

OREGON DEPARTMENT OF TRANSPORTATION DRIVER AND MOTOR VEHICLE SERVICES

REPORT OF THE **OLDER DRIVER ADVISORY COMMITTEE** SEPTEMBER 2000

MISSION STATEMENT: The Older Driver Advisory Committee seeks to identify strategies that provide for the safety of drivers and the public as a whole while at the same time honoring the dignity and meeting the mobility needs of individual citizens.

I. INTRODUCTION

A. Summary. This report constitutes the recommendations of the Older Driver Advisory Committee to the Oregon Department of Transportation, Driver and Motor Vehicle Services. The 1999 Oregon Legislature asked the Department of Transportation to study the effects of aging upon driving ability when it passed House Bill 2446. This bill authorized the department to convene an advisory committee to participate in the study and to make recommendations to the department. The legislation specified that the committee's recommendations would be advisory only.

The Older Driver Advisory Committee (ODAC)¹ met eight times beginning in January 2000 and concluding in August 2000. During the first four meetings, the committee received written and verbal testimony from members of the public, stakeholders, and recognized experts on the issues. During the subsequent four meetings, the committee studied the testimony and reviewed additional research compiled for this project by DMV. Concurrently, DMV hosted eight Town Hall meetings between January and April 2000 in Tualatin, Salem, Oak Grove, Eugene, Grants Pass, Pendleton, Newport and Bend to explain the study to the public and to solicit public input for the study. The committee formed the above mission statement and developed the following recommendations based upon written and oral testimony and review of the latest research relating to the topic.

¹ Members of ODAC: Mr. Brad Bayliss, Ms. Lynn Cameron (Oregon Disabilities Commission), Dr. Irving Dayton, Ms. Lee Girard (Oregon Senior and Disabled Services Division), Sgt. David Hadley (Multnomah County Sheriff's Office), Sgt. Bruce Hoffman (Oregon State Police), Dr. Elizabeth Kutza (Portland State University), Ms. Andi Miller (Alzheimer's Association), Ms. Phyllis Rand (Governor's Commission on Senior Services), Dr. Lee Ann Remington (Pacific University College of Optometry), Ms. Mary Lou Ritter (Oregon Association of Area Agencies on Aging and Disability), Ms. Beverley Thomas (AARP), and Dr. Katherine Wild (Oregon Health Sciences University). The ODAC process included a *Memorandum of Collaboration* which described the charge to the committee and its operating procedures. This *Memorandum* is available upon request from DMV.

B. Findings of The Older Driver Advisory Committee. Following extensive study, members of ODAC have concluded that chronological age alone does not represent a valid or reliable criterion for assessing risk of being involved in a motor vehicle crash.² Similarly, the presence of various medical conditions does not support the conclusion that a driver lacks the ability to drive.

Instead, the presence of certain visual, cognitive and functional abilities determines the capacity to perform tasks necessary to driving safely. While research establishes that among the population as a whole, visual, cognitive and functional abilities generally tend to decline as age progresses, the rate and severity of decline varies widely between individuals. Thus, restrictions based upon age or medical conditions alone would not identify accurately drivers at risk of being involved in a motor vehicle crash because of age. Such restrictions would carry the risk of being over-broad by restricting older persons who possess necessary capacities to drive safely, and being under-inclusive by failing to identify younger drivers who lack necessary visual, cognitive and functional capacities.

Therefore, with respect to older drivers, licensing restrictions should not be based upon age alone. Rather, fitness to drive should be assessed through appropriate screening for presence of visual, cognitive and functional abilities to perform tasks necessary to driving safely. Current research supports the conclusion that such screening needs to increase in frequency as drivers age to increase the effectiveness of identifying at-risk drivers. Determination of whether to issue a license should include consideration of remedial and adaptive resources, improvements following skill training, and should be made in light of restricted licensing options tailored to an individual driver's capabilities and circumstances.

Based upon the above findings, ODAC respectfully submits the following recommendations³ to the Oregon Department of Transportation, Driver and Motor Vehicle Services. The members of ODAC have concluded that no single solution would address effectively the complex issues. The following recommendations constitute a multi-faceted approach designed to focus on identifying and addressing the issues that pose the greatest risk to the safety of the public. The committee believes these recommendations constitute a cost-effective response to the concerns of the Legislature and the general public. The recommendations correspond to the four topic areas identified in HB 2446.

² The members of ODAC recognized early in their work the challenges presented by terminology. The term "older" raised key definitional questions. "In the literature on gerontology, the term "senior citizen" is associated with several age groups encompassing all people who are 50 and over. In fact, the ages of 60 and 65 are two thresholds that are used much more often to refer to senior citizens. Although several social and economic indicators refer to 65 as the threshold of old age, it seems that the 60-year mark is increasingly used to this end." (Vermette and Letourneau, cited in *DMV Preliminary Literature Review*).

³ Unless otherwise indicated, ODAC approved all recommendations in this report by consensus. Minority viewpoints are included in corresponding footnotes. "Consensus" for the purposes of the ODAC process is defined in the committee's *Memorandum of Collaboration* beginning on page six.

II. RECOMMENDATIONS

A. **Identification of drivers who may be at risk for being involved in a motor vehicle accident because of age⁴.**

Effective identification of at-risk drivers requires multiple channels for relevant information to reach DMV. ODAC recommends that DMV address at least four aspects of identification: driver license renewal, reporting, the Driver Re-Examination Program, and the Driver Improvement Program.

(1) **Driver License Renewal Process.**

- (a) **Renewal Cycle:** Effective identification of at-risk drivers requires a shorter renewal cycle⁵ as drivers age in order to determine whether changes in the ability to drive safely have occurred.

ODAC identified two key issues: (1) The eight-year renewal cycle is too long for drivers over the age of 65, and (2) The current vision screening fails to identify cognitive issues.⁶ The current renewal cycle requires licensees of all ages to appear at a DMV field office once every eight years. Upon renewal, no additional screening occurs until the first renewal on or after the 50th birthday of the licensee. At that time, renewal applicants undergo vision screening involving visual acuity and field of vision only.

RECOMMENDATION #1: Following acquisition of a driver's initial license, DMV should:

- (i) **Continue the current schedule of in-person license renewals every eight years;**
- (ii) **Continue conducting a vision screening upon renewal beginning with the first renewal on or after the driver's 50th birthday; and**
- (iii) **Increase the frequency of in-person renewal and vision screening to once every four years beginning on or after the driver's 65th birthday.⁷**

- (b) **Screening for Capacity to Drive:** Effective identification of at-risk drivers requires screening components designed to reveal lack of capacities to perform visual, cognitive and functional tasks necessary to

⁴ HB 2446(2)(a)(1999).

⁵ Shorter than the current eight-year cycle.

⁶ See visual awareness brochure; Remington; Decisions About Driving; Dobbs.

⁷ Consensus recommendation. Additionally, two ODAC members, Mr. Brad Bayliss and Dr. Irving Dayton, recommend the renewal cycle should occur more frequently once drivers have reached their 50th birthday. This minority recommendation rests on two principles: first, studies demonstrate cognitive changes occur in many people as young as age 50, and an eight-year renewal cycle between the ages of 50 and 65 is too lengthy for DMV to identify changes in driver ability that might occur during those years. Second, if the 8-year cycle results in some drivers renewing their licenses just prior to their 50th birthday, those drivers would not be required to appear for renewal until age 57, creating a wide disparity between those drivers and drivers who, by virtue of their past renewal cycle, might appear at age 51, 52, or 53. The disparity creates inconsistency.

drive safely. While current vision screening tools identify visual acuity and field of vision, they fail to test cognitive skills shown to predict involvement in a crash.

RECOMMENDATION #2: Train DMV counter workers to implement gross impairment screening.

RECOMMENDATION #3: DMV should implement a “tiered” model to screen for visual, cognitive and functional capacities necessary to drive.⁸

(i) **Components:** Components of the tiered model should include:
Tier 1: Vision and Visual Attention. This tier tests for visual acuity, field of vision, and Useful Field of View.⁹

Tier 2: Driver Re-Examination Program.

Current OAR 735-076-0030 (knowledge test, road sign recognition, drive test, vision test, or any other exam DMV deems necessary to determine fitness to drive).

(ii) **Utilization:** All applicants for initial drivers’ licenses and applicants for renewal on or after their 50th birthday undergo Tier 1 screening as a routine component of testing.¹⁰ This recommendation would require DMV to add UFOV to its standard vision screen. Adding UFOV to the standard vision screening would ensure that regardless of the age of the applicant, all DMV vision screening would involve the three

⁸ Components of the first tier approved by ODAC members voting unanimous full support. Additionally, ODAC members voted unanimous full support to utilize one type of vision screening whenever DMV screens for vision issues regardless of the applicant’s or driver’s age. The current DMV vision screening tests for visual acuity and field of vision only. This recommendation supports adding a third component to the standard DMV vision screen, the “Useful Field of View” test.

⁹ “Useful Field of View” (UFOV) (Owsley and Ball, 1998) tests visual processing abilities through use of a computer screen showing figures of cars, trucks, and other objects (*see National Institute of Health (NIH) News Release 4/7/98*). Drivers are asked to identify particular objects amid different kinds of visual distractions on the screen. The “useful field of view” is defined as the area in which all of the rapidly presented visual information can be used. UFOV tests speed of processing (attending to appropriate stimuli), selective attention (attending to the appropriate stimulus) and divided attention (attending to multiple stimuli at once; distractibility). The Owsley and Ball study, reported in the April 8, 1998 issue of the *Journal of the American Medical Association (JAMA)*, found direct correlation between performance on the UFOV test and likelihood of involvement in a crash. “People with a 40 percent or greater impairment in the useful field of view were more than twice as likely to be involved in a crash. For every 10 points of reduction in a driver’s useful field of view measure, his or her crash risk rose by 16 percent, regardless of age. Other vision tests did not predict the risk of future crashes.” (*NIH News Release, 4/7/98, at2*).

Adding the UFOV test to the standard DMV vision screen would increase the likelihood of identifying applicants who demonstrate difficulty with processing speed, selective attention, or divided attention. Applicants who demonstrate difficulty with these tasks would then receive the Tier 2 portion of the screening to identify the specific issue and to determine options available to the applicant. Such options might include the use of skills training, adaptive equipment, or appropriate restrictions tailored to the driver’s specific needs. Failure of the UFOV would not automatically result in inability to obtain a first-time or renewed license.

¹⁰ Vision screening for drivers who apply for license renewal on or after their 50th birthday represents the current procedure and has been in place since 1985. The only change this portion of the recommendation adds involves the addition of UFOV to the standard vision screen.

components listed in Tier 1 (visual acuity, field of vision, and Useful Field of View).

All drivers referred to DMV, by internal or external sources, because of concerns about their ability to drive safely would receive both Tier 1 and Tier 2 screening.¹¹

- (iii) **Implications of Screening Results:** Drivers who apply for routine renewal on or after their 50th birthday and who pass Tier 1 receive a renewal. Drivers in this category who do not pass the visual acuity and/or field of vision portions of Tier 1 must consult a vision care specialist for correction of any vision problems before applying again. Should a driver in this category have questionable results on the UFOV test, they would proceed to Tier 2 for additional screening to determine the issue.

For drivers who receive both Tier 1 and Tier 2 screening, the determination of whether to issue a license should be made after considering a number of factors, including remedial and adaptive resources available, changes that might be expected following skill improvement training, and possible restricted licensing options tailored to an individual driver's capabilities and circumstances.

(2) **Reporting**

- (a) **Method of Reporting.** Effective identification of at-risk drivers requires a simple, efficient process which physicians, family members and others may use to report concerns about ability to drive. In its current state, the DMV reporting process does not accomplish this objective because of the content and formatting of reporting forms.

RECOMMENDATION #4: Revise and simplify content, organization and format of reporting forms to provide and elicit necessary information to evaluate driver ability.¹²

- (b) **Subject Matter.** Effective identification of at-risk drivers involves reporting the types of conditions that specifically affect driving behavior. The current statutory requirement only requires reporting of "every person over 14 years of age diagnosed as having a

¹¹ Stated another way, there are at least three "points of entry" to the tiered screening: (1) Application for a new license (either first license or new resident of Oregon applying for the first time); (2) Routine application for license renewal on or after the applicant's 50th birthday; and (3) Referral from either an internal DMV staff person or an external source such as a physician, family member or friend because the referral source is concerned about the driver's ability to drive safely. The components of proposed Tier 1 screen vision and visual attention by testing visual acuity, field of vision, and Useful Field of View. They would replace the current vision screen, and thus comprise just one part of the application procedure (in addition to the knowledge test and drive test, for example.)

¹² ODAC reviewed forms utilized by other states such as Missouri for examples.

disorder characterized by momentary or prolonged lapses of consciousness or control that is, or may become, chronic.”¹³ The current requirement is insufficient to communicate other types of conditions that may adversely affect driving behavior.

RECOMMENDATION #5: Revise the list of medical conditions in ORS 807.710(1) affecting driving ability which must be reported to DMV to reflect the broad range of conditions that affect driving behavior (include cognitive impairments, limited mobility, and visual impairments). Any revisions must distinguish between reporting a diagnosis and reporting at-risk drivers.

- (c) **Who Must Report.** Current statutory language requires only “those persons authorized by the State of Oregon to diagnose and treat disorders of the nervous system”¹⁴ to “report those persons 14 years or older diagnosed as having a disorder characterized by momentary or prolonged loss of consciousness or control that is, or may become, chronic.” The current requirement fails to include other types of health care providers who may have knowledge of a person who may be unsafe to drive.

RECOMMENDATION #6: Expand the list of mandatory reporters of at-risk drivers to include other health care providers, e.g. vision care specialists.

- (d) **Who Should be Encouraged to Report.** To assist with effective identification of at-risk drivers, those persons who are concerned about a driver’s lack of ability to safely operate a motor vehicle should be encouraged to report the driver to DMV for evaluation.

RECOMMENDATION #7: DMV should address issues surrounding confidentiality.¹⁵

RECOMMENDATION #8: Encourage and emphasize the importance of reporting at-risk drivers by social service providers, relatives, pharmacists, and others.

RECOMMENDATION #9: Facilitate self-regulation by developing a self-screening tool to assist an older driver or their significant others in recognizing impairments they have which might affect driving ability.

¹³ ORS 807.710 (1999).

¹⁴ ORS 807.710.

¹⁵ ODAC considered issues of patient confidentiality with respect to reporting and recommends DMV consult the appropriate resources to implement policies protecting confidentiality. Similarly, ODAC recommends DMV explore issues relating to civil liability.

- (e) **Facilitate Physician Education Regarding Reporting.** Issues affecting older drivers are complex. Physicians would benefit from increased awareness of their role in reporting.

RECOMMENDATION #10: Form a working group consisting of DMV, the Oregon Health Division, the Oregon Medical Association, Alzheimer's Association-Oregon Trail Chapter, and include other interested groups to develop and implement strategies that will assist physicians in understanding their role in reporting impairments that may compromise driving.¹⁶

- (3) **Driver Re-Examination Program.**¹⁷
- (a) **Response time of Driver.** Effective identification of at-risk drivers requires timely response to DMV notification. The current rules provide that a driver must complete required tests within two months of the date of the request letter or face suspension of driving privileges unless the person surrenders his or her driver license and states that he or she has quit driving.¹⁸ This two-month time period increases the risk that unsafe drivers will continue to drive even after the department has knowledge that they may lack necessary capacities to drive safely, and is not sufficient to meet the safety objectives of the program.

RECOMMENDATION #11: Require the individual receiving notification of re-examination to contact DMV by telephone or in person within 14 calendar days of the mailing date of the letter.

- (b) **Response Time of DMV.** Effective identification of at-risk drivers requires DMV to perform the re-examination in a timely fashion. While this program includes many appropriate components, DMV lacks sufficient staff and funding to administer the program effectively. DMV must be able to initiate testing in a timely fashion.

RECOMMENDATION #12: Require DMV to initiate necessary testing within 30 calendar days of driver contact.¹⁹

- (c) **Accessibility of the Driver Re-Examination Program.** This program offers several strategies to assist in the identification of at-risk drivers. However, members of the public and DMV staff may

¹⁶This recommendation does not seek to provide a finite list of participants, but instead to suggest potential interested members. The list could include others such as the Oregon Optometric Physician Association.

¹⁷ OAR 735-076-0020 (1999).

¹⁸ OAR 735-076-0020(2).

¹⁹ The implication of this recommendation is that sufficient staff and funding are necessary to achieve the result and to administer the program effectively.

not be sufficiently informed as to its existence or how to access the program.

RECOMMENDATION #13: Ensure the Driver Re-Examination Program process is publicized and easily accessible.

- (4) Driver Improvement Program.** This program (ORS 809.480) seeks to reduce traffic convictions and accidents.²⁰ The program offers four steps, beginning with an advisory letter to the driver.²¹

RECOMMENDATION #14: Enhance the Driver Improvement Program by requiring drivers who meet certain criteria to come to a DMV field office for screening at Step 1 (OAR 735-072-0030(1))²². If screening indicates the need, the driver would immediately go to Step 3 (OAR 735-072-0030(3))²³. Consider the following possible criteria:

- (i) Two convictions for hazardous violations within the previous twelve months;**
- (ii) Two preventable traffic crashes within the previous twelve months;**
- (iii) One traffic crash and one unrelated traffic conviction within the previous twelve months.**

B. Availability and effectiveness of remedial measures such as skills training, adaptive equipment, physical therapy and adjustment of driving practices.²⁴

Skills training, adaptive equipment, and adjustment of driving practices have been shown to be effective in assisting drivers in developing or maintaining the ability to perform tasks necessary to driving safely. Further work should be done

²⁰ See ORS 809.480(1).

²¹ OAR 735-072-0030(1).

²² As of this writing, OAR 735-072-0030(1)(Step One) allows DMV to send an advisory letter under the following circumstances:

- (a) A person is convicted of two traffic offenses occurring within a 12-month period;
- (b) A person is involved in two preventable accidents occurring within a 12-month period; or
- (c) A person is convicted of one traffic offense and is involved in one preventable accident both occurring within a 12-month period.

Recommendation #14 may operate in conjunction with the existing rule or may provide concepts for revising the current rule. Recommendation #14 introduces the language “hazardous violation” to be included in criteria for determining whether a situation would suggest the need for a more aggressive response. In addition to an advisory letter, those drivers meeting the criteria would be required to participate in at least Tier 1 of the proposed tiered screening process and possibly Tier 2 depending upon the Tier 1 results. The intent of this recommendation is to improve the effectiveness of an existing mechanism (the Driver Improvement Program) in identifying at-risk drivers earlier.

²³ Step Three of the program consists of a driver improvement interview which is described in OAR 735-072-0040 (1999). During the driver improvement interview, the DMV driver improvement counselor selects appropriate remedies based upon the type of violations the driver’s record reflects.

²⁴ HB 2446(2)(b)(1999).

to identify conditions for which remedial measures effectively reduce risk factors for unsafe driving.

RECOMMENDATION #15: DMV should increase efforts to make information available to the public regarding driver retraining programs, the use of adaptive devices and driving rehabilitation resources for drivers with impairments. DMV should utilize the expertise of the rehabilitation community to identify and promote appropriate remedial measures. DMV should incorporate information about remedial opportunities into the Driver Re-Examination program.

C. Prevalence and effect of degenerative processes affecting vision, mobility, cognitive functions and reaction time.²⁵

A wide range of degenerative processes might cause a driver to experience decreased ability to perform one or more functions necessary to drive safely. These processes might include factors other than “loss of consciousness or control.”²⁶ To enhance the department’s ability to respond to issues facing older drivers in an effective manner, it is necessary to consider other degenerative processes that affect driving ability.

RECOMMENDATION #16: DMV should identify cognitive and functional limitations with respect to capacity to perform actions necessary to drive safely. Once cognitive and functional limitations affecting capacity to drive safely have been identified, include these limitations in mandatory and voluntary reporting requirements and in public education initiatives.

RECOMMENDATION #17: Using the ODAC recommendations as a guideline, DMV should revise the current DMV Medical Review process for identifying at-risk drivers.

D. Effectiveness of public education initiatives.²⁷

ODAC has concluded that public education forms a powerful tool in addressing the challenge of developing a comprehensive approach to licensing older drivers. Efforts should be made to facilitate a broad-based public education program for the benefit of seniors, family members, health care providers, and the public in general.

RECOMMENDATION #18: Form a DMV-led consortium of groups interested in contributing to the public education effort to develop and implement an education and outreach strategy for this state. The consortium should include, but not be limited to, AARP/55-Alive, AAA, Driving Decisions for Seniors, the Oregon Association of Area Agencies on Aging and Disability,

²⁵ HB 2446(2)(c)(1999).

²⁶ ORS 807.710.

²⁷ HB 2446(2)(d).

the Oregon State University Extension Service, the Alzheimer's Association, Oregon Disability Commission, and the Governor's Commission on Senior Services.

RECOMMENDATION #19: DMV should develop education initiatives for seniors to promote self-regulation, utilization of remedial technology and techniques to maintain safe driving practices, utilization of transportation alternatives, and the importance of reporting at-risk drivers who are unable or unwilling to self-regulate. Such initiatives should raise awareness of community resources through public education.

RECOMMENDATION #20: DMV should increase publicity for the Driver Re-Examination program as part of the effort to make it better known and more accessible.²⁸

RECOMMENDATION #21: DMV should develop training and information strategies targeted to the health care professions (MD, OD, DO, PT, OTR/L, NP, PA, pharmacists²⁹) which can be used and promoted by health care associations. Topics should include identification of medical conditions that may affect the ability to safely operate a motor vehicle, and information on mandatory and voluntary reporting.

RECOMMENDATION #22: DMV, in collaboration with DPSST³⁰, should develop a training curriculum for law enforcement officers and include topics such as identification of medical issues creating an impairment that may affect the ability to safely operate a motor vehicle (e.g. loss of mobility or flexibility, decrease in visual acuity³¹ or hearing loss, loss of cognitive ability), and review of the Driver Reporting Form.

RECOMMENDATION #23: DMV should send to drivers needing to renew their licenses a summary of recent changes in traffic law with the driver's license renewal notices.

E. *Other Recommendations.*³²

When people can no longer drive, they must find alternate forms of transportation. There will be increased need for frontier³³, rural³⁴ and urban³⁵

²⁸ Recommendation #20 reflects two objectives. The first objective involves increasing public awareness about the existence, purpose, and benefits of the Driver Re-examination program. The second objective involves making the making it easier for the public to use or gain access to the program.

²⁹ Medical doctors, Doctors of Optometry, Doctors of Osteopathy, Physical Therapists, Occupational Therapists, Nurse Practitioners, Physicians' Assistants, and Pharmacists.

³⁰ Department of Public Safety Standards and Training.

³¹ Or visual ability generally.

³² HB 2446(2) specified that the study need not be limited to the four areas considered above. During the course of its work, ODAC identified other issues that play a key role in understanding the needs of older drivers. The recommendations in this section address these other issues.

accessible transportation alternatives for seniors and disabled persons. These additional recommendations reflect the committee's appreciation for these collateral implications of new approaches to licensing drivers.

RECOMMENDATION #24: ODOT should sponsor seed grants to communities to develop volunteer-based Driving Decisions services to assist seniors and persons with disabilities in finding alternative forms of transportation.

RECOMMENDATION #25: ODOT should increase funding for accessible transportation alternatives.

As the numbers and percentages of older drivers using highways increase over the next two decades,³⁶ the importance of understanding implications of the driving environment also increases.³⁷ The *Older Driver Highway Design Handbook* "links the characteristics of older drivers to design, operational, and traffic engineering recommendations keyed to specific roadway features."³⁸ The recommendations in this handbook include practical strategies relating to street-name signage to accommodate reduction in visual acuity associated with increasing age.³⁹ ODAC has concluded that implementing key recommendations from the *Older Driver Highway Design Handbook* will assist in increasing roadway safety as the population ages.

RECOMMENDATION #26: As ODOT replaces signage, ODOT should adopt guidelines from the U.S. Department of Transportation Older Driver Highway Design Handbook for all new signs.⁴⁰

³³ "Frontier" means the areas of the state that are inhabited by six or less persons per square mile and are not rural, suburban or urban. OAR 333-200-0012(10)(1999).

³⁴ "Rural" means a geographic area 10 or more miles from a population center of 10,000 or more, with a population density of greater than six persons per square mile. OAR 333-200-0012(25).

³⁵ "Urban" means an incorporated community of 10,000 or more population. OAR 333-200-0012(28).

³⁶ See "The Older Driver Highway Design Handbook," U.S. Dept. of Transportation, Federal Highway Administration Publication No. FHWA-RD-97-135 (1998) at page (v). Specifically, "The 65 and older age group, which numbered 33.5 million in the United States in 1995, will grow to more than 36 million by 2005 and will exceed 50 million by 2020, accounting for roughly one-fifth of the population of driving age in this country. In effect, if design is controlled by even 85th percentile performance requirements, the "design driver" of the early 21st century will be an individual over the age of 65."

³⁷ "There are important consequences of the changing demographics in our driving population. Traffic volumes will increase, problems with congestion will become more widespread, and the demands on drivers will grow significantly beyond present-day operating conditions. At the same time, a steadily increasing proportion of drivers will experience declining vision; slowed decision making and reaction times; exaggerated difficulty in dividing attention between rapidly shifting sources of potential conflicts and other traffic information; and reductions in strength, flexibility, and overall fitness." *Id.*

³⁸ *Id.*

³⁹ *Id.* at p. 13. See, e.g., (J.) Design Element: Street-Name Signage (1) "To accommodate the reduction in visual acuity associated with increasing age, a minimum letter height of 150 mm (6 in.) is recommended for use on post-mounted street-name signs; and (4): "The use of redundant street-name signing for major intersections is recommended, with an advance street-name sign placed upstream of the intersection at a mid-block location, and an overhead-mounted street-name sign posted at the intersection."

⁴⁰ See *id.* at p. 87. "Burnham (1992) noted that the selection of letter size for any sign must evaluate the needs of the user, which are continuously changing as a function of changes in automotive technology, the roadway system, and the population itself. It is estimated that by the year 2020, 17 percent or more of the population – nearly one in five – will be older than 65

III. SUMMARY AND CONCLUSIONS

The members of ODAC have concluded that chronological age alone does not represent a valid or reliable criterion for assessing risk of being involved in a motor vehicle accident. While studies show that certain functional capacities typically decline with advancing age, the committee believes a fair licensing system must reflect several components designed effectively to identify unsafe drivers of any age, to evaluate their abilities to perform specific tasks necessary to drive safely, and to provide a range of options when older drivers are unable to perform certain tasks necessary to driving safely. The recommendations in this report focus attention and resources on the serious cases and should represent a cost-effective response to the problem identified by the 1999 Oregon Legislature.

ODAC respectfully submits these recommendations to the Oregon Department of Transportation. The members of ODAC express their heartfelt appreciation ODOT for the opportunity to participate in this important study.



DATED THIS 11TH day of September, 2000
Salem, Oregon

The Older Driver Advisory Committee

years of age (Transportation Research Board, 1988). The ability to read street signs is dependent on visual acuity as well as divided attention capabilities, both of which decline significantly with advancing age. . . . **Older drivers participating in focus groups and completing questionnaires for traffic safety researchers over the past decade have consistently stated that large street signs with bigger lettering and standardization of sign placement overhead would make driving an easier task** (Yee, 1985; Gurman and Milstein, 1988; Cooper, 1990; Staplin, Lococo, and Sim, 1990; Benekohal, Resende, Shim, Michaels, and Weeks, 1992; Knoblauch, Nitzburg, Reinfurt, Council, Zegeer, and Popkin, 1995).” (emphasis added).

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September 2000

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THE OLDER DRIVER ADVISORY COMMITTEE

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Exhibit A

Supplemental Report **II. on the Older Driver Study**

This report supplements the Department's January 18, 2001, report to the Seventy-First Legislative Assembly regarding the effects of aging on driving ability. This additional report focuses on the extent of the problem nationally and in Oregon.

**Oregon Department of Transportation
Driver and Motor Vehicles Services**

August 2001

Introduction

Concerned about the problems associated with aging and driving ability, the 1999 Oregon Legislature passed HB 2446 (section 1, chapter 495, Oregon Laws, 1999) which required the Department to study the issue with the assistance of an Advisory Committee and to develop a comprehensive approach to licensing older drivers. The legislature instructed the Department to implement those changes that did not require statutory change and to return to the 2001 Legislative Assembly with the study results, including recommendations for legislative change.

The concerns and issues raised regarding the effects of aging on driving ability were not carried forward in the transition to the 2001 Legislative Assembly and the Department's report did not provide that detail. The following is the basis for the public policy concerns on the extent of the Older Driver Problem.

The National Problem

Current Problem

- ◆ The number of drivers 70 years old and older involved in fatal accidents increased 39 percent from 1989 to 1999.
- ◆ In 1996, drivers 70 years old and older made up 9.5 percent of the population, but accounted for 12.3 percent of all driver fatalities. See Figure 1.

U.S. Driver Fatality Percentage Compared to the Percentage of Drivers by Age¹

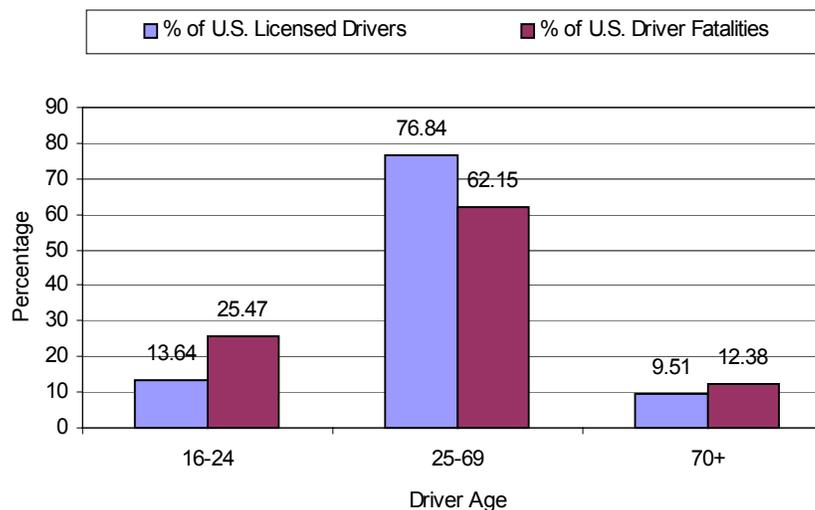


Figure 1

- ◆ When the driver fatality rates are adjusted based on the estimated vehicle miles traveled by each age group, the highest rates are found among the youngest and oldest drivers. The fatality rate for drivers 85 years old and older was over nine times as high as the rate for drivers 25 through 69 years old. See Figure 2.

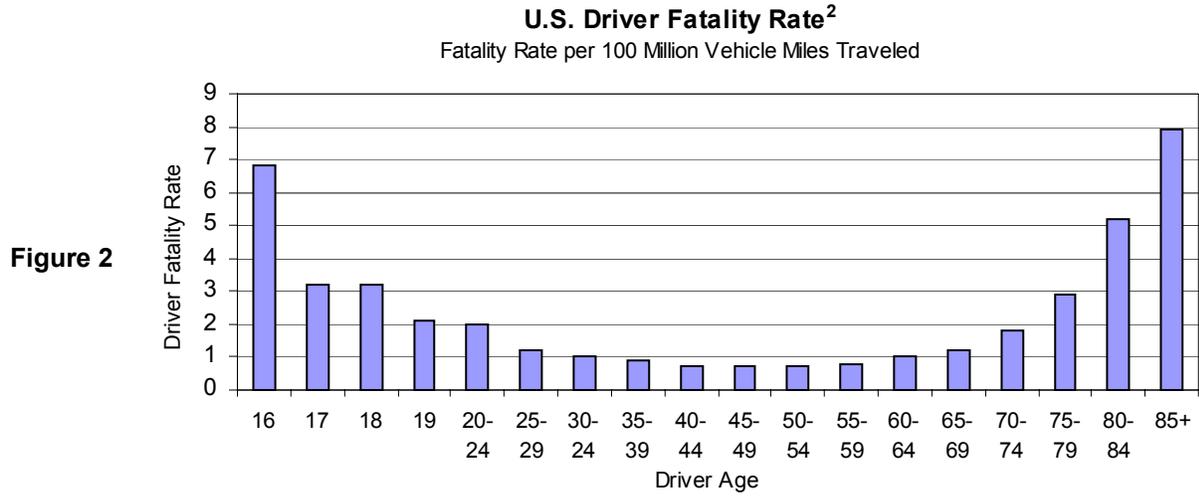


Figure 2

- ◆ Highway deaths for motorists under 65 have dropped by 3% since 1995 but deaths among seniors have jumped 15%.
- ◆ When a crash occurs, older motorists are 25% more likely to die than those 55 and younger.
- ◆ Older drivers are more at risk of being responsible for causing a crash. For every 100 fatal accidents involving an older driver, the older driver is responsible for 85 of those accidents. For every 100 fatal accidents involving a driver 45-49 years of age, the 45-49 year old is responsible for 43 of those accidents. For every 100 fatal accidents involving a teen driver, the teen driver is responsible for 69 of those accidents. See Figure 3.

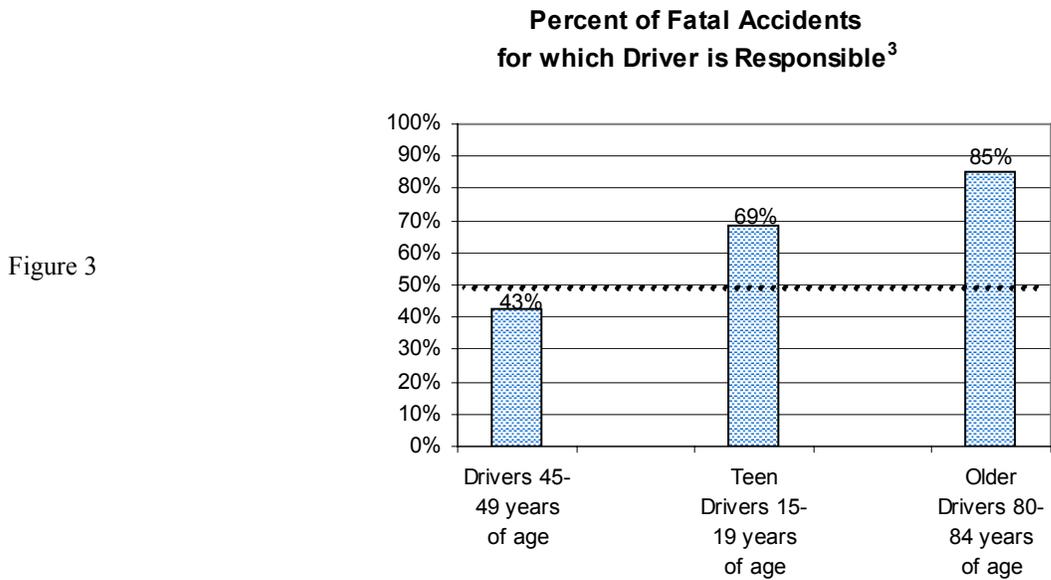


Figure 3

- ◆ Drivers 65 and older account for one third of all deaths at intersections. Nearly half of these deaths occurred while attempting left turns.
- ◆ Elderly drivers are more likely to be involved in multi-vehicle collisions that result in more serious injuries than those involving younger drivers.

Future Trends

- ◆ **The older generation is projected to double over the next 30 years, growing to 70 million nationwide by 2030. This represents an annual increase of approximately 3.33%.**
- ◆ **The number of elderly traffic fatalities will more than triple by the year 2030. The number of elderly traffic fatalities in 2030 will be 35% greater than the number of alcohol-related traffic fatalities in 1995.**
- ◆ Between 1990 and 2020, the total annual mileage driven will increase by 465% for males and almost 500% for female elderly drivers.
- ◆ Baby Boom women will be as mobile as their fathers were into old age, adding to the increase in older drivers.
- ◆ NHTSA estimates fatalities among elder drivers will increase to more than 23,000 annually or 63 deaths per day by 2030.

The Oregon Problem

Current Problem

- ◆ Older driver involvement in fatal crashes in Oregon increased by 20.5% from 1991 to 1999.
- ◆ Drivers 70 years old and older made up 10.5 percent of Oregon’s population, but accounted for 14.2 percent of all driver fatalities in 1999. See Figure 4.

Oregon Driver Fatality Percentage Compared to Percentage of Drivers by Age⁴

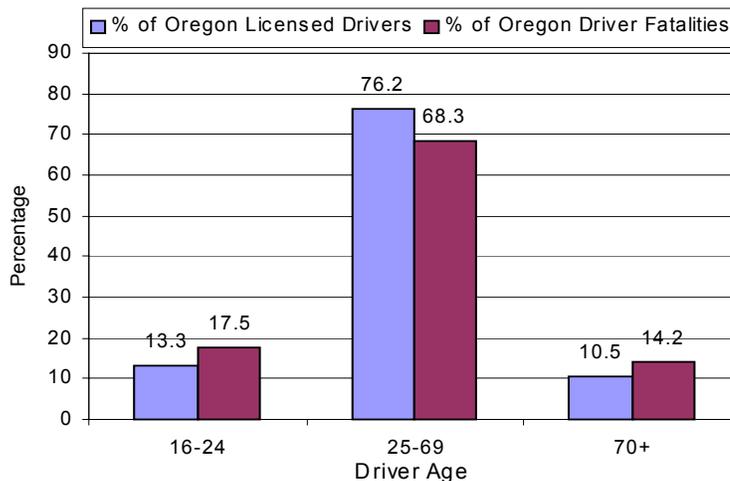


Figure 4

The trend of driver fatalities in Oregon is similar to that in the U.S. as a whole. See Figure 1.

- ◆ When older driver fatality rates were calculated based on vehicle miles traveled, the highest rates were found among the youngest and oldest drivers. Drivers 75 and older are:
 - ◆ Six times as likely to die in a crash than those age 25-69;
 - ◆ 2.6 times more likely to be involved in a fatal crash than those age 25-69; and
 - ◆ Nearly two times as likely to be involved in a non-fatal crash than those age 25-69. See Figure 5.

The trend of driver fatalities in Oregon is similar to that in the U.S. as a whole. See

Oregon Driver Fatality Rate for 1999⁵

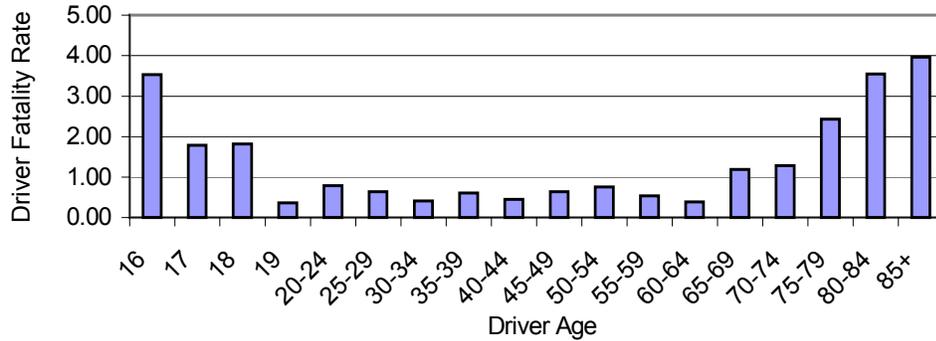


Figure 5

Figure 2.

- ◆ **Persons with cognitive impairment are 7.6 times more likely to have a car crash. There were 3.2 million residents in Oregon in 1998. Of those, 70,000 have Alzheimer’s Disease. Forty-seven percent of everyone over 85 years has Alzheimer’s Disease or another type of dementia.**
- ◆ 2,372 drivers were referred to Oregon DMV's Medical Re-examination Program in 1997. Fifty-seven percent of those drivers were over age 66. See Figure 6.

and % of Drivers Referred to DMV's Medical Re-Exam Program in 1997 by Age⁶

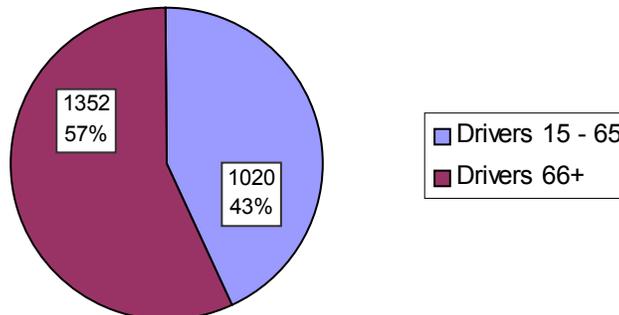


Figure 6

Oregon's Future Trends

- ◆ Among the 50 states and the District of Columbia, Oregon is projected to have the 4th highest proportion of elderly in 2025. The proportion of Oregon's population classified as elderly is expected to increase from 12.8 percent in 2000 to 24.2 percent in 2025. This is an annual increase of 0.46 percent.
- ◆ Figures 7 and 8 show projections on the overall number of crashes and driver fatalities for older drivers. (Projections are very conservative.)

Figure 7

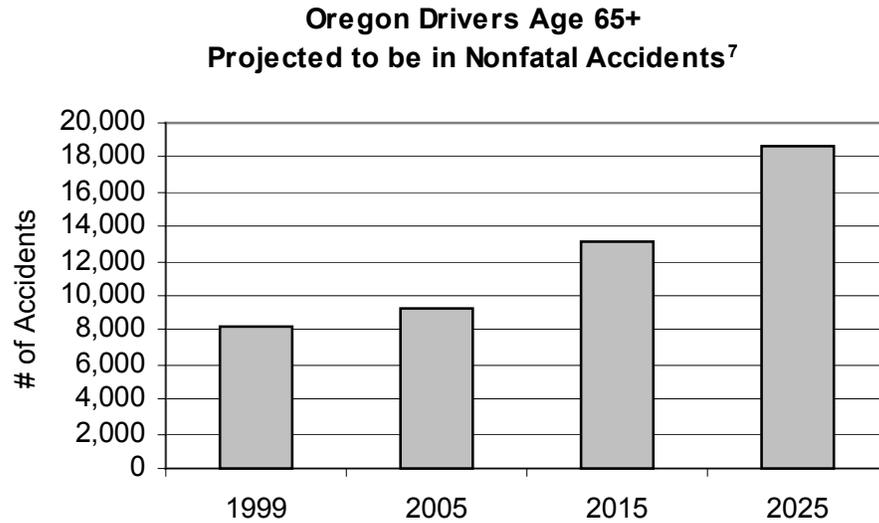
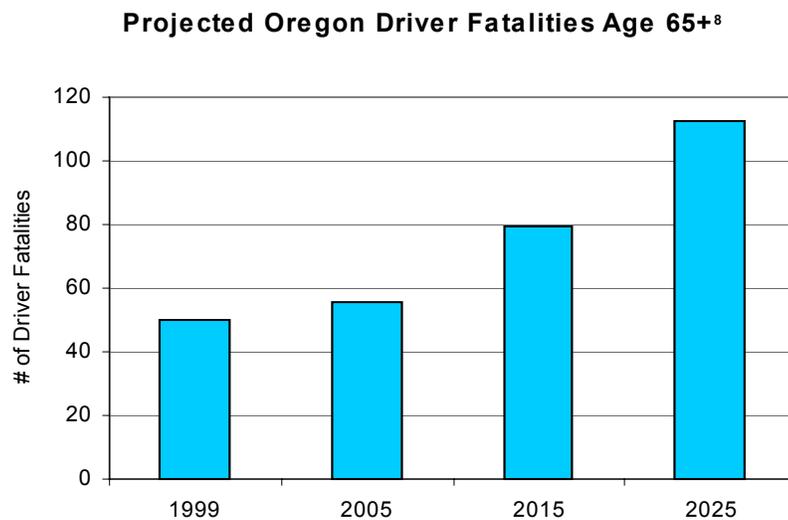


Figure 8



Oregon's Older Drivers Compared to Older Drivers in the U.S.

- ◆ The national average of Vehicle Miles Traveled (VMT) is 52,771,000 miles per year per state. Oregon's average VMT is lower than the national average, at 34,680,000 miles per year. However, Oregon's fatality rate per 100 million VMT is almost equal to the national average. The national average is 1.5 fatalities per 100 million VMT, and Oregon's average is 1.2 fatalities per 100 million VMT. The average number of VMT in Oregon has increased by 15.6% since 1995.
- ◆ **When comparing the nation's representation of drivers over 70 and their involvement in driver fatalities, Oregon's numbers are higher both in the percentage of drivers 70 and over and in the percentage of driver fatalities. See Figure 9.**

Comparison by Age of Percentage of Driver Fatalities to Licensed Drivers in Oregon and the U.S.⁹

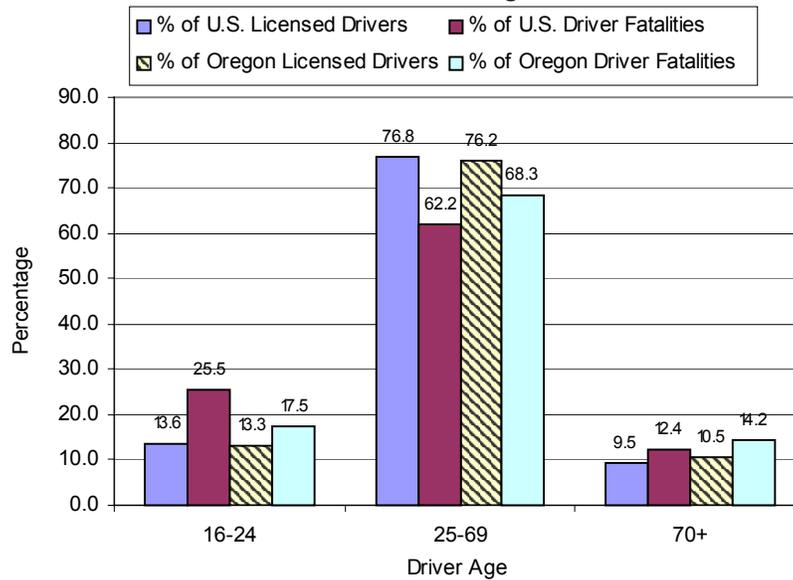


Figure 9

What Other Jurisdictions are Doing

Other states recognize the older driver problem and are working to make roads safer for seniors. (Examples)

- ◆ Florida is enlarging some highway street signs from 12 inches to 36 to accommodate the declining vision of its 2.9 million elderly drivers.
- ◆ Nine states report they are considering legislation to require doctors to refer serious medical conditions affecting seniors. Some states similar in population size to Oregon already have medical referral programs.
- ◆ Thirteen states report they require seniors to renew their licenses more frequently than other drivers.
- ◆ California and Washington offer driver training courses for older drivers.
- ◆ Many states are holding summits and conferences, similar to Oregon's Older Driver Advisory Committee/Study, to address the unique issues associated with declining skills due to age.
- ◆ Maryland is considering using the Useful Field of View Screening tool.

Other nations also recognize that there is an older driver problem that needs to be addressed.

- ◆ The United Nations declared 1999 the International Year of the Older Person and the older driver issue was the focus of the UN's Global Conference of the International Federation of Aging.
- ◆ The Canadian Council of Motor Transport Administrators developed a Strategy for the Development of Elderly Driver Programs in 1990.
- ◆ Ireland held a conference on The Older Driver, Health and Mobility in 1998.
- ◆ Australia's Monash University conducted a Survey of Older Road Users: Behavioral and Travel Issues.
- ◆ The older driver issue is one of the top driver safety agenda topics at National and International Motor Vehicle Conferences.

Summary

The highest driver crash and fatality rates are found among the youngest and oldest drivers. The fatality rate for older Oregonians (70+) is more severe than that of the teen drivers. In response to the concerns around teen drivers, the 1989 Oregon Legislature passed the provisional licensing law with special programs for teen drivers and the 1999 Oregon Legislature passed major reform legislation on licensing teen drivers.

Recognizing that the issue of aging and driving was emerging as a leading driver safety issue (comparable to teen driving and alcohol related crashes/fatalities), the 1999 Oregon Legislature responded by asking the Department to develop a comprehensive plan to protect the safety of the public and Oregon's older drivers.

Footnotes

¹ Cerrelli, E. C., 1998. *Crash data and rates for age-sex groups of drivers, 1996*. National Highway Traffic Safety Administration. www.nhtsa.dot.gov/people/ncsa/AgeSex

² Cerrelli, E. C., 1998. *Crash data and rates for age-sex groups of drivers, 1996*. National Highway Traffic Safety Administration. www.nhtsa.dot.gov/people/ncsa/AgeSex

³ Elliot, B., Elliot, D. & Lysaght, A. 2001. *Older driver risks and countermeasures: Source book*. Australian Transport Safety Bureau.

⁴ Oregon Department of Transportation. 1999. *State Driver Licenses and Fees and the Oregon Traffic Accident Report*.

⁵ Cerrelli, E. C., 1998. *Crash data and rates for age-sex groups of drivers, 1996*. National Highway Traffic Safety Administration. www.nhtsa.dot.gov/people/ncsa/AgeSex

Oregon Department of Transportation. 1999. *State Driver Licenses and Fees and the Oregon Traffic Accident Report*.

⁶ Milton, K. 1997. Oregon helps drivers make the change from behind-the-wheel to permanent passenger. *Move*, vol. 2, 2:10-12.

⁷ U.S. Census Bureau. 2000. *Population estimates for the U.S., regions, divisions, and states by 5 year age groups*. Washington, DC. www.osl.state.or.us/lib/census/oregon99/st-99-08.txt

Oregon Department of Transportation. 1999. *State Driver Licenses and Fees and the Oregon Traffic Accident Report*.

⁸ U.S. Census Bureau. 2000. *Population estimates for the U.S., regions, divisions, and states by 5 year age groups*. Washington, DC. www.osl.state.or.us/lib/census/oregon99/st-99-08.txt

Oregon Department of Transportation. 1999. *State Driver Licenses and Fees and the Oregon Traffic Accident Report*.

⁹ Cerrelli, E. C., 1998. *Crash data and rates for age-sex groups of drivers, 1996*. National Highway Traffic Safety Administration. www.nhtsa.dot.gov/people/ncsa/AgeSex

Oregon Department of Transportation. 1999. *State Driver Licenses and Fees and the Oregon Traffic Accident Report*.