors present four original articles included in the issue. One article is by J. Roge, J. Ferreti, and G. Devreux about the influence of color contrast with age differences. The second article is by C. Gabuade, J.C. Marquie, and F. Claudel on evaluating a driving behavior survey. In the third article, M. Pereira, M.P. Bruyas, and A. Simoes present the impact on elders while using several in-systems during driving. Finally, S. Lafont, C. Gabaude, L. Paire-Ficout, and C. Gabrigoule offer an article on driving-related injuries with age-related risk.

16. Mollenkopf, H., Marcellini, F., Rouppila, I., Szeman, Z., & Tachen, M. (Eds.) (2005). Enhancing mobility in later life (Assistive Technology Research Series). Personal coping, environmental resources and technical support. The out-of-home

mobility of older adults in urban and rural regions of five European countries. Amsterdam, Netherlands: IOS Press. (325 pp.)

This book explains the goals of the MOBILATE—Enhancing Outdoor Mobility in Later Life: Personal Coping, Environmental Resources, and Technical Support Project conducted in five European countries. Using the MOBILATE survey questionnaire and mobility diaries completed by 3,950 study participants aged 55 and older in urban and rural areas of Finland, Germany, Hungary, Italy, and the Netherlands, the book reviews the significance of out-of-home mobility in modern society and the background conditions for outdoor mobility. The book presents the rationale, methodology, and results of a study analyzing factors designed to enhance out-of-home mobility in later life. It also discusses country-specific and cross-national results of the survey of physical health and mobility, transportation behavior and realized journeys and trips, health and leisure activities, psychological aspects of outdoor mobility, social relations, and mobility and the built-up environment. The book concludes by presenting a new concept of out-of-home mobility, examines mobility and quality of life, and explores the effects of socioeconomic status and mobility. The book includes chapter references and the MOBILATE diary.

17. Rosenbloom, S. (2003). The Mobility Needs of Older Americans: Implications for Transportation Reauthorization in *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, (pp. 227-254). Bruce Katz and Robert Puentes (Eds.), Brookings Institution Press. Retrieved June 16, 2010, from: http://www.brookings.edu/reports/2003/07transportation_rosenbloom.aspx

    The reauthorization of the federal transportation law, the Transportation Equity Act for the 21st Century (TEA-21), presented an opportunity for Congress to respond directly to the diverse mobility needs of older Americans. The article highlights the different subsets of the elderly, including those who still drive, those who have given up driving, and those who never drove. The author states that programs should consider where older people live and their ethnic, racial, and cultural backgrounds. The author calls for policymakers to: plan explicitly for the mobility needs of the elderly; target public transit services and facilities for the elderly; support alternative transport options; and improve the highway and street infrastructure. Additionally, the author challenges the assumptions that underlie most policy debates on transportation and the elderly, describes how an aging society adds to a range of transportation problems, and discusses special approaches and solutions necessary to meet the mobility needs of over 70 million older persons in the coming decades.

18. Rosenbloom, S. & Herbel, S. (2009). The safety and mobility patterns of older women: Do current patterns foretell the future? *Public Works Management Policy, 13*: 338.

    The authors state that safety and mobility needs of older women are intimately related. Current generations of older women are very mobile as a result of their access to automobiles. Future generations will be even more dependent on them for their mobility, but they will suffer great losses in their mobility when they reduce or cease driving. However, if they continue to drive when they no longer should do so, the analysis indicates that accident and death rates will soar. To address the safety and mobility needs of older women, the authors suggest the need for a three-fold strategy. First, the roadway system must be altered to make it safer and easier for older drivers and pedestrians. Second, a range of supportive transit and paratransit alternatives must be developed. Third, the communities in which older women will age in place or to which they will move must be retrofitted to accommodate safe mobility options.

19. Siren, A. & Hakamies-Blomqvist, L. (2006). Does gendered driving create gendered mobility? Community-related mobility in Finnish women and men aged 65+. *Transportation Research Part.* F, *9*: 374-382.

    The literature often presents the topic of transportation and aging as gender neutral. However, women as a group have gained increasing importance in transportation research because they most likely outlive their spouses and face community mobility challenges. Mobility can maintain independence and active aging, both of which are crucial to older persons' well-being. This article examines associations between driving and mobility of older men and women. A mail survey was distributed among Finnish citizens aged 65+ (N=2500). The response rate was 62% (n=1522). Results indicate that older women do not drive as often as men. This is because older women held fewer licenses and used non-driving modes of transportation more frequently than men. As a result, older women were dependent on two factors for personal mobility: good health sufficient for walking and reliance on others for transportation. In addition, the older the women were, the more frequently they reported their wish to do more of the listed trips if their mobility was easier and unrestricted. The authors concluded that the prevention of older women's mobility loss is vital for personal and social health. However, the compounding effects of age and gender create different standards for personal mobility.

20. Silverstein, N. M., & Peters-Beumer, L. (2007). "Community Mobility and Dementia" in Cox, C. (Ed.) *Handbook for Social Work Practice and Dementia.* NY, New York: Springer Publishing Company.

This book chapter discusses community mobility and dementia and highlights the important role that social workers play in assisting individuals, their families, and their communities in understanding the components of safe mobility. The chapter also discusses working with others to develop community and individual strategies to assist individuals in the transition from driver to passenger, whether in a private automobile or public transit or paratransit. The role of social workers in cessation counseling also is highlighted and recommendations are made for social work intervention. The recommendations cover the areas of monitoring, assessment, and compliance with assessments. There is also a "call to action" to meet the transportation needs of people with dementia and their families, throughout the disease process. Additionally, the authors state that the five A's of senior-friendly transportation (availability, accessibility, acceptability, affordability, and adaptability) must be adapted to incorporate dementia-friendly qualities, whereby the concept of dementia friendliness is the first step towards a transportation network options agenda that incorporates elements of dementia-capable and dementia-specific services, with awareness that those they serve may now, or may serve in the future, have cognitive impairments. The authors envision dementia-friendly supportive transportation with trained dispatchers' and drivers' understanding of the disease with an ability to provide services in a sensitive and flexible manner. Passengers would not be left alone, and trained attendants would be in the vehicle when necessary. They would also accompany passengers to their destinations. The conclusion is that dementia-friendly services should be considered as a transportation options agenda moves forward.

21. Silverstein, N. M. (Guest Editor). (2008). Special Issue on Mobility. *Gerontology and Geriatrics Education*, *29*(4).

    This special issue on mobility includes eight articles by experts in the field of older drivers and senior mobility. The articles listed below cover topics including older drivers, driving assessment, transition to non-driving status, and issues surrounding mobility and transportation options after driving cessation. Together, the eight articles provide a strong introduction to the mobility challenges faced by older adults as they transition from the role as driver to passenger.

    1. "Older Drivers: Integrating Research and Education to Shape Practice." Wagner, D.
    2. "When Life Exceeds Safe Driving Expectancy: Implications for Gerontology and Geriatrics Education." Silverstein, N. M.
    3. "Applying Research to Licensing Agency Screening of Seniors for Fitness to Drive." Soderstrom, C.
    4. "Continued Driving and Time to Transition to Nondriver Status through Error-Specific Driving Restrictions." Freund, B. and Petrakor, D.

5. "Occupational Therapy and Older Drivers: Research, Education, and Practice." Stav, W.
6. "DriveWise: An Interdisciplinary Hospital-Based Driving Assessment Program." O'Connor, M., Kapust, L., and Hollis, A.
7. "At the Crossroads: Development and Evaluation of a Dementia Caregiver Group Intervention to Assist in Driving Cessation." Stern, R., D'Ambrosio, L. Mohyde, M., Carruth, A., Tracton-Bishop, B., Hunter, J., Daneshvar, D., and Coughlin, J.
8. "Volunteer Drivers: Their Contributions to Older Adults and to Themselves." Kerschner, H. and Rousseau, M.

22. U.S. Department of Transportation (2003). Safe Mobility for a Maturing Society: Challenges and Opportunities. DOT HS 809 745, Washington, DC: author. 31pp. Retrieved October 1, 2010, from: http://web1.ctaa.org/webmodules/webarticles/articlefiles/safe_mobility.pdf

This Department of Transportation publication developed by John Eberhard and Donald Trilling is based on a series of regional forums, focus groups, conferences, and stakeholder roundtables held during the several years prior to its publication. During these meetings, the vision of America's future transportation system evolved as follow: "A transportation system that offers safe mobility to all people and allows older persons to remain independent and to age in place. Investments in highway and pedestrian infrastructure and public transportation services support independence. Medical and social service communities, transportation managers, motor vehicle administrators, and caregivers work together to extend safe driving and to offer other convenient and affordable transportation options when driving and walking must be curtailed. Public and private organizations form new partnerships to enable all citizens to enjoy safe mobility for life (p. vi)." This vision focuses on both automobile and alternative modes of transportation. To achieve it, the authors suggest seven areas of focus that must be targeted: 1. Safer, easier-to-use roadways and walkways. 2. Safer, easier-to-use automobiles. 3. Improved systems for assessing competency of older drivers and pedestrians. 4. Better, easier-to-use public transportation services. 5. Targeted state and local action plans. 6. Better public information. 7. Basic and social policy research.

23. Webber, S. C., Porter, M. M., & Menec, V. H. (2010). Mobility in Older Adults: A Comprehensive Framework. *The Gerontologist*, *50*(4): 443-450.

The authors' premise is that mobility is crucial to active aging and linked to quality of life and health status. The paper defines mobility as the "ability to move oneself within environments that expand from one's home to the neighborhood and to regions beyond." Different disciplines have their own methods of defining and measuring

mobility. Other frameworks are introduced to help define mobility in older adults. This proposed mobility framework, which includes cognitive, psychosocial, physical, environmental, and financial determinants, paves a way for more interdisciplinary research to keep older adults dynamic and independent. According to the authors, these five determinants are influenced by gender, culture, and biography of the older adult. The framework is further cross-sectioned into seven life-spaces: room, home, outdoors, neighborhood, service community, surrounding area, and world. With this theoretical model, researchers from across disciplines can work together to develop program delivery and policies to maximize mobility in aging persons.

24. Wolff-Branigin, M. & Wolff-Branigin, K. (2008). The Emerging Field of Travel Training Services: A Systems Perspective. *Journal of Public Transportation, 11*(3).

According to the authors, "Travel training provides a promising approach for moving persons from paratransit to fixed-route transportation services" in that it teaches individuals to use public transportation. The authors define travel training as a program that provides instruction in travel skills to individuals with disabilities, with the exception of visual impairment. The approach and travel skills can be used to demonstrate to older adults how to increase their independence by using public transportation. The paper discusses research efforts to: (1) quantify current practices, capacities, and outputs of travel trainers employed by transit authorities and agencies; (2) identify initial trends to inform travel trainers and organizations attempting to improve their service; and (3) propose an evaluation and research agenda to enhance the travel training profession. The paper includes the methodology (sample, instrument, and data analysis) and the results (descriptive statistics, inferential statistics, and qualitative responses). The authors offer three suggestions for further study: (1) conducting efficiency analysis including cost/benefit analysis and cost effectiveness studies; (2) developing a generalized database with a core set of variables for future collection by travel training programs; and (3) infusing a developmental evaluation approach to ensure that providers create a model whereby indicators of sustainability emerge.

D. Travel Options

Abstracts in this section address transportation alternatives and options for getting older adults where they need to go and include public transportation, ADA paratransit, human service and senior transportation programs, and volunteer driver programs.

1. Beverly Foundation Fact Sheet Series Vol. 1 (1-10). The series was completed in December 2008. Retrieved July 6, 2011, from: http://www.beverlyfoundation.org/library/index.html#facts

The ten fact sheets in this series each comprise a total of four pages and are formatted in a similar fashion with the first page providing highlights of the contents and an introduction to the topic. Topics addressed in the fact sheets include: **#1** a summary of the work of **the Beverly Foundation**; **#2** a discussion of **Giving Up the Keys** and the challenge of cessation when older adults give up their keys; **#3** information about the 830 **STPs** (Supplemental Transportation Programs for seniors**) in America** in the Beverly Foundation database through 2007; **#4 STPs in Rural America,** with data on senior transportation issues and services in areas described by STPs as rural; **#5** the Beverly Foundation's **5A's of Senior Friendly Transportation** (availability, acceptability, accessibility, adaptability, and affordability) with a "senior friendliness" calculator; **#6 Volunteer Driver Programs** serving seniors describes volunteer driver programs and presents data on 543 volunteer driver programs; **#7 Volunteer Drivers** discusses roles and responsibilities of drivers and presents data on 714 volunteer drives; **#8 Transportation and Dementia** introduces information about providing transportation to people with dementia; **#9 The TRIP Model**, sometimes called "friends helping friends," model emphasizes low-cost volunteer programs in which passengers recruit their own drivers; and **#10 STAR Search/Awards** details the Foundation's 2000 – 2007 STAR Search survey and STAR Awards program and provides a list of the 49 STAR Award Winners through 2007. A series of ten new senior transportation fact sheets (jointly published by the Beverly Foundation and the University of Massachusetts Boston Gerontology Institute) will be available in December 2011.
The URLs for the Beverly Foundation's Fact Sheets are listed below:

1. **The Beverly Foundation**

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http://www.beverlyfoundation.org/library/documents/fact_sheets/Fact%20Sheet%201%20Beverly%20Foundation%20Fact%20Sheet.pdf

2. **Giving Up the Keys**
   http://www.beverlyfoundation.org/library/documents/fact_sheets/Fact%20Sheet%202%20Giving%20Up%20The%20Keys.pdf
3. **STPS in America**
   http://www.beverlyfoundation.org/library/documents/fact_sheets/Fact%20Sheet%203%20STPs%20in%20America..pdf
4. **STPS in Rural America**
   http://www.beverlyfoundation.org/library/documents/fact_sheets/Fact%20Sheet%204%20STPs%20in%20Rural%20America.pdf
5. **5A's of Senior Friendly Transportation**
   http://www.beverlyfoundation.org/library/documents/fact_sheets/Fact%20Sheet%205%20Transportation.assistance.pdf
6. **Volunteer Driver Programs**
   http://www.beverlyfoundation.org/library/documents/fact_sheets/Fact%20Sheet%206%20Vol%20Driver%20Programs.pdf
7. **Volunteer Drivers**
   http://www.beverlyfoundation.org/library/documents/fact_sheets/Fact%20Sheet%207%20Vol%20Drivers.pdf
8. **Transportation and Dementia**
   http://www.beverlyfoundation.org/library/documents/fact_sheets/Fact%20Sheet%208%20transportation.Dementia.pdf
9. **The TRIP Model**
   http://www.beverlyfoundation.org/library/documents/fact_sheets/Fact%20Sheet%2010%20STAR%20Search.pdf

2. Beverly Foundation & TRIP Program. (2005). The TurnKey Kit: A Web-Based Resource for Volunteer Driver Programs. Washington, DC: Beverly Foundation & AAA Foundation for Traffic Safety. Retrieved June 29, 2011, from: http://www.beverlyfoundation.org/turnkeykit/

   The TurnKey Kit was developed as a no-cost technical on-line assistance tool. Its contents can be downloaded free of charge. The Kit provides information about how to plan, organize, implement, and evaluate volunteer driver programs. Its special purpose is to support and promote the expansion of volunteer programs that provide transportation to older adults in America. The topics of technical support included in the TurnKey Kit are: The Planning Kit, the Implementation Kit, The Evaluation Kit, and the TRIP Kit (volunteer driver program model). The informational materials draw on the research of the Beverly Foundation and the practical, service delivery experience of the TRIP program.

3. Beverly Foundation (2007). Your STP Clearinghouse: A "How to Guide for Developing a State-Wide Clearinghouse of STPs." Pasadena, CA: The Beverly Foundation. Retrieved June 29, 2011, from: http://www.beverlyfoundation.org/library/documents/star/2006%20STAR%20Search-Awards%20Report.pdf

   In 2006, the Beverly Foundation's STAR Search Survey and STAR Awards program targeted STPs (Supplemental Transportation Programs for seniors) in California. Its purpose was to gather information about STPs in California, to give special STAR Awards for Excellence, to create a database and clearinghouse, and to create a "how to" guide that would be available to other states. Three of these objectives were met in 2006; and in 2007, the "how to" guide was developed. In addition to an introduction of STPs, the guide includes the following steps: (1) determine objectives, (2) decide on sponsors, (3) select a lead organization, (4) undertake a survey, (5) analyze and report the results, and (5) create a web-based clearinghouse. Part 4 includes helpful information about the survey process, and part 6 includes the purpose and method used in California.

4. Beverly Foundation & AAA Foundation for Traffic Safety. Supplemental Transportation Services for Seniors (STPs) (2001); and STPs in America-Update (2004). Beverly Foundation & AAA Foundation for Traffic Safety. Retrieved February 6, 2011, from: http://www.beverlyfoundation.org/library/documents/stp/STPsInAmerica2001_report.pdf http://www.beverlyfoundation.org/library/documents/stp/STPsInAmerica2004_report.pdf

   These two reports were the result of cooperative efforts between the Beverly Foundation and the AAA Foundation for Traffic Safety. The content of the reports was taken from the initial (2000) STAR Search survey of STPs in America and subsequent STAR Search Surveys through 2003. While the reports include brief summaries of survey methodology, their emphasis is on the survey results, including history of the responding organizations; their locations; the transportation services they provide; their finances and risk management approaches; and their problems, solutions, and contributions. The first report introduces the 5 As of senior-friendly transportation, and the second report describes the 5 As and their potential value of understanding transportation from the perspective of "senior friendliness." The first report (2001) also includes profiles of the Beverly Foundation's STAR Award winners and six case studies. The second report (2004) introduces a variety of Concepts and Practices of STPs in America including the dilemma of transportation dependency, a template of ground transportation options, and the STP Model. It also includes a discussion of the STAR Awards winners, and an index of 419 STPs respondents to STAR Search surveys. These reports provide the first survey data of transportation services in America that provide specialized transportation for older

adults, and the first glimpse of the organization, management, and service delivery of those organizations.

5. Burkhardt, J. E. (2007). High-Quality Transportation Services for Seniors. Rockville, Maryland: WESTAT. Retrieved October 1, 2010, from: http://www.tc.gc.ca/eng/policy/transed2007-pages-1298-1894.htm

   According to the authors, to maintain independence and freedom, older people need mobility. While the majority of older people provide their own mobility, most often by driving, this paper focuses on developing suitable transportation alternatives to the private car. These alternatives include developing better public transit services and instituting more attractive and cost-effective special transportation services. The outcome of focus groups with older people and transportation operators and case studies of transit operations were proposals for improvements to existing public transit services. The author suggests that to attract more older riders, those services providing public transit will need to be proactive: They will need to do more than wait for older people to become too old or infirm to drive. He suggests that transit agencies take the following nine actions: improve schedule reliability; provide "guaranteed ride home" services; find ways to welcome passenger not used to using public transit, including customer relations training for drivers, travel training for passengers, and "bus buddies"; find ways to assist older people to board vehicles when needed; improve information, both for trip planning and while traveling; add customer service features such as calling out stops; provide special vehicles for special events; minimize physical barriers; and put emphasis on polite, courteous drivers. Additionally, the author calls for multiple types of services offered at varying prices, to replace the "one size fits all" approach that currently exists for most public transit. He also calls for fundamental changes in five areas: consumer orientation, agency responsibilities, customer choice (multiple services types at varying prices), fare strategies, and advanced technologies.

6. Burkhardt, J., & Garrity, R. (2011).TCRP Report 144. Volume 2: Research Report. Washington, DC: Transportation Research Board.

   The subtitle of the report is "Sharing the Costs of Human Services Transportation." The report follows Volume 1, *The Transportation Services Cost Sharing Toolkit,* which leads the user through the process of setting up the necessary cost-accounting system, identifying the data requirements and measurement parameters, and describing procedures for applying the method. This report summarizes the study components that contributed to the formation of the toolkit. According to the authors, the need for the study grew out of historic recognition of difficulties associated with accurately measuring costs incurred in providing transportation services to improve

mobility, employment opportunities, and access to community services for persons who are transportation-disadvantaged, including older adults. These considerations are central to the promotion of coordination among many separate transportation providers. The report includes considerable insight into the challenges of identifying costs faced by human services that provide transportation services. It also provides a common, unified approach for calculating the full cost of providing transportation by all transportation providers(public transit authorities, human service agencies, not-for-profit agencies, or private for-profit providers). The authors emphasize data, data management, and reporting. They identify successful cost-reporting practices used by states and local providers. Chapter 7 addresses fundamental understandings needed to implement cost-sharing and suggests the benefits of having better transportation service and cost data; defines four different types of human service transportation services; and summarizes the different perspectives of human services and transportation agencies. Chapter 8 offers standardized definitions for services and costs and introduces a common chart of accounts. Chapter 11 offers recommendations related to data collection and reporting, transportation service types, cost allocation, and uniform service and cost-reporting requirements.

7. Burkhardt, J., & Kerschner, H. (2005). How to Establish and Maintain Door-Through-Door Transportation Services for Seniors. Washington, DC: A WESTAT project for the US Administration on Aging, U.S. Department of Health and Human Services. Retrieved October 2, 2010, from: http://www.beverlyfoundation.org/library/transportationassistance/HowToGuide_DoorThroughDoorTransportation.pdf

   In 2005, the US Administration on Aging contracted with WESTAT to prepare a "How-To" guide for providing door-through-door transportation services to older adults. Door-though-door services are described as a continuum of increasing levels of assistance. *Gentle support* opens doors and provides verbal guidance. *Physical support* provides the rider with physical assistance in walking or standing, climbing stairs, and other functions. *Activity support* means that the driver or escort stays with the rider and helps with the activity at the destination. *Personal support* means that the driver or escort may help the rider to put on a coat, shoes or boots, or assist in putting away groceries in the rider's home. The guide provides descriptions of five levels of assistance; includes alternative models of door-through-door services; case studies of door-through-door services; and suggestions on how to get started in providing door-through-door services. The guide also provides answers to frequently asked questions (such as how to handle risks, how to find drivers and other staff, and how to determine financial resources that might be needed). Also included is information about additional publications, useful websites, information from 22

case reviews, and supportive information on risk management and insurance. The authors summarize the report by saying, "While 'opening doors' is certainly a key feature of door-through–door transportation, it is the personal, hands-on support for riders that distinguishes this service from other transportation programs." (p. 3)

8. Burkhardt, J. E., McGavock, A. T., & Nelson, C. A. (2002). Improving Public Transit Options for Older Persons, *TCRP* Report 82. Retrieved October 1, 2010, from: http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_82v1b.pdf.

   This publication finds that older persons currently use public transportation for just 3% of their trips, and less than 12% of all older people have used public transit in the three months prior to being surveyed. It is expected that in the future this transit usage will increase tremendously and will expand to suburban and rural communities from central cities. However, the authors suggest that the simultaneous growth in the older population and their usage of public transit will pose substantial challenges for public transportation providers. This publication focuses on how public transportation providers can capture a significant proportion of the trips of tomorrow's older persons. Older travelers will demand high-quality transportation options, but providing these services will offer real payoffs for transit providers. Both short- and long-run strategies are presented. In the short run, transit agencies should improve schedule reliability and provide real-time arrival/departure information through advanced technologies; provide guaranteed ride-home services; strengthen customer relations, including training for drivers, travel training for passengers, and "bus buddies"; assist passengers in boarding and disembarking when needed; add features such as calling out stops and reserving more seats for older persons; work with human service organizations to better serve specialized travel needs; partner with others to build community support for more local transit funding; provide special vehicles for special events; minimize physical barriers; and place an emphasis on polite, courteous drivers. In the long run, providers will need to make some fundamental improvements in five areas, including consumer orientation, agency responsibilities, customer choice, fare strategies, and advanced technologies. The authors conclude that multimodal, coordinated transportation services will emerge, including today's familiar transportation services and some that have net yet been designed. Innovative services now in place can highlight best practices and will be able to guide future operations. Successful innovations modeling these best practices are featured in the report.

9. Easter Seals (2004). A Solutions Package for Volunteer Transportation Programs: Transportation Solutions for Caregivers. Easter Seals. Retrieved June 29, 2011, from: http://seniortransportation.easterseals.com/site/PageServer?pagename=NCST2_trans_

care

The purpose of the solutions package is to provide guidance and basic information to existing volunteer programs and to groups planning to start new ones. The informational material presented includes the identification of possible service assistance, determination of service area, possible funding opportunities, and vehicles and equipment. Considerable emphasis is placed on the recruitment and management of volunteer drivers; passenger considerations (including eligibility, rules and responsibilities, and trip scheduling); risk management (including liability, insurance and safety); and community relations (including knowing the audience, collaboration, and marketing). The manual includes numerous attachments related to the development of policies and the management and operations of volunteer driver programs.

10. Environment Victoria (2004). Getting about without a car: Guidelines for promoting healthy transport to older people. Victoria, Australia. 44 pp. Retrieved September 28, 2010, from: http://www.travelsmart.vic.gov.au/doi/doielect.nsf/2a6bd98dee287482ca256915001cff0c/eb0eb41665a7639dca256fd3001fe712/$FILE/GettingAbout.pdf

    This publication states that, as in the United States, discussions on mobility in Australia tend to focus on keeping older persons driving for as long as possible, then providing door-to-door community transportation for those who can no longer drive. Its intent is to offer Australians a more European model where the mobility options are broader and include walking, cycling, and public transportation as significant transportation choices, and to suggest that these options are not only practical, but are guidelines for promoting healthy transportation for older people. It is acknowledged that some healthy transport options exist in Australia, but little has been done to encourage older persons in Australia to utilize healthy transport. The publication highlights a pilot project for older Australians to "get about" without a car, and confirms that the population is very motivated to use the healthy transport choices of walking and public transportation. A featured pilot project took place at a retirement community near Melbourne. Residents were asked through a survey, focus groups, and discussion groups: "What would help older people to use healthy transport choices more often?" A plan was developed that approached "healthy transport" by encouraging both healthy behaviors and public transportation. The plan identified strategies such as providing clear and useful information about the healthy transport options; creating opportunities for older people to be involved in transport planning and program implementation; linking healthy transport to existing promotions, courses, and programs; improving infrastructure for walking; improving public transport services; and forming collaborative partnerships to fund projects. The report

summarized findings on the travel behavior of the older people in the pilot project and identified their motivations to use healthy transport choices and the barriers they face in using them.

11. Fiedler, M. (2007). Older people and public transport: Challenges and chances of an ageing society. Koln, Germany: European Metropolitan Transport Authority (EMTA). (116 pp.). Retrieved October 1, 2010, from: www.emta.com/IMG/pdf/Final_Report_Older_People_protec.pdf

    The objective of this report is to identify the problems and challenges of the aging society in Europe regarding public transportation, to observe how public transportation authorities are coping with it, and to develop suggestions and policy actions to improve current conditions. EMTA approached this by collecting and analyzing information from existing research. From this research, a survey was developed and distributed. Feedback was collected, and six cities were chosen to serve as examples for best practices. Results showed difficulties in definitions such as "Who is an old person?" The report found two concerns that need to be addressed: the public transportation system must be adapted to needs and expectations of seniors and seniors must actually use it. Research, consultation, coordination, and ease-of-services were identified as crucial in developing methods to maintain quality of life and an active lifestyle. Older adults awareness of alternative methods and public transportation also were deemed necessary. Lastly, integrated concepts that bring together "hard" aspects (infrastructure and vehicles) with "soft" aspects (service, safety, and communication) also were surmised as critical to success.

12. Foreman, C., Tucker, L., Flynn, J., & West. M. (2003). Chapter Four: Successful Strategies in Senior Transportation Services. In *Senior Transportation Alternatives: Why are they Important and What Makes Them Work?* Florida Department of Transportation, Tallahassee, FL BC, pp. 67-87. Retrieved October 12, 2010, from http://www.nctr.usf.edu/pdf/473-09.pdf.

    This chapter identifies creative and effective techniques used by various agencies providing transportation alternatives to seniors, with the idea that communities lacking in certain options and strategies can learn from these programs and adapt the strategies in their own communities. The strategies are categorized by issues of importance, as determined by focus groups, transportation provider survey, and literature review, as follows: client outreach, adequate funding, cost to participants' effective use of volunteers, convenience to seniors, and the preservation of dignity and independence. Within each category, best practices as well as model programs are highlighted. Cecil County Department of Aging in Maryland describes its "Road Show," a travelling information outreach presentation including multiple agency

sponsors. The Senior Connection, also in Maryland, highlights its Latino-Hispanic outreach and marketing. York County Community Action Program (YCCAC) in Maine has established a position of Marketing Director. The Independent Transportation Network, founding affiliate in Maine (ITNMaine), utilizes television and newsprint media by issuing public service announcements (PSAs) and press releases as a no-cost means of client and volunteer outreach, while also increasing ITN's visibility within the community.

13. Golob, T. F. & Hensher, D. A. (2007). The trip chaining activity of Sydney residents: A cross-section assessment by age group with a focus on seniors. *Journal of Transport Geography, 15*: 298-312.

    The authors cite studies related to the older adult population and the increased attention to their transportation needs; their growing demands for mobility and accessibility; and the variability in their travel behavior. Their premise is that, while the transportation needs of the elderly are just as significant as those of younger, non-retired populations, the increased need of older adults for transportation options makes it impossible for them to take advantage of traditional forms of public transport. Thus, their transportation issues take on even greater significance.

14. Hardin, J. (2003). Senior transportation: Toolkit and best practices. Washington, DC: Community Transportation Association of America. (116 pp) Retrieved October 1, 2010, from: http://search.yahoo.com/search;_ylt=AirEU_BWJ81ydf9hi0Loht2bvZx4?fr=yfp-t-701s&toggle=1&cop=mss&ei=UTF8&p=senior%20transportation%20toolkit%20and%20best%20practices

    The Senior Toolkit is a manual written to assist organizations in implementing transportation solutions for their participants. Senior Toolkit presents a structured overview about supplemental community transportation options for seniors, important for enhancing current practices. The manual is divided into four chapters. The first chapter introduces the plethora of dilemmas facing older persons regarding transportation. It also addresses the diversity of the older adult group from working older adults to those who are frail. An overview of community transportation is presented in the second chapter, which familiarizes the reader with available options. These include services from paratransit to service routes. The third chapter discusses current practices utilized by transportation programs with profiles of a social service agency, a medical transportation organization, and a general transportation provider. The organizations profiled are: Seniors' Resource Center (Denver, CO), Medical Motor Service (Rochester, NY), Treasure Valley Transit (Canyon Country, ID), and OATS, Inc. (MO). The final chapter shows how advocacy and agencies working with

older persons can assist in creating better transportation in the community. Appendices assist the reader with further information and resources.

15. Kerschner, H. (2004). Innovations for Seniors. Public and Community Transit Services Respond to Special Needs. Produced by the Beverly Foundation and the Community Transportation Association of America. (16 pages). Retrieved October 2, 2010, from: http://web1.ctaa.org/webmodules/webarticles/articlefiles/innovations.pdf

    Undertaken in 2003, the focus of this project was a national survey to identify, document, and disseminate information regarding innovations used by public and community transportation services to meet the needs of senior passengers. 167 surveys were sent to community transportation services in 50 states. Responses were received from 33 states with a response rate of 57%. The report includes survey results related to challenges such as difficulties associated with driving, availability of transportation services, access to vehicles, assistance at the destination, and meeting the needs of people with memory loss. Innovations are defined as changes from the norm or standard way of doing things, and numerous innovations for meeting transportation challenges are introduced. To further clarify the discussion of innovative methods, the report includes six case studies, each of which details a problem, an innovative solution, and an outcome. The case studies were undertaken with the Council on Aging & Human Services (COAST) of Colfax, WA; Community Association for Rural Transportation, Inc. (CARTS) of Harrisonburg, VA; Seniors' Resource Center (SRC) of Denver, CO; St. John's County Council on Aging of St. Augustine, FL; Special Transit of Boulder, CO; and SMART of Detroit, MI.

16. Kerschner, H. K. & Hardin, J. (2006). Transportation Innovations for Seniors: A Report from Rural America. Washington, DC: Partnership project and publication of the Beverly Foundation and the Community Transportation Association of America. (14 pp.). Retrieved October 2, 2010, from: http://web1.ctaa.org/webmodules/webarticles/articlefiles/Senior_Rural_Innovations.pdf

    This project explored innovations for addressing the challenges of providing transportation to seniors in rural America. Research activities included structured interviews with 52 nationally recognized policymakers, technical advisors, and transit and aging service providers. Research activities also included five case studies. The report includes a discussion of the rural environment; transportation needs, services, gaps, challenges particular to rural areas; and solutions and innovations for meeting the needs of senior passengers who use rural transportation services. In addition to discussing specific innovations, the report presents a typology of innovations that includes: the point of origin, an idea factory, people markers, and a receptive culture. The underpinnings of the typology

and of the ability to promote innovation are identified as leadership and change. Five on-site case studies were undertaken with transportation services that exemplified innovative solutions to address the challenges of providing transportation to seniors in rural areas. The services were: Prairie Hills Transit (Spearfish, SD); Your County Community Action Corp. Transportation Program (Sanford, ME); OATS (Columbia, MO); Sedgwick County Transportation Brokerage (Wichita, KS); and CARTS (Austin, TX).

17. Kerschner, H. & Harris, J (2007). Better Options for Older Adults. *Public Roads*, March/April: 26-13

    Public Roads published this article as part of its Senior Mobility Series. The central theme of the article is the importance of transportation options for older adults who no longer drive and the efforts by many communities to create STPs (Supplemental Transportation Programs) to provide better transportation options than are often available for seniors who are frail and in need of assistance. STPs are described as being part of the family of transportation services that best meet the needs of older adults and are, at the same time, cost effective for the community. While transportation options are emphasized, driver safety and research that indicates a difference in life expectancy and driving expectancy provide the background for the population of older adults who need options and the reasons for their special assistance and support requirements. Many types of STPs supported by communities are addressed; however, the authors make the case for volunteer driver programs from the perspectives of cost savings, assistance and support, and travel safety. Five STPs, most of which include volunteer drivers, are profiled. They include West Austin Caregivers, Transportation Reimbursement Program, Prairie Hills Transit, and OATS. The Five As of Senior-Friendly Transportation, the 10 Maxims of STPs, and key organizations offering training, technical assistance, financial support, and research are introduced.

18. Kerschner, H. K. & Rousseau, M. (2008). Volunteer drivers: Their contributions to older adults and to themselves. *Gerontology & Geriatrics Education, 29*(4): 383-97.

    A survey of 714 volunteer drivers from 367 communities representing 40 states was conducted to understand better how and why these dedicated volunteers support older adults. The volunteer drivers came from all walks of life: homemakers and empty nesters; students, retirees and CEO's; able bodied and disabled; people affiliated with religious institutions and other charitable organizations; and many volunteers acting on their own. Their responses provided qualitative and quantitative information about who these volunteer drivers were, why they volunteered, the challenges they faced, and the satisfaction they received from volunteering to drive. The survey also addressed current topics including: mobility and transportation of older adults,

volunteerism and civic engagement, and an innovative method of joining the two sides of aging—the "wellderly" and the elderly. The authors concluded that volunteer drivers play a significant and important role in the lives of older adults who are dependent on community transportation by contributing expertise and time to a community-based solution for a problem that will be greater in the future.

19. Kerschner, H., Rousseau, M-H., & Svensson, C. (2008). *Volunteer Drivers in America: The Hope of the Future.* Pasadena, CA: Beverly Foundation. Retrieved February 6, 2011, from: http://www.beverlyfoundation.org/library/documents/volunteer_driver_programs/Volunteer_Drivers_AmericaBrief.pdf

    While this brief discusses the general topic of volunteerism in America (its local focus, rates of involvement, types of activities, and older adult involvement), its central themes are the contributions, motivations, and satisfactions of volunteers who drive older adults. The paper includes considerable data on volunteerism in general, and it emphasizes data from the Beverly Foundation's 2004 and 2005 national surveys of volunteer drivers. In addition to volunteer driver demographics, data are provided on the driving experience; the types of people who drive; what driving means to them; the types of contributions they make to organizations, passengers, and communities they serve (such as time, assistance, vehicles, socialization, and financial savings); their motivations (why they volunteer to drive); the satisfaction they receive (helping people, feeling needed, getting to know riders, donating time and money); and clues to their success. The brief concludes with a summary of how volunteer drivers supplement what others cannot do, promote volunteerism, bring experience and expertise, make a variety of contributions, and advance volunteerism and volunteer driver programs in America.

20. Koffman, D., Weiner, R., Pfeiffer, A. & Chapman, S. (2010). Funding the public transportation needs of an aging population. San Francisco, CA: American Public Transportation Association (APTA). Retrieved October 2, 2010, from: http://www.apta.com/resources/reportsandpublications/Documents/TCRP_J11_Funding_Transit_Needs_of_Aging_Population.pdf

    This report studies the public transportation requirements of the older population of the United States, identifies the range of actions that will be necessary to expand the mobility options for this population, quantifies the demand for these public transportation services, and estimates the amount of funding that will be required to provide such services. The identified actions include: enhancements to fixed-route public transportation operations and planning, enhancements to public transportation vehicles, actions to help older people take advantage of existing services, expansion

of supplementary services, and the application of universal design strategies. The authors state that while these are the required actions of greatest concern, they are not the only actions needed. Others include: assuring supportive services to caregivers, encouraging further development of unsubsidized private transportation services, increasing the availability of accessible taxicabs, coordinating with non-emergency medical transportation provided under Medicaid and Medicare, and supporting modifications to cars and roadways to increase the safety of older drivers. The analysis estimates in 2010, 2020, and 2030 dollars needed for operating and capital expenses to provide a desirable level of public transportation services for older people in the United States.

21. Low, James A., & Chan, Daniel K. Y. (2002). Air travel in older people. *Age and Aging, 31:* 17-22.

    This brief article discusses the problems older adults face when traveling by air and provides several recommendations for ensuring their travel is healthy and safe. Its three key points are: (1) more older people are traveling by air because of increased affluence, cheaper airfares, and demographic changes; (2) the aircraft cabin can be deleterious to the older traveler because of its low oxygen, humidity, and pressure conditions; and (3) doctors who treat older people should be able to provide advice on how to minimize risk during air travel. The article discusses psychological and medical hazards and suggests that travelers seated in cramped economy seats may experience "economy class syndrome," which can contribute to both health and safety hazards. The article provides suggestions for before the trip and during the flight, such as starting preparations early; considering group tours; traveling with younger persons; bringing along usual medications; obtaining aisle seating; and avoiding smoking, gas producing food, and alcohol. The article concludes that very little research has been carried out on older adult air travel medicine and that several issues (the epidemiology of morbidity and mortality in the older traveler, how adverse psychological conditions of the aircraft cabin affect their health, and the utility of pre-flight screening) await clarification.

22. Molnar, L. J., Eby, D. W., St. Louis, R. M, Neumeyer, A. L. (2007). *Promising Approaches for Promoting Lifelong Community Mobility*. Washington, DC. AARP. 111pp. Retrieved October 1, 2010, from: http://aarpvolunteers.com/dsp/Promising_FINAL.pdf.

    This guide highlights programs and practices that appear to hold promise for enhancing the safety and mobility of older adults. The guide was developed through an extensive review of the literature and discussions with experts in aging-related fields. It is intended as a resource for community professionals interested in

developing programs that enhance older adult mobility. While each community needs to tailor its efforts to fit its own unique characteristics and those of its older adult population, much can be gained by learning about existing programs and practices. The guide, an update of an earlier publication (2003) by the same name, expands upon the earlier work, particularly in the areas of the transition from driving to non-driving and the need for alternative transportation options for older adults who are no longer able or who no longer choose to drive. While recognizing that no single approach holds the key to achieving the safety and mobility goals for all older adults, the purpose of the guide is to promote lifelong community mobility, including driver screening and assessment, driver education and training, roadway design, vehicle design and advanced technology, transitioning from driving to other transportation options, transportation coordination, and alternative transportation options.

23. National Association of Area Agencies on Aging and Partners for Livable Communities. (2007). A Blueprint for Action: Developing a Livable Community for All Ages, Washington, DC. Retrieved October 1, 2010, from: http://www.n4a.org/pdf/07-116-n4a-blueprint4actionwcovers.pdf

    This guide offers tools to prepare for the needs of a maturing America, and as its title states, a blueprint for action in developing livable communities for all ages. It draws from innovative and effective practices of communities throughout the country. It introduces seven key components for the development of livable communities that include: housing, planning and zoning, transportation, health and supportive services, cultures, lifelong learning, public safety, and civic engagement opportunities. Each area is explored with respect to key challenges, and a toolbox of action steps is presented to address these challenges. The guide offers a six-step strategy to build the partnerships necessary to create a livable community. Examples of leading innovations are described, and a list of resources, including subject-specific expertise, organizations, and practitioners, accompanies each chapter. Checklists are included of essential features of an aging-friendly community for assistance in assessing a particular community's readiness for an aging population. The transportation component cites challenges such as: road design that makes walking difficult; older driver experiences with specific difficulties related to the driving environment; and the lack of customer-oriented community transportation options for older adults. The corresponding action steps include using walk-ability audits to identify and prioritize pedestrian improvements, improving roadway design and signage, providing safety programs and refresher courses for older drivers, making transit services more flexible and customer-responsive, and supporting volunteer driver programs.

24. Park, N. S., Roff, L. L., Fei, S., Klemmack, D. L., Sawyer, P., & Allman, R. M. (2010). Transportation Difficulty of Black and White Rural Older Adults. *Journal of Applied Gerontology*, *29*(1): 70-88.

    This article illustrates that transportation options are necessary for the well being of older non-drivers, particularly in rural and poor communities. Using data from the University of Alabama at Birmingham Study of Aging for Community Dwelling Participants Residing in Rural Areas, this study explores self-reported transportation difficulty among rural older adults. The authors examine the relationship of predisposing characteristics, enabling resources, and measures of need for care, with self-reports of transportation difficulty. In the study, African Americans reported having more transportation difficulty than whites. When other variables were introduced, the race differences disappeared. However, there appeared to be a race-by-income interaction with transportation difficulty. As with African Americans, whites with lower incomes were more likely to have transportation difficulty than whites with higher incomes. When data from African Americans and whites were analyzed separately, income was the only variable associated with transportation difficulty among whites. Among African Americans, income was not related to transportation difficulty, however, other variables including age, gender, marital status, mini-mental state exam scores, and depression were related to transportation difficulty.

25. Rosenbloom, S. (2009). Meeting transportation needs in an aging-friendly community. *Generations*, *33*(2): 33-43.

    The author addresses transportation as one of the greatest challenges that older people face. She presents information on elder mobility and the misconception that transportation analysts assume that older people will mostly use currently available, conventional public transit services, and to a lesser extent, special demand-responsive services as they age. She highlights historic patterns of public transportation being used by older people, but then describes this as a cohort effect, as opposed to an age-related phenomenon. Since these people had used conventional public transportation alternatives when younger, they continued using public transportation as they aged. Rosenbloom then posits that the most realistic transportation options for current and future cohorts of older people are the current auto-based system and walking. Ultimately, she suggests that the most promising focus may be on keeping older people driving longer. For today's older people, the car is the most significant mode of transportation for both those who do and do not drive. Older people who do not drive are, in turn, dependent on those who do. Rosenbloom's suggestions for future mobility include expanding specialized transportation services and relaxing the eligibility requirements so that older people who are unable to drive qualify for such

services as well as improving (not simply expanding) public transportation, while recognizing that many older persons will not be able to utilize such services.

26. Stepaniuk, J. A., Tuokko, H., McGee, P., Garrett, D. D., & Benner, E. L. (2008). Impact of Transit Training and Free Bus Pass on Public Transportation Use by Older Drivers. *Preventive Medicine*, *47*: 335-337. Retrieved on November 12, 2010, from ScienceDirect.

    This study observed the impact of group transit training for older adults. The study was conducted in Victoria, BC, Canada, between 2005 and 2006. Data were collected from randomly assigned 41 participants in three groups: 1) control group (no group training or bus pass), 2) group receiving transit training only, and 3) group receiving both options of bus pass and training. Results show that there were no differences found among the groups in days or miles driven per week during the collection period. However, those who had group transit training used the bus more frequently. The study suggests that group transit training may help increase the awareness and use of public transportation for seniors. Limitations of the study include small sample size, geography, climate, and motivators.

27. Torres-Davis, A. I. (2008). The need for improved transportation options for the elderly and the elder advocate's role. *Clearing House Review Journal of Poverty Law and Policy*, *42*: 5-6, 281-291.

    This article highlights the current problems of transportation options among elderly non-drivers, and suggests that this challenge needs to be addressed to secure mobility in the senior population. The decline in health in old age compounded with the rise of aging baby boomers in the United States heightens the need for transportation services in rural and urban areas. More and more seniors are experiencing driving cessation as they age, but it does not mean that their daily routines should be eliminated. Current transportation options for the elderly are limited or nonexistent, especially in rural areas. Other options include non-supportive and supportive transportation, and medical nonemergency medical transportation. According to the author, most public transportation is non-supportive and is characterized by a lack of personal assistance to passengers. Medicaid beneficiaries have a slight advantage with nonemergency medical transportation available in some states. However, these options are becoming fewer because of conflicts with federal and state laws, proposed elimination of nonemergency medical transportation, and dwindling funds. Attorneys are trying to advocate for elders' transportation needs by increasing awareness of transportation gaps in the community. Without alternative transportation modes for non-driving seniors, they will be at greater risk for health deterioration and psychologically debilitating isolation.

E. Planning/Coordination/Mobility Management

Mobility management is aimed at promoting planning and coordination of transportation services. While some materials address senior transportation options, many focus on the broader issue of transportation for the general public.

1. Burkhardt, J. E., Koffman, D., & Murray, G. (2003). Economic benefits of coordinating human service transportation and transit services, Transit Cooperative Research Program, Washington, DC. Retrieved October 12, 2010, from: http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_91.pdf

   The Federal Transit Administration sponsored a research report on the benefits of coordination between human service organizations providing transportation and public/private transit services. The report assesses the impact that coordination can have on organizations and providing service to those persons who need it. The report includes 11 chapters: 1) Basic Coordination Concepts, 2) Economic Benefits of Coordination, 3) Coordination Practices with Measurable Economic Benefits, 4) Tapping Currently Unused Sources of Funding, 5) Reducing Transportation Service Costs, 6) Increasing Transportation System Productivity, 7) Expanding Transportation Services, 8) Potential National Benefits of Coordinated Transportation, 9) Federal, State, and Local Strategies That Have an Economic Impact on Coordination, 10) Cautions Needed When Implementing Coordinated Transportation Services, and 11) Conclusion. Major benefits of coordination include increased funding, decreased costs, and increased productivity.

2. Community Transportation Association of America (2008). Supplement No. 1: Transportation for Persons with Limited English Proficiency, Senior Transportation, CTAA: 1-11. Retrieved October 1, 2010, from:

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http://www.ctaa.org/webmodules/webarticles/articlefiles/Transportation_for_Persons_with_Limited_English_Proficiency.pdf

This publication highlights culturally appropriate outreach programs that inform the community about available services and summarizes basic guidelines for customer service and outreach for persons with limited English proficiency. These guidelines suggest the inclusion of the community at the planning and development stage; being community-specific in planning; learning from mistakes and correcting them for the future; hiring staff that reflects the target community population; connecting with organizations already working with the target community; keeping in touch with members of the community and getting feedback on the changes to the services that are made; continually reviewing services for possible improvements; and acknowledging that the key to providing effective service to persons with limited English proficiency is the providers' commitments to effective community service and outreach for all residents.

3. Millar, W. (2008). Mobility management: A new role for public transportation. American Public Transportation Association. (6 pp.) Retrieved October 1, 2010, from: http://www.apta.com/gap/policyresearch/Documents/mobility_management.pdf

According to the authors, mobility management is a strategic approach to service coordination and customer service in the public transportation sector. It involves creating partnerships with transportation providers in a community or region to enhance travel options and then developing a way to communicate effectively those options to the public. In this way, resources can be coordinated most efficiently, and those using the services are best able to make decisions. Additionally, mobility management complements the traditional models of public transportation with one that meets the unique needs of each group within the community. It relies on partnerships and alliances with both public and private organizations; supports customer-driven partnerships among multiple transportation providers; and emphasizes multimodal, rather than single-mode, solutions. Moreover, mobility management can offer greater efficiency in the use of transportation resources with the goals of cost savings and increased service effectiveness. Finally, although it does not specifically cater to the needs of the older population, mobility management can contribute to transportation alternatives for older adults.

4. Organisation for Economic Co-operation and Development (OECD) (2001). Ageing and Transport: Mobility Needs and Safety Issues Highlights. Retrieved on February 15, 2011, from: http://www.oecd.org/dataoecd/40/63/2675189.pdf

This volume aims to identify current and future mobility and safety issues of the aging population and develop research and policy recommendations for senior transportation needs in compliance with adequate safety standards. According to the report, older persons experience fewer crashes on average; however, the major concern is the frailty and vulnerability of older persons involved in a crash. Those suffering from health-related conditions will stop walking and/or the use of public transportation before driving cessation. Older persons want and tend to age in place; therefore, community plans are crucial to facilitating their mobility. Policies are identified to address this topic, especially those related to funding, which is paramount to enabling lifelong mobility. While measures should be taken for older persons to continue to drive safely with development of safer vehicles, alternative transportation options can be a necessity for those non-drivers and those experiencing driving cessation. The OECD suggests that older adults become more involved in policy development to contribute a comprehensive view, increasing awareness to promote maximum mobility and safety for seniors is important for all.

5. Transportation Research Board (2004). Strategies to Increase Coordination of Transportation Services for the Transportation Disadvantaged. Washington, DC: TCRP Report 105. Retrieved October 2, 2010, from: http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_105.pdf

   Data from TCRP Project H-30, "Strategies to Increase Coordination of Transportation Services for the Transportation Disadvantaged," conducted by the research team of TransSystems Corporation, the Institute for Transportation Research and Education, and Planners Collaborative, serve as the basis of TCRP Report 105. The objective of the research was to develop strategies for initiating or improving coordination of local and regional publicly funded transportation services for the transportation disadvantaged. The report includes a history of transportation coordination in the United States; discussion of current coordination trends and challenges; a review of transportation services and options; the processes used to plan, budget, and promote coordinated transportation services; a review of funding sources; and information on technology and its application to transportation coordination. Most topics are supported by case studies, available at the end of the report. The TCRP report suggests that public transportation agencies, human resources agencies, transportation brokers, planning organizations, and other organizations and entities may use the results to initiate or improve the local or regional coordination of publicly funded transportation services.

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REFERENCE LIST

AARP Housing and Mobility Options (2010). *The Getting Around Guide: An AARP Guide to Walking, Bicycling and Public Transportation.* Washington, DC. Retrieved February 6, 2011, from: http://www.aarp.org/home-garden/transportation/info-11-2010/getting_around_guide_intro.html

Bailey, L. (2004). Aging Americans: Stranded Without Options. Surface Transportation Policy Project: Washington, DC. Retrieved June 22, 2010, from: http://www.transact.org/report.asp?id=232

Bartley, M. & O'Neill, D. (2010). Transportation and Driving in Longitudinal Studies on Ageing. *Age and Ageing*, *39*: 631-636.

Beverly Foundation Fact Sheets – Volume 1 (2008). Retrieved July 6, 2011, from: http://www.beverlyfoundation.org/library/index.html#facts

Beverly Foundation & TRIP Program. (2005). The TurnKey Kit: A Web-Based Resource for Volunteer Driver Programs. Washington, DC: Beverly Foundation & AAA Foundation for Traffic Safety. Retrieved June 29, 2011, from: http://www.beverlyfoundation.org/turnkeykit/

Beverly Foundation (2007). Your STP Clearinghouse: A "How to Guide for Developing a State-Wide Clearinghouse of STPs." Pasadena, CA: The Beverly Foundation. Retrieved June 29, 2011, from: http://www.beverlyfoundation.org/library/documents/star/2006%20STAR%20Search-Awards%20Report.pdf

Beverly Foundation & AAA Foundation for Traffic Safety. STPs (Supplemental Transportation Services for Seniors) (2001) and STPs in America-Update (2004). Beverly Foundation & AAA Foundation for Traffic Safety. Retrieved February 6, 2011, from:
http://www.beverlyfoundation.org/library/documents/stp/STPsInAmerica2001_report.pdf
http://www.beverlyfoundation.org/library/documents/stp/STPsInAmerica2004_report.pdf

Burkhardt, J. E. (2007). High-Quality Transportation Services for Seniors. Rockville, Maryland: WESTAT. Retrieved October 1, 2010, from: http://www.tc.gc.ca/eng/policy/transed2007-pages-1298-1894.htm

Burkhardt, J. & Garrity, R. (2011).TCRP Report 144. Volume 2: Research Report. Washington, DC: Transportation Research Board.

Burkhardt, J. & Kerschner, H, K. (2005). How to Establish and Maintain Door-Through-Door Transportation Services for Seniors. Washington, D C: A Westat project for the US Administration on Aging, U.S. Department of Health and Human Services. Retrieved October 2, 2010, from: http://www.beverlyfoundation.org/library/transportationassistance/HowToGuide_DoorThroughDoorTransportation.pdf

Burkhardt, J. E., Koffman, D., & Murray, G. (2003). Economic benefits of coordinating human service transportation and transit services, Transit Cooperative Research Program, Washington, DC. Retrieved October 12, 2010, from: http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_91.pdf

Burkhardt, J. E., McGavock, A. T. & Nelson, C. A. (2002). Improving Public Transit Options for Older Persons, *TCRP* Report 82. Retrieved October 1, 2010, from: http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_82v1b.pdf.

Carr, D. B., Shead, V., Storandt, M. (2005). Driving cessation in older adults with dementia of the Alzheimer's type. *Gerontologist, 45*: 824-827.

Collia, D., Sharp, J., & Giesbrecht, L. (2003). The 2001 national household travel survey: A look into the travel patterns of older Americans. *Journal of Safety Research, 34*(4): 461-470.

Community Transportation Association of America. (2008) Supplement No. 1: Transportation for Persons with Limited English Proficiency, Senior Transportation, CTAA: 1-11. Retrieved October 1, 2010, from: http://www.ctaa.org/webmodules/webarticles/articlefiles/Transportation_for_Persons_with_Limited_English_Proficiency.pdf

Coughlin, J. F. & Cobb, R. W. (2000). How will we get there from here? *Journal of Aging & Social Policy, 11*(2-3): 201-210.

Dickerson, A. E., Molnar, L. J., Eby, D., Adler, G., Bédard, M. Berg-Weger, M., Classen, S., Foley, D., Horowitz, A., Kerschner, H., Page, O., Silverstein, N.M., Staplin, L., & Trulillo, L. (2007). Transportation and Aging: A Research Agenda for Advancing Safe Mobility. *The Gerontologist, 47*(5): 578-590.

Donorfio, L. K. M., Mohyde, M., D'Ambrosio, L., & Coughlin, J. (2009). To drive or not to drive? That isn't the question—Defining self-regulation among older drivers. *Journal of Safety Research*, *40*(3): 221-226.

Easter Seals (2004). A Solutions Package for Volunteer Transportation Programs: Transportation Solutions for Caregivers. Easter Seals. Retrieved June 29, 2011, from: http://seniortransportation.easterseals.com/site/PageServer?pagename=NCST2_trans_care

Eby, D. W., Molnar, L. J., & Kartje, P. S. (2009). *Maintaining Safe Mobility in an Aging Society*. New York, NY: CRC Press. ISBN: 9781420064537.

Environment Victoria (2004). Getting about without a car: Guidelines for promoting healthy transport to older people. Victoria, Australia. 44 pp. Retrieved September 28, 2010, from: http://www.travelsmart.vic.gov.au/doi/doielect.nsf/2a6bd98dee287482ca256915001cff0c/eb0eb41665a7639dca256fd3001fe712/$FILE/GettingAbout.pdf

Fiedler, M. (2007). Older people and public transport: Challenges and chances of an ageing society. Koln, Germany: European Metropolitan Transport Authority (EMTA). (116 pp.). Retrieved October 1, 2010, from: www.emta.com/IMG/pdf/Final_Report_Older_People_protec.pdf

Fildes, B. N., Charlton, J., Pronk, N., Langford, J., Oxley, J., & Koppel, S. (2008). An Australasian Model License Reassessment Procedure for Identifying Potentially Unsafe Drivers. Monash University Accident Research Centre, Monash University, Clayton, Victoria, Australia. Traffic Injury Prevention Publication details, including instructions for authors and subscription information: Retrieved August 1, 2010, from: http://www.informaworld.com/smpp/title~content=t713456148

Finn, J., & Sterns, H. (Eds.) (2003). The Mobile Elder: Getting Around in Later Life. *Generations, 27*(2): 1-77.

Foreman, C., Tucker, L., Flynn, J., & West. M. (2003). Chapter Four: Successful Strategies in Senior Transportation Services. In *Senior Transportation Alternatives: Why are they Important and What Makes Them Work?* Florida Department of Transportation, Tallahassee, FL BC, pp. 67-87. Retrieved October 12, 2010, from http://www.nctr.usf.edu/pdf/473-09.pdf.

Foley, D. J., Heimovitz, H. K., Guralnik, J. M., & Brock, D. B. (2002). Driving life expectancy of persons aged 70 years and older in the United States. *American Journal of Public Health, 92*(8): 1284-1289.

Freund, K. & Vine, J. (2010). Aging, Mobility, and the Model T: Approaches to Smart Community Transportation. *Generations. 34*(3): 76-82.

Golob, T. F., & Hensher, D. A. (2007). The trip chaining activity of Sydney residents: A cross-section assessment by age group with a focus on seniors. *Journal of Transport Geography, 15*: 298-312.

Hardin, J. (2003). Senior transportation: Toolkit and best practices. Washington, DC: Community Transportation Association of America. (116 pp) Retrieved October 1, 2010, from: http://search.yahoo.com/search;_ylt=AirEU_BWJ81ydf9hi0Loht2bvZx4?fr=yfp-t-701s&toggle=1&cop=mss&ei=UTF8&p=senior%20transportation%20toolkit%20and%20best%20practices

Hartford, Inc. (2010).We Need to Talk: Family Conversations with Older Drivers. Retrieved February 6, 2011, from:
http://hartfordauto.thehartford.com/UI/Downloads/FamConHtd.pdf
And, At the crossroads. A guide to Alzheimer's disease, dementia, and driving. Retrieved February 6, 2011, from:
http://hartfordauto.thehartford.com/UI/Downloads/Crossroads.pdf

Hunter-Zaworski, K. (2007). Getting Around in an Aging Society. *Planning*. 22-25.

Johnson, E. E. (2003). Transportation Mobility and Older Drivers. Journal of Gerontological Nursing, *vol* 29*(4): 34-41*.

Kerschner, H.. (2004). Innovations for Seniors. Public and Community Transit Services Respond to Special Needs. Produced by the Beverly Foundation and the Community Transportation Association of America. (16 pages). Retrieved October 2, 2010, from:
http://web1.ctaa.org/webmodules/webarticles/articlefiles/innovations.pdf

Kerschner, H. K. & Hardin, J. (2006). Transportation Innovations for Seniors: A Report from Rural America. Washington, DC: Partnership project and publication of the Beverly Foundation and the Community Transportation Association of America. (14 pp.). Retrieved October 2, 2010, from:
http://web1.ctaa.org/webmodules/webarticles/articlefiles/Senior_Rural_Innovations.pdf

Kerschner, H. & Harris, J (2007). Better Options for Older Adults. *Public Roads*, March/April: 26-13.

Kerschner, H. K. & Rousseau, M. (2008). Volunteer drivers: Their contributions to older adults and to themselves. *Gerontology & Geriatrics Education, 29*(4): 383-97.

Kerschner, H., Rousseau, M-H., & Svensson, C. (2008). *Volunteer Drivers in America: The Hope of the Future.* Pasadena, CA: Beverly Foundation. Retrieved February 6, 2011, from: http://www.beverlyfoundation.org/library/documents/volunteer_driver_programs/Volunteer_Drivers_AmericaBrief.pdf

Koffman, D., Weiner, R., Pfeiffer, A. & Chapman, S. (2010). Funding the public transportation needs of an aging population. San Francisco, CA: American Public Transportation Association (APTA). Retrieved October 2, 2010, from: http://www.apta.com/resources/reportsandpublications/Documents/TCRP_J11_Funding_Transit_Needs_of_Aging_Population.pdf

Kostyniuk, L. P. & Shope, J. T. (2003). Driving and alternatives: Older drivers in Michigan. *Journal of Safety Research, 34*: 407-414. Retrieved on November 12, 2010, from ScienceDirect.

Langlois. J. A., Keyl, P. M., Guralnik, J. M., Foley, D. J., Marottoli, R. A. & Wallace, R. B. (1997). Characteristics of older pedestrians who have difficulty crossing the street. *American Journal of Public Health, 87*(3): 393-7.

Lord, S., Despres, C., & Ramadier, T. (2010). When Mobility Makes Sense: A Qualitative and Longitudinal Study of the Daily Mobility of the Elderly. *Journal of Environmental Psychology*. 1-10.

Low, James A., & Chan, Daniel K. Y. (2002). Air travel in older people. *Age and Aging, 31:* 17-22.

Lynott, J., McAuley, W., & McCutcheon, M. (2009). Getting out and about: The Relationship between urban form and senior travel patterns. *Journal of Housing for the Elderly, 23*(4): 390-402.

Marquie, J. C. & Gabaude, C. (2010). Editorial. Aging, Transportation and Mobility: Current Issues. *Le Travail Humain, 73*: 1-5. Retrieved on November 12, 2010, from: http://www.cairn.info/revue-le-travail-humain-2010-1-page-1.htm

Mann, W. (Ed.) (2005). *Community Mobility: Driving and Transportation Alternatives for Older Persons*. N.Y., New York: Haworth Press. (172p).

Marottoli, R. A., Mendes de Leon, C. F., Glass, T. A., Williams, C. S., Cooney, Jr. L. M., & Berkman, L. F. (2000). Consequences of driving cessation: Decreased out-of-home activity levels. *Journals of Gerontology Series B: Psychological Sciences & Social Sciences, 55B*(6): S334-340.

Millar, W. (2008). Mobility management: A new role for public transportation. American Public Transportation Association. (6 pp.) Retrieved October 1, 2010, from: http://www.apta.com/gap/policyresearch/Documents/mobility_management.pdf

Mollenkopf, H., Marcellini, F., Rouppila, I., Szeman, Z., & Tachen, M. (Eds.) (2005). Enhancing mobility in later life (Assistive Technology Research Series). Personal coping, environmental resources and technical support. The out-of-home mobility of older adults in urban and rural regions of five European countries. Amsterdam, Netherlands: IOS Press. (325 pp.)

Molnar, L.J., Eby, D.W., St. Louis, R.M, Neumeyer, A.L. (2007). *Promising Approaches for Promoting Lifelong Community Mobility*. Washington, DC. AARP. 111pp. Retrieved October 1, 2010, from: http://aarpvolunteers.com/dsp/Promising_FINAL.pdf.

National Association of Area Agencies on Aging and Partners for Livable Communities. (2007). A Blueprint for Action: Developing a Livable Community for All Ages, Washington, DC. Retrieved October 1, 2010, from: http://www.n4a.org/pdf/07-116-n4a-blueprint4actionwcovers.pdf

OECD (2001). Ageing and Transport: Mobility Needs and Safety Issues Highlights. Retrieved on February 15, 2011, from: http://www.oecd.org/dataoecd/40/63/2675189.pdf

Park, N. S., Roff, L. L., Fei, S., Klemmack, D. L., Sawyer, P., & Allman, R. M. (2010). Transportation Difficulty of Black and White Rural Older Adults. *Journal of Applied Gerontology, 29*(1): 70-88.

Rosenbloom, S. (2009). Meeting transportation needs in an aging-friendly community. *Generations, 33*(2): 33-43.

Rosenbloom, S. (2003). The Mobility Needs of Older Americans: Implications for Transportation Reauthorization in Taking the High Road: A Metropolitan Agenda for Transportation Reform, (pp. 227-254). Bruce Katz and Robert Puentes (Eds.), Brookings

Institution Press. Retrieved June 16, 2010, from:
http://www.brookings.edu/reports/2003/07transportation_rosenbloom.aspx

Rosenbloom, S. & Herbel, S. (2009). The safety and mobility patterns of older women: Do current patterns foretell the future? *Public Works Management Policy*, *13*: 338.

Rosenbloom, S. (2003). The Mobility Needs of Older Americans: Implications for Transportation Reauthorization in *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, (pp. 227-254). Bruce Katz and Robert Puentes (Eds.), Brookings Institution Press. Retrieved June 16, 2010, from:
http://www.brookings.edu/reports/2003/07transportation_rosenbloom.aspx

Silverstein, N.M. (Guest Editor). (2008). Special Issue of Mobility. *Gerontology and Geriatrics Education*, *29*(4).

Silverstein, N. M., & Peters-Beumer, L. (2007). "Community Mobility and Dementia" in Cox, C. (Ed.) *Handbook for Social Work Practice and Dementia.* NY, New York: Springer Publishing Company.

Siren, A. & Hakamies-Blomqvist, L. (2006). Does gendered driving create gendered mobility? Community-related mobility in Finnish women and men aged 65+. *Transportation Research Part.* F, *9*: 374-382.

Stepaniuk, J. A., Tuokko, H., McGee, P., Garrett, D. D., & Benner, E. L. (2008). Impact of Transit Training and Free Bus Pass on Public Transportation Use by Older Drivers. *Preventive Medicine*, *47*: 335-337. Retrieved on November 12, 2010, from ScienceDirect.

Transportation Research Board (2004). Strategies to Increase Coordination of Transportation Services for the Transportation Disadvantaged. Washington, DC: TCRP Report 105. Retrieved October 2, 2010, from:
http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_105.pdf
Torres-Davis, A. I. (2008). The need for improved transportation options for the elderly and the elder advocate's role. *Clearing House Review Journal of Poverty Law and Policy*, *42*: 5-6, 281-291.

U.S. Department of Transportation (2003). Safe Mobility for a Maturing Society: Challenges and Opportunities. DOT HS 809 745, Washington, DC: author. 31pp. Retrieved October 1, 2010, from:
http://web1.ctaa.org/webmodules/webarticles/articlefiles/safe_mobility.pdf

Webber, S. C., Porter, M. M., & Menec, V. H. (2010). Mobility in Older Adults: A Comprehensive Framework. *The Gerontologist*, *50*(4): 443-450.

Wolff-Branigin, M. & Wolff-Branigin, K. (2008). The Emerging Field of Travel Training Services: A Systems Perspective. *Journal of Public Transportation*, *11*(3).

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Abstract Recommendations for Future Updates

This first edition of the collection of abstracts related to Senior Transportation Options is the product of literature reviews and recommendations from professionals in our field. Please suggest any additional publications or resource materials that you believe will be of importance in future updates of this edition.

Author(s):

Title:

Year:

Full citation information:

Please include an abstract up to 200 words (in your own words--not previously published). The abstract should describe the relevance of this inclusion to enhancing our understanding of Senior Transportation Options.

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Mailing Address:_____
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Phone:_____**FAX:**_____
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