

Issue Paper: Older Drivers

Let Miss Daisy Do The Driving



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Key Issues

Invest in more in research – Research is required for federal and state governments to understand and then address the broader social policy and transport needs of older people.

Safer vehicles – Need to work with vehicle manufacturers to build safer and also more appropriate vehicles (e.g. door opening, location and size of speedo, type of mirrors, seat belt adjusters).

Infrastructure - roads and pedestrian areas – Ensure that the needs of older people are included when planning on infrastructure needs of the future – signage and line marking, turn right arrows, longer timing for pedestrians to cross at traffic lights.

Improved systems for assessing competency to drive – Monitor state licensing systems, advocate for changes to be research based, and monitor the changes – any reduction in injury/fatality rates, impact on people's mobility.

Awareness Building - Ensure target groups (families, health-care providers and seniors' organizations), as well as the wider public, are knowledgeable about the issues of older drivers and their mobility needs (disseminating accurate, up-to-date information through public education programs, material in the media).

Improved and more accessible public education & information - More accessible information from governments (Federal, State and local) – not only road and licensing authorities but also groups like COTA (Council on the Aging), Department Ageing Disability & Home Care, Veterans Affairs, NGO community centres, seniors' organizations and motoring clubs. There is a need to look at driver training programs to reach drivers at right time (early intervention model) with appropriate information.

Improved public transport – Although public transport it has limitations in the type, location and scheduling of services, the needs of older people must be considered in improvements to existing services and in the development of new services (eg park and ride near transport hubs, access , lighting, seating, lifts, toilets, etc).

Increase community transport and alternative transport – More flexible local transport options are required – particularly in areas which have higher numbers of seniors.

Planning & Policy Partnerships - Develop and maintain effective, collaborative partnerships to enhance the safety and quality-of-life of NSW's older drivers. Partnerships with organizations like COTA (Council on the Aging), Department Ageing Disability & Home Care, Department of Health/Community Health Centres, Veterans Affairs, University faculties involved in research on aspects of aging, AMA, College of General Practice, motoring clubs etc.

Introduction

As a society we have achieved great personal mobility by car travel. The sheer scale of our country and the small population has been the main reason we are so dependent on the car. But what happens when someone can no longer drive when they must rely on other ways of getting around, the available options rarely deliver similar levels of access and mobility. There are adverse consequences for older adults who cease driving; their quality of life is reduced as a result of poor mobility.

"In reality the mobility problem which will face the overwhelming percentage of older people in just a few years is **losing the ability to drive**" (Rosenblum & Stahl, 2002) this will have enormous ramifications for not only older people but for the whole community.

The major stimulus for addressing the issue of older drivers is demographic; the growth in the number of older people as a percentage of the population in developed countries. This segment of the population its current and future transport and mobility needs will have a significant impact on the whole community.

Governments are yet to grasp that the majority of the 'baby boomer' generation will have held driving licences and had access to vehicles; will prefer driving as their primary means of transport; and will have been the first to have been dependent on their driver's licence and car for their whole lives. The implications of what to do when this massive proportion of the population can no longer drive are significant.

There has been extensive media coverage in the past year regarding the issue of older drivers. Myths and misconceptions have been reinforced by sensationalist media reporting; a few high profile cases can distort the facts. This has certainly been the case in NSW. Contrary to popular belief, research shows that older drivers are not a significant safety risk to others.

Older drivers are low-risk drivers when compared to other age groups – they regularly engage in safer behaviours such as wearing their seatbelts, and tend to avoid driving while fatigued or drink-driving. They are rarely involved in risky high-speed driving. In general, older drivers regulate their driving and avoid driving in areas and at times of the day where they feel uncomfortable, with an overall risk-minimisation approach.

The purpose of this paper is to provide a clear representation of the facts about older drivers. This includes information on their crash involvement; health issues (physical and mental); their transport and mobility needs; the issue of vehicle safety; the role of road infrastructure; review of existing resources and finally, recommendations about the role of Motoring Clubs.

The car is vitally important to older people for mobility and independence. For many older people, particularly those living in regional and rural areas, the car is the only available form of transport.

An OECD Report (2001) identified major policy priorities required to address the mobility and safety issues arising from the ageing of the population.

- Support and funding to enable lifelong mobility
- Support for older people to continue driving safely
- Provision of suitable transport options to the private car
- Safer vehicles for older people
- Development of safer roads and infrastructure.

These priorities cover the areas which have been identified in Australia and which this paper seeks to address. The issues are challenging and governments will need to work together, with all the major stakeholders to find workable solutions.

Demographic trends

The world's elderly population is concentrated primarily in the most developed countries. The 25 countries with the highest proportion of elderly are located primarily in Europe, with the exception of Japan. These countries have between 14-18 per cent of their populations over 65 years; in the USA, the figure is 13 per cent. However, these percentages are set to jump as the 'baby-boomer' generation ages.

There are some significant differences between the elderly today, and these elderly of the future. The current generation of people in their 80s have not had the same access to health services, nutrition or education. The current generation of 80 year-olds have not had the same access to private vehicles, either, and this is particularly the case for women.

In 2002, Dr Sandra Rosenblum noted ... "Those who will be elderly in the coming decades will be, on average, better educated, healthier, more active, and wealthier than any previous generation of older people – and substantially more likely to drive to meet their mobility needs."

The age composition of Australia is projected to change considerably as a result of population ageing. The table below shows the latest ABS projections.

Australia in 2051: almost half the population older than 50 years

Australia will look very different in 2051, with almost one in two Australians being older than 50 years, according to the latest population projections released by the Australian Bureau of Statistics (ABS). These projections, which are not intended as forecasts, are based on a series of assumptions that take into account recent trends in fertility, mortality and migration.

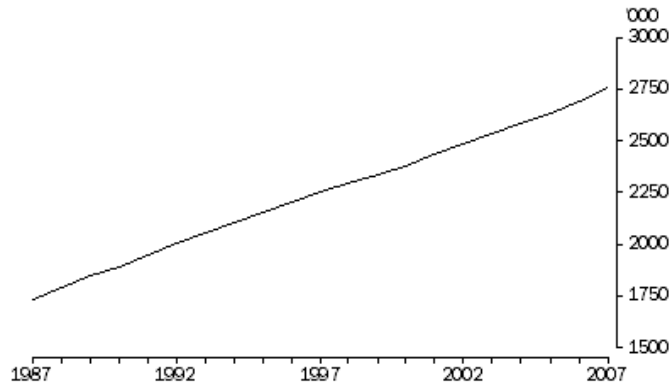
By 2051 Australia's population is expected to increase to between 25 and 33 million people, with around 44 to 48 per cent being older than 50 years. In 2004 Australia's population was 20 million people, with almost one third being older than 50 years. The ageing of Australia's population is the result of sustained low fertility, combined with increasing life expectancy at birth.

The number of people aged 65 years and over will increase rapidly over the next 50 years, from 2.6 million in 2004 to between 7 and 9 million people in 2051. By then, slightly more than one in four Australians will be aged 65 years and over (around one in 8 at 2004).

The number of people aged 85 years and over will increase even faster, from just under 300,000 people in 2004 to between 1.6 million and 2.7 million people in 2051. By then, people aged 85 years and over will make up 6 to 8 per cent of Australia's population, compared to only 1.5 per cent in 2004.

(Source - Australian Bureau of Statistics)

In the 12 months to 30 June 2007, the number of people aged 65 years and over in Australia increased by 72,000 people, representing a 2.7 per cent increase. The proportion of the population aged 65 years and over increased from 10.7 to 13.1 per cent between 30 June 1987 and 30 June 2007.



Population aged 65 years or more, Australia - At 30 June 2007

Demographic Case Study: The situation in New South Wales

Population Ageing Projections

What will NSW and its regional communities look like in the future? Statistical projections have been made into future population growth and ageing, and highlighting expected regional variations.

In comparison, they present us with a picture of what our future community will look like in NSW.

Living longer and healthier

In 1901-1910 the life expectancy at birth for males was 55.2 years and 58.8 years for females i, so the average person would not expect to live to 'pension age'.

Life expectancy has increased dramatically since then, and continues to increase in Australia, with the current life expectancy at birth being 78.9 years for males and 83.6 years for females, with healthy life expectancy (i.e. life expectancy adjusted for time spent in poor health) being 70.9 years for males and 74.3 years for females ii.

The life expectancy for Indigenous people in Australia, however, is well below that for the general population, being around 17-20 years less. iii,iv.

A growing and maturing population

The population of NSW in 2030 will be significantly larger and significantly older than it is today. The NSW population is projected to increase from almost 7 million people in 2006 to almost 8.3 million people in 2031. A significant proportion of the increase will be people aged 65 and older, who currently make up 14 per cent of the population but will increase to over one in five (22 per cent) in 2031, when there will be 1.8 million people 65 and over in NSW.

There will also be a significant rise in the number of 'very old' people, with the number of people in NSW aged 100 years or older expected to increase from 1,000 now to 6,500 by 2026 and 8,200 by 2031. v.

International Comparisons

NSW and Australia are not alone in having ageing populations.

The UN predicts that the 65 and over population of Australia will increase from 12 per cent in 2000 to 17 per cent in 2020 to 23 per cent in 2050, for a total increase of 11 per cent percentage points. This is similar to the projected increases in percentage points over the same period to 2050 for Canada (11 per cent), New Zealand (9 per cent), the USA (9 per cent) and Denmark (9 per cent), but is less than that of countries such as Italy (17 per cent) and Japan (15 per cent) which already have an older age profile than Australia. vi

Future Diversity

Aboriginal people

In NSW, the Aboriginal population is projected not to age as fast as the rest of the population, with the 65 and over Aboriginal population projected to increase by 15 per cent between 2001 and 2009, compared to 44 per cent for the 20-24 age group, and 40 per cent for the 55-64 age group. vii

Culturally and linguistically diverse communities

The proportion of older people from Culturally and Linguistically Diverse (CALD) backgrounds in NSW is projected to grow from 18 per cent in 1996, to 23 per cent of the total older population by 2026, and the proportion of people 80 years and over from CALD backgrounds is projected to grow from 13 per cent to 25 per cent of the population over the same period. viii

Italian people were the largest group of older people from CALD backgrounds in NSW in 1996, and are projected to still be the largest group in 2026. However, the next largest groups of older people from CALD backgrounds are from Poland, Germany, Greece and the Netherlands respectively will be replaced by groups from Greece, Vietnam, China and Germany by 2026. ix

Regional Differences

Both the rates of population growth and the rates of population ageing are projected to vary across NSW regions. These projections are based upon assumptions that are considered most likely to hold over the period, but it is important to note that factors such as life expectancy, fertility, interstate and intrastate migration, and overseas migration can all affect the population.

There is great variation expected in the rate of population ageing between areas of NSW (see table below).

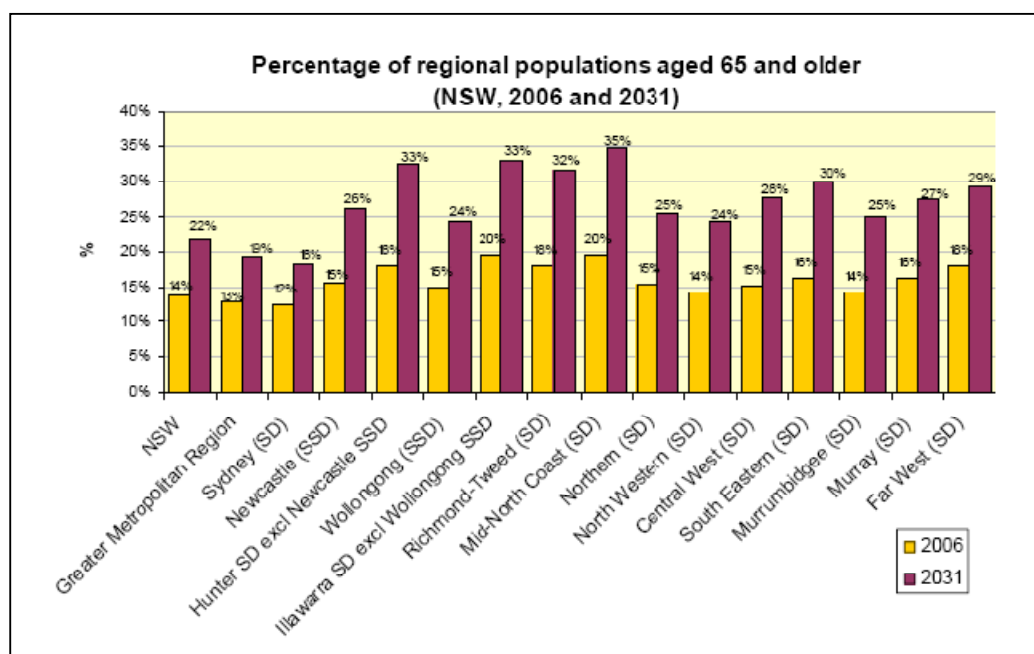
Area	Total Population			Number Aged 65+		
	2006	2031	% Change	2006	2031	% Change
NSW	6,843,900	8,259,200	21%	942,300	1,812,600	92%
Greater Metropolitan Region	5,101,600	6,223,500	22%	648,300	1,202,600	86%
Sydney (SD)	4,310,100	5,290,200	23%	527,700	963,900	83%
Newcastle (SSD)	513,600	610,200	19%	79,300	160,100	102%
Hunter SD excl Newcastle SSD	100,500	121,100	20%	18,100	39,400	118%
Wollongong (SSD)	277,900	323,100	16%	41,300	78,600	90%
Illawarra SD excl Wollongong SSD	140,200	184,700	32%	27,400	61,000	123%
Richmond-Tweed (SD)	229,200	290,500	27%	41,400	91,700	121%
Mid-North Coast (SD)	298,500	373,700	25%	58,300	129,800	123%
Northern (SD)	178,600	180,700	1%	27,300	46,000	68%
North Western (SD)	118,700	123,800	4%	16,800	30,000	79%
Central West (SD)	179,900	193,500	8%	27,200	53,400	96%
South Eastern (SD)	204,900	257,000	25%	33,000	77,100	134%
Murrumbidgee (SD)	153,500	165,400	8%	21,900	41,500	89%
Murray (SD)	115,100	125,900	9%	18,500	34,500	86%
Far West (SD)	23,100	19,400	-16%	4,200	5,700	36%

Sydney has and will continue to have the largest number of people aged 65 and older. Between 2006 and 2031, Sydney is expected to see an increase in its total population of almost 1 million people, including an increase in the number of people aged 65 and older from 527,700 to 963,900 people (an increase from 12 per cent to 18 per cent of the Sydney population).

The overall population in many regions of NSW is projected to increase by a small amount between now and 2031. For example, in North Western NSW the overall population is projected to increase by only 4 per cent from 2006 to 2031, while the population in the Far West is projected to decline.

In the same period, however, the number of people aged 65 and older is set to increase dramatically in many areas (eg in the Hunter the number of people 65 and older is predicted to increase by 118 per cent).

The graph below shows that some areas of NSW are set to age much more quickly than others, such as the Mid-North Coast where the proportion of people 65 and older will increase to 35 per cent by 2031. It is important to note that Sydney has, and is projected to continue to have, the lowest proportion of people aged 65 and older in NSW. (Source NSW Department of Ageing, Disability and Home Care, October 2007)



i Australian Institute of Health and Welfare, *Mortality FAQs*, www.aihw.gov.au/mortality/data/faqs.cfm

ii Australian Bureau of Statistics, *Australian Social Trends Data Cube*, Table 4, Catalogue No. 4102.0, Note: Life expectancy reference year 2005-2010, healthy life expectancy reference year 2002.

iii Productivity Commission (2007) *Overcoming Indigenous Disadvantage: Key Indicators 2007*, Australian Government.

iv Australian Institute of Health and Welfare, *Life Expectancy*, www.aihw.gov.au/mortality/data/life_expectancy.cfm

v Based on calculations from data from the Department of Planning, Transport and Population Data Centre, State and Regional population projections 2004-51, 2005 release, A preferred series, Table 2

vi Withers, G, (2002) 'Population Ageing and the Role of Immigration'. *The Australian Economic Review*, vol 35, no 1, pp104-12, Table 1.

vii Australian Bureau of Statistics (2004) *Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians*, Low series estimates.

viii Gibson, D, Braun, P, Benham, C, Mason, F (2001) *Projections of Older Immigrants: people from culturally and linguistically diverse backgrounds, 1996-2026*, Australia, p xvii-xviii

ix Gibson et al, 2001 op cit.

x Department of Planning, Transport and Population Data Centre, State and Regional population projections 2004-51, 2005 release, A preferred series.

Driver licensing

Driver licensing requirements in Australia are a state responsibility. In most states and territories the process is determined by age. However, there is considerable difference in the licensing requirements imposed on older drivers, ranging from no requirements in two jurisdictions, to age-based medical, vision and on-road testing. A summary of regulations in other jurisdictions can be found in Austroads (2000).

NSW is one of a few jurisdictions worldwide that has a mandatory driving test for older drivers. This test has been a contentious issue and after significant public debate in 2007/2008 the RTA announced reforms to the licensing system for older drivers. The reforms were introduced 1 December 2008.

The new system will involve:

- **Annual medical check-ups now start from the age of 75, instead of 80.** Eight weeks before your birthday each year, you'll receive a medical report form for your doctor to complete, which you'll need to return to any RTA motor registry.
- **Practical driving assessments for drivers from the age of 85 will now be every two years (age 85, 87, 89 etc) instead of every year.**
- **Drivers now have the option of taking a driving assessment from home.** Assessments can now be conducted in many areas of NSW by driving instructors accredited by the RTA, on a 'fee for service' basis. This gives you the option to take an assessment from your home rather than from an RTA motor registry. However, you still have the option of taking the driving assessment from the RTA at no charge.
- **Drivers have the option of a modified licence and will not be required to take an assessment.** If you're still a competent driver but no longer feel comfortable driving in certain situations (for example, driving over long distances), talk to your local RTA motor registry. The manager may issue you with a modified licence based on your individual driving needs. A practical assessment is not required for a modified licence. (Source RTA Website 1/12/08)

The following table summarises the approach to medical and driving tests in other jurisdictions.

Jurisdiction	Licences renewed	Vision Test	Medical Test	Road Test
NSW	1/3/5 year	At renewal	75yrs/ then annually	85 yrs
VIC	3/10 year (after 75 yrs – only 3yr)	None	None	None
SA	10 yr	From 70	70/then annually	None
WA	1/5 yr	Only if reported	75,78, 80/then annually	85
QLD	5/after 75 subject to medical	None	75/then annually	None
TAS	1/2/3/4/5 yrs	75	75 then annually	85
NT	1/5yrs	None	None	None
ACT	5 yrs		75 then annually	None

Note: WA is currently reviewing their older driving assessment

International jurisdictions

European jurisdictions have no on-road assessment at licence renewal, regardless of age. The majority have some form of medical screening from around 65 years.

The USA is similar to Europe with only a few jurisdictions (eg North Carolina) imposing an on-road driving test. The majority have some form of medical screening at around 70, with vision tests starting a little earlier.

The majority of the Canadian provinces have no specific age related testing. However, in the province of Ontario, at age 80, drivers must complete a vision test, knowledge test and are required to attend a group education session (similar to the Years Ahead program).

New Zealand

Until 2006 New Zealand had a licensing system that involved a mandatory on-road driving test for drivers to re-licence at age 80 and two yearly afterwards. There was also a medical fitness to drive certificate required.

The medical certificate of fitness to drive has remained but there are new referral and support systems for GP's and health practitioners. GP's and other health practitioners will be better informed about when to recommend licence conditions or restrictions (eg, no night driving or a distance restriction). GP's will have a new option to refer an older driver (age 75+) for an optional on-road safety test in certain circumstances. This will be available for patients 75 over who are medically fit to drive but their GP is uncertain about their ability to drive safely.

What should a licensing system include?

Austrroads commissioned the Monash University Accident Research Centre (MUARC) to develop and trial a model licence re-assessment program for older drivers. The model was developed in 1999.

The key aspects of the proposed model include:

- Older driver testing based on functional ability rather than chronological age;
- Development of a network of community referral sources;
- The development of assessment instruments of known validity for testing safe driving;
- Use of multi-tiered assessment procedures and instruments;
- Use of a case officer to assist older people through the assessment process;
- Use of re-training and rehabilitation procedures where appropriate; and
- Expansion of the licensing authority's role to include counselling on alternative mobility options, whenever appropriate.

This is suggested as a model but as far as the NRMA is aware has not been implemented.

Older drivers and crashes

There is no argument that older drivers and older passengers suffer higher rates of serious injuries and fatalities in crashes than other age groups but those rates are a result of frailty and/or pre-existing health conditions. In fact in NSW a greater number of older people are seriously injured as a result of a fall, in their home or in the street, than in motor vehicle crashes.

Crash patterns for older drivers are significantly different to those of other age groups. For drivers aged 80 and over, the most common crashes are intersection crashes, where the older driver is turning right across traffic, and crashes where the older driver drives off the road.

The tables below depict a national snapshot of road fatalities, by age-group, and demonstrate that younger and middle-aged drivers continue to make up the bulk of the numbers in the Australian road toll. The second graphic depicts how, statistically speaking, older road users are more likely to die in a crash as a pedestrian or a passenger, than (importantly for this paper) as a driver and that there has been a **decrease** in deaths in the 70+ age group.

Table 2 Deaths by gender and age for individual road user groups – Australia 2005, 2006 and five year trend

	<i>Males</i>	<i>Females</i>	<i>0-16 years</i>	<i>17-25 years</i>	<i>26-59 years</i>	<i>60-69 years</i>	<i>70+ years</i>	<i>All deaths^a</i>
Drivers								
2006	588	173	6	227	378	59	92	762
2005	597	178	5	208	411	74	77	775
% change 2005-2006	-1.5	-2.8	20.0	9.1	-8.0	-20.3	19.5	-1.7
Ave change 2001-2006 ^b	0.1	-1.8	-9.1	0.6	-0.3	0.4	-2.3	-0.3
Passengers								
2006	195	137	71	113	108	17	25	334
2005	179	166	74	109	94	19	49	347
% change 2005-2006	8.9	-17.5	-4.1	3.7	14.9	-10.5	-49.0	-3.7
Ave change 2001-2006 ^b	-5.1	-4.7	-2.2	-3.6	-4.9	-6.8	-12.3	-4.8
Pedestrians								
2006	150	77	30	25	89	20	62	227
2005	145	80	20	39	81	18	66	225
% change 2005-2006	3.4	-3.8	50.0	-35.9	9.9	11.1	-6.1	0.9
Ave change 2001-2006 ^b	-5.5	-2.2	-6.5	-5.1	-5.5	-6.6	-1.4	-4.4
Motorcyclists^c								
2006	226	12	4	70	154	8	2	238
2005	225	9	3	66	150	9	6	234
% change 2005-2006	0.4	33.3	33.3	6.1	2.7	-11.1	-66.7	1.7
Ave change 2001-2006 ^b	1.8	5.7	-6.2	4.6	0.5	16.9	3.6	1.9
Cyclists								
2006	36	4	7	4	21	4	4	40
2005	32	9	8	3	21	3	6	41
All road users^d								
2006	1,195	403	118	439	750	108	185	1,601
2005	1,182	443	110	426	761	123	204	1,627
% change 2005-2006	1.1	-9.0	7.3	3.1	-1.4	-12.2	-9.3	-1.6
Ave change 2001-2006 ^b	-1.3	-2.8	-4.1	-0.6	-1.3	-1.3	-3.9	-1.7

a Includes road users of unstated gender or age.

b Average annual percentage change based on the exponential trend for the last five 12-month periods.

c Includes pillion passengers.

d Includes deaths of unstated road user group.

(Source: <http://www.infrastructure.gov.au>)

Table 4 Share of deaths by age for each road user and gender group – Australia 2001 and 2006

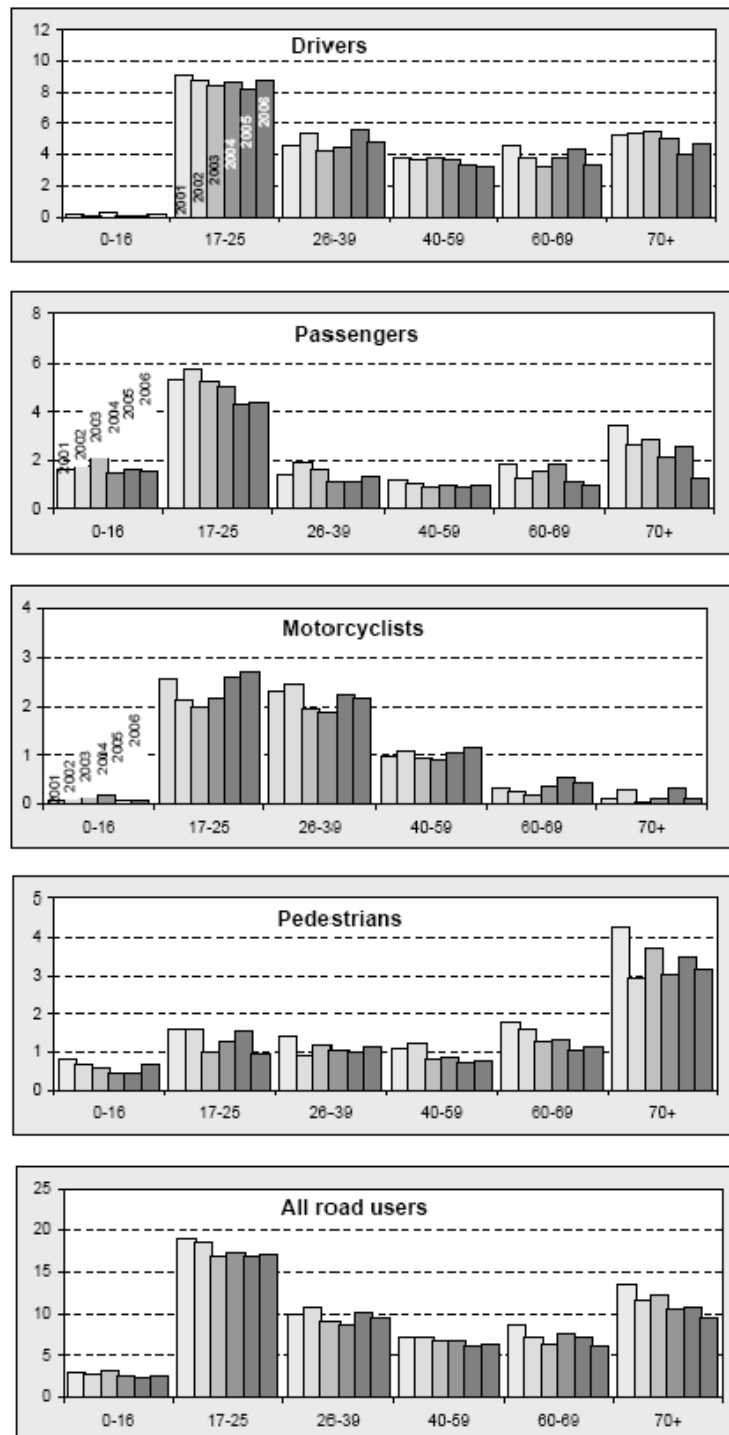
		0-4	5-16	17-25	26-39	40-59	60-69	70+	All
		years	years	years	years	years	years	years	deaths
DRIVERS									
Males	2006 (%)	0.0	0.5	30.2	27.9	21.8	7.5	12.1	100.0
	2001 (%)	0.0	1.2	31.1	24.3	22.6	8.7	12.2	100.0
Females	2006 (%)	0.0	0.6	28.9	18.5	31.2	8.7	12.1	100.0
	2001 (%)	0.0	1.6	18.2	25.1	34.2	9.6	11.2	100.0
Persons	2006 (%)	0.0	0.5	29.9	25.8	23.9	7.8	12.1	100.0
	2001 (%)	0.0	1.3	28.0	24.5	25.4	8.9	12.0	100.0
PASSENGERS									
Males	2006 (%)	4.6	15.4	41.0	20.0	13.3	2.1	3.6	100.0
	2001 (%)	6.2	12.4	37.3	19.6	8.9	4.4	11.1	100.0
Females	2006 (%)	5.1	16.8	24.1	11.7	19.7	9.5	13.1	100.0
	2001 (%)	5.5	11.0	23.2	7.7	22.7	9.9	19.9	100.0
Persons	2006 (%)	5.4	15.9	33.8	16.5	15.9	5.1	7.5	100.0
	2001 (%)	6.1	11.8	31.0	14.3	15.0	6.9	15.0	100.0
PEDESTRIANS									
Males	2006 (%)	4.0	4.0	12.8	24.2	20.1	8.1	26.8	100.0
	2001 (%)	2.5	10.4	16.4	20.4	20.4	9.0	20.9	100.0
Females	2006 (%)	5.2	18.2	7.8	13.0	16.9	10.4	28.6	100.0
	2001 (%)	2.2	9.0	5.6	18.0	18.0	10.1	37.1	100.0
Persons	2006 (%)	4.4	8.8	11.1	20.4	19.0	8.8	27.4	100.0
	2001 (%)	2.4	10.0	13.1	19.7	19.7	9.3	25.9	100.0
MOTORCYCLISTS ^a									
Males	2006 (%)	0.0	1.8	29.6	38.5	26.1	3.1	0.9	100.0
	2001 (%)	0.0	1.9	29.0	43.3	22.4	2.4	1.0	100.0
Females	2006 (%)	0.0	0.0	25.0	16.7	50.0	8.3	0.0	100.0
	2001 (%)	0.0	0.0	0.0	50.0	50.0	0.0	0.0	100.0
Persons	2006 (%)	0.0	1.7	29.4	37.4	27.3	3.4	0.8	100.0
	2001 (%)	0.0	1.9	28.2	43.5	23.1	2.3	0.9	100.0
CYCLISTS									
Persons	2006 (%)	5.0	12.5	10.0	12.5	40.0	10.0	10.0	100.0
	2001 (%)	0.0	26.1	17.4	21.7	19.6	4.3	10.9	100.0
ALL ROAD USERS ^b									
Males	2006 (%)	1.4	4.0	29.1	27.7	21.5	6.0	10.4	100.0
	2001 (%)	1.5	5.7	29.1	25.9	19.5	6.8	11.5	100.0
Females	2006 (%)	2.7	9.4	22.8	15.1	25.6	9.2	15.1	100.0
	2001 (%)	2.5	6.8	17.4	17.4	27.0	9.6	19.3	100.0
Persons	2006 (%)	1.9	5.4	27.5	24.5	22.5	6.8	11.6	100.0
	2001 (%)	1.8	6.0	25.9	23.6	21.5	7.5	13.6	100.0

a. Includes pillion passengers.

b. Includes deaths of unstated road user group.

The following graphic shows how older road users are over-represented in fatality statistics as “passengers” or “pedestrians” as opposed to “driver”:

Deaths per 100,000 population, selected road user categories – Australia 2001 to 2006



The Australian population is ageing whilst Australian road deaths are declining



Source: *Road Deaths Australia Monthly Bulletin* June 2008 (Australian Government: Department of Infrastructure, Transport, Regional Development and Local Government)

Facts about older drivers

FACT One of the most prolific ideas about older drivers is that ageing is associated with inevitable functional declines that make older drivers high-risk. This is a myth which has underpinned the calls for all kinds of mandatory testing of older drivers. Although some abilities may decline with age, the rate of the decline and change varies greatly. This is the reason maintaining a driver's licence should be based on ability, not age.

Whilst research shows that older drivers may experience difficulty with key driving tasks as a result of physical or mental skills, studies also show that older people are often aware of difficulties and alter their driving to accommodate for the problem. Most older drivers will self-regulate and avoid driving at night, or on unfamiliar roads, or in peak hour traffic, or in bad weather.

It is important to understand the physical and mental changes that occur for some older drivers and how the effects of aging may increase their risk on the road. These changes are known to alter their ability to perform tasks like driving but the extent to which they do so is not directly predictable from laboratory findings. There is little evidence to date that proves testing will lower crash rates. Researchers and policy makers around the world are attempting to find reliable ways to measure driving ability and rate risks.

FACT OECD research (OECD 2001) has found that mandatory medical assessment of all drivers of a certain age to detect those who are unfit to drive is neither cost-efficient nor beneficial. Moreover, a project where the regular medical testing regime of Finland was introduced in Sweden showed that increased frequency at old age did not reduce accidents within this section of society.

Age determined medical testing resulted in older drivers voluntarily giving up their driving licences, rather than undergoing testing. This carries social costs as it might lead to restricting people's access to the mobility, freedom and independence that driving a vehicle provides for the vast majority of older people. This is particularly important in rural areas where alternative and/or accessible public transport solutions are not always readily available.

FACT Older drivers, especially those over 75, are more likely than younger drivers over 20 to suffer injuries or die when involved in a motor vehicle crash. A contributing factor is the greater fragility that comes with age. Increased fragility associated with age affects the ability to absorb impacts and recover from injury. The most deadly type of crash, side impact, occurs more characteristically with older drivers.

FACT Functional decline related to conditions associated with aging does not affect all drivers at the same rate or in the same way. Although specific abilities needed to drive safely—such as vision, memory, physical strength, reaction time, and flexibility—may decline as we age, the rate of change varies greatly across the older-adult population.

Many older people do not differ significantly in their driving habits from their middle-aged counterparts, who statistically are the safest group on the road. By improving their functioning, by learning new or compensatory strategies, or by using and training on adaptive equipment, many older adults can continue to drive safely. Providing information about alternative ways to get around, communities also can help older adults make smoother transitions from driving full-time to cutting back or stopping driving altogether.

FACT The ability to drive may also affect health status. Preliminary studies in the US of older drivers show there may be a relationship between health, sense of autonomy, and ability to drive. Mobility declines can lead to depression, reduced life satisfaction, isolation and loneliness. Non-drivers are more likely to be institutionalized in long-term care settings than those who drive.

Transportation needs of the elderly

Independence is impossible without accessible, affordable and appropriate transportation.

Mobility and independence are linked. The degree to which older people are reliant on their car will affect their resistance to reducing or ceasing driving. The consequences of not having the freedom to get around in their car are enormous for older people.

When looking at the transportation needs of older people it is important to look further than simply the in-car licensing tests; physical and mental assessments or vision tests. We also need to look at a wide range of alternatives to driving.

Australia has a large geographic land mass with 812,000 kilometres of roads which carries 12.4 million motor vehicles and 370,000 motorcycles.

Motor Vehicle Census 2007

There were 14.8 million motor vehicles, including motor cycles, registered in Australia at 31 March 2007. This represents an increase of 2.9 per cent since the 2006 Motor Vehicle Census (MVC), and an increase of 12.2 per cent since the 2003 MVC, when there were 13.2 million vehicles registered in Australia. The average annual growth over this time was 2.9 per cent.

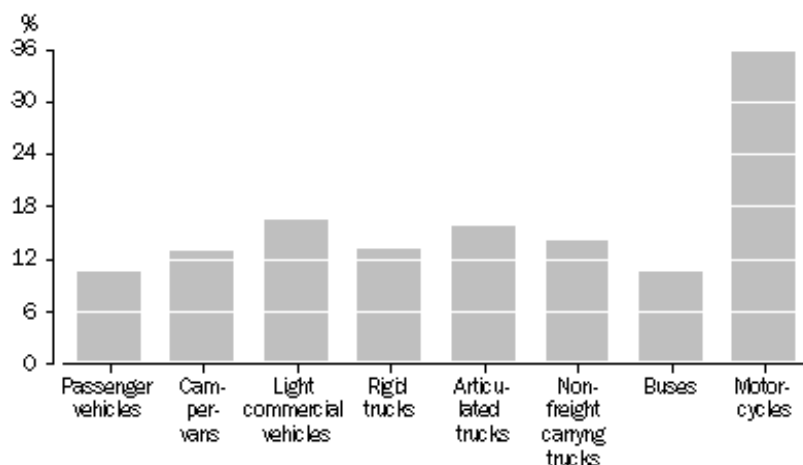
Type of vehicle - Census years 2003, 2006 and 2007

	2003	2006	2007	Change 03/07	Change 06/07	Average annual growth 03/07
	no.	no.	no.	%	%	%
Passenger vehicles	10 365 941	11 188 880	11 462 400	10.6	2.4	2.5
Campervans	38 337	41 520	43 266	12.9	4.2	3.1
Light commercial vehicles	1 879 755	2 114 333	2 189 559	16.5	3.6	3.9
Rigid trucks	348 673	383 546	394 491	13.1	2.9	3.1
Articulated trucks	64 261	71 680	74 444	15.8	3.9	3.7
Non-freight carrying trucks	18 599	20 293	21 247	14.2	4.7	3.4
Buses	70 122	75 375	77 548	10.6	2.9	2.5
Motor cycles	377 271	463 057	511 966	35.7	10.6	7.9
Total motor vehicles	13 162 959	14 358 684	14 774 921	12.2	2.9	2.9

Source: <http://www.abs.gov.au>

The passenger vehicle fleet has grown from 10.4 million in 2003 to 11.5 million in 2007, an increase of 10.6 per cent. Motor cycles (35.7 per cent) and light commercial vehicles (16.5 per cent) were the vehicle types showing the largest growth over this time. Articulated trucks rose by 15.8 per cent, non-freight carrying trucks rose by 14.2 per cent and rigid trucks rose by 13.1 per cent. Passenger vehicles and buses had the smallest growth over the same period, with both increasing by 10.6 per cent.

Type of vehicle, Percent change - Census years 2003 and 2007



States and Territories

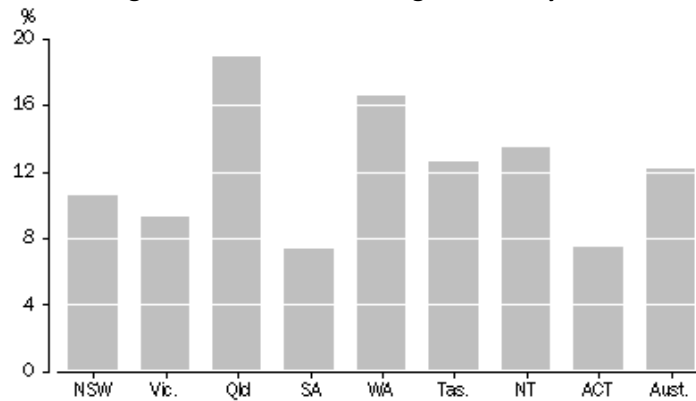
New South Wales had the largest share of the Australian fleet with 4.4 million (29.5 per cent of the total) registered vehicles, followed by Victoria with 3.8 million (25.8 per cent) and Queensland with 3.0 million (20.5 per cent). The Northern Territory had the smallest share with 0.1 million (0.8 per cent) registered vehicles. These shares are comparable with the distribution of the population across states and territories.

Motor vehicle registrations - Census years 2003, 2006 and 2007

	2003	2006	2007	Change 03/07	Change 06/07	Average annual growth 03/07
	no.	no.	no.	%	%	%
New South Wales	3 944 850	4 268 631	4 361 237	10.6	2.2	2.5
Victoria	3 494 314	3 740 726	3 818 062	9.3	2.1	2.2
Queensland	2 552 061	2 897 867	3 033 417	18.9	4.7	4.4
South Australia	1 077 154	1 137 957	1 156 961	7.4	1.7	1.8
Western Australia	1 438 441	1 600 566	1 676 495	16.5	4.7	3.9
Tasmania	338 484	374 846	381 226	12.6	1.7	3.0
Northern Territory	104 259	114 015	118 178	13.4	3.7	3.2
Australian Capital Territory	213 396	224 076	229 345	7.5	2.4	1.8
Australia	13 162 959	14 358 684	14 774 921	12.2	2.9	2.9

From 2003 to 2007, four states experienced growth above the national average of 12.2 per cent. The motor vehicle fleet in Queensland showed the largest growth with an 18.9 per cent increase compared with 2003, an average annual growth of 4.4 per cent. Western Australia, Northern Territory and Tasmania increased 16.5 per cent, 13.4 per cent and 12.6 per cent respectively compared with 2003, at average annual growth rates of 3.9 per cent, 3.2 per cent and 3.0 per cent respectively. South Australia showed the smallest growth in fleet size since 2003 (7.4 per cent), an average annual growth of 1.8 per cent.

Motor vehicle registrations, Percent change - Census years 2003 and 2007

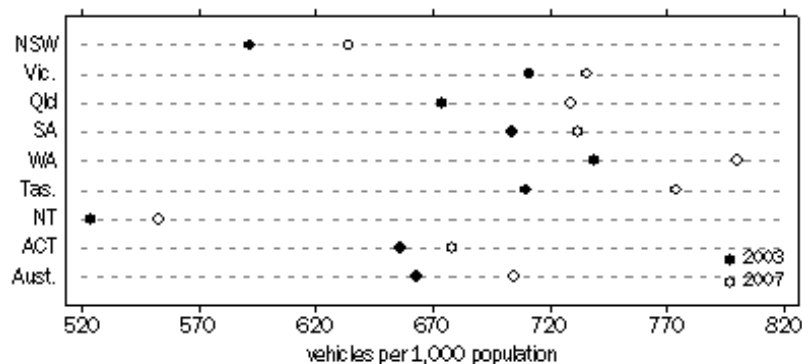


Vehicles and resident population

There were 705 motor vehicles per 1,000 resident population in Australia in 2007. This compares to 663 vehicles per 1,000 residents in 2003, representing an increase of 42 vehicles per 1,000 residents over this time.

Western Australia had the highest rate of all states and territories with 800 vehicles per 1,000 residents in 2007, while the Northern Territory had the lowest rate with 553 vehicles per 1,000 residents.

Motor vehicle fleet by population (a), State/territory of registration



(a) Both Estimated Resident Population data and Motor Vehicle Census data are at 31 March.
Source: ABS Australian Demographic Statistics (cat. no. 3101.0)

The location of where Australians choose to live as they age will be important. Most of Australia's population is concentrated in two widely separated coastal regions - the south-east and east, and the south-west. Of the two regions, the south-east and east is by far the largest in area and population. The population within these regions is concentrated in urban centres, particularly the state and territory capital cities.

Many people as they age are choosing to have a sea change or a tree change. In NSW the coastal towns north of Sydney and Newcastle are beginning to see large growth in older residents as are towns in the Blue Mountains. These towns generally have little or no public transport and unfortunately as people migrate in retirement because they are healthy and active when resettling they often overlook the issue of transport – other than their own car.

The impact of these migrations demand on transport – community transport

Australian use of the private car in the past four decades has been one of massive growth. Families have gone from being a single car per family to two-car families; the ABS figures above show that in the higher-growth states like Western Australia, there are on average 800 vehicles per 1000 residents.

Many older Australians have, for most of their lives, depended on the car for most of their mobility needs. For the emerging group of older drivers - that is, the baby boomers - this will definitely be the case. Driving is an integral part of peoples' lives - it is the key to their independence (shopping, medical appointments, pay bills) and freedom - it enables them to maintain social contacts, participate in community activities. It is a key contributor to peoples' quality of life.

People planning their retirement, sea change or tree change, are generally not taking into account the transport options available in the area. Many people move to an area in their early retirement when they are healthy and driving is their primary transport but as they age they may experience health problems resulting in diminished ability to drive. At this time the impact of ceasing driving and being dependent on alternative transport for access to basic services can be a major problem.

More information (access to shopping, medical services, community transport, taxis) needs to be available for people planning their retirement so they understand the implications of transport on their future.

Giving up driving ... what then

It is a myth that older people can use public transport when they limit or stop driving. For a start in many regional and rural areas and in outer metropolitan suburbs of cities there is no public transport. People living in regional and rural areas may not have a footpath let alone any transport option other than the private car.

Most public transport is unsuitable for older people (stairs at railway stations); not equipped for them (no seats or shelters at bus stops); not responsive to their needs (fixed-route services) and they usually require walking many blocks to get to them (health and frailty problems can prevent walking long distances).

One of the most widely-reported reasons for not using public transport, when it is available, is due to fear of crowds and the heightened risk of a fall. This fear is well founded with older people suffering serious injuries often resulting in permanent disability or death from a fall.

Government policy makers seem to have missed the point that driving a car is the easiest form of travel for older people with diminishing physical skills. An OECD Report noted that ... "Older people who suffer from limitations related to health must cease walking or using public transport before they are forced to cease driving".

"As a public health problem, lack of transport safety affects older road users most when using less protected modes. Older people are not so much risky as at risk in traffic, mainly because of their increasing physical vulnerability. It is important to note that for older road users, driving their own car is one of the safest ways to travel and it is far more risky for them to participate in traffic as unprotected road users."

Liisa Hakamies-Blomqvist, "Ageing Europe: Challenges And Opportunities For Transport Safety".

Infrastructure

Infrastructure has an impact on the lives of older people. Road infrastructure has an impact for drivers, pedestrians and for people using wheelchairs or motorized scooters. Research has shown that modifications to the driving environment such as signage lettering, traffic signals, lighting, reflectivity, can reduce the rate of crashes involving older drivers.

The US Federal Highway Administration has developed a handbook, *Older Driver Highway Design Handbook*, for state officials on road design and management that improves the safety of the driving environment for older persons and all other road users⁸ ensuring the system safety while increasing operational efficiency.

This *Older Driver Highway Design Handbook* provides practitioners with a practical information source that links older road user characteristics to highway design, operational and traffic engineering recommendations by addressing specific roadway features. The lettering, brightness and contrast, size, and location of traffic signs can be changed to improve visibility. And finally, traffic and road design can enhance driver safety by including left-turn lanes, (it would be right hand turns in Australia) protected turn signals, and traffic-calming measures such as speed bumps.

This handbook supplements existing standards and guidelines in the areas of highway geometry, operations, and traffic control devices. The information in this handbook should be of interest to highway designers, traffic engineers, and highway safety specialists involved in the design and operation of highway facilities. In addition, this handbook will be of interest to researchers concerned with issues of older road user safety and mobility.

⁸ FHWA, *Older Driver Highway Design Handbook*, FHWA-RD-97-135 (1998).

The American Automobile Association (AAA) in the US has developed a list of 10 ways to make their roads safer.

AAA's TOP 10 WAYS TO MAKE ROADS SAFER*

The following measures are designed to help make roads safer for all drivers, especially baby boomers and seniors.

1. SIGNS – larger, simpler and better-placed guide and street signs: Use larger lettering (1 inch/33 ft) and retro-reflective materials and place them well in advance of the "event," such as an intersection or exit ramp. Confusing and multiple signs should be eliminated. Signs should be placed higher, overhead and in advance to announce upcoming streets.

2. CROSSWALKS – Crosswalks and pedestrian areas in general can be made safer. Use retro-reflective pavement markings to increase visibility; countdown signals so pedestrian knows the amount of time needed to safely cross; longer walk times for slower-paced pedestrians; larger buttons that are easier to reach; and pedestrian signal plaques, to help pedestrians properly understand signals. Pedestrian refuge islands at large streets also help.

3. LEFT-TURN LANES (in Australia this would be right hand turns) – dedicated protected left-turn lanes and phases when there is a traffic signal, preferably "offset": Left turns at intersections are one of the most dangerous traffic conditions for seniors. Having a signalized intersection with an arrow and a left turn lane, rather than leaving it to the judgment of the driver to determine when there is a sufficient break in traffic, will reduce the number of dangerous "right-angle" collisions.

Offset left-turn lanes also improve safety because cars going in the opposite direction don't block visibility.

4. STOP SIGNS – Some intersections do not require a signal light, but if they have a stop sign, their safety can be improved. Minimum size of stop signs, regardless of the posted speed, should be 30 inches to help deal with the reduced visual acuity among older drivers. Retro-reflectivity of stop signs must be maintained, not only so they can be read, but so they'll be noticed. "STOP AHEAD" signs are useful in situations where drivers appear not be noticing stop signs; in many cases, older drivers are cited for "failure to yield to a traffic control device." Lines or rumble strips across the roadway before a stop sign also can help alert drivers.

5. LIGHTING – better lighting overall: With age, the lens of the eye becomes less clear and the pupil shrinks, causing less light to enter the eye. Eyesight begins to worsen around age 40 and by 60, a driver needs three times more light to see than at 16. For these reasons, better lighting for highways and city streets is needed.

6. PAVEMENT MARKINGS – brighter road markings: Edge and other pavement markings should be retro-reflective so drivers can see curbs, lanes and intersections/crosswalks more easily to avoid hitting curbs or pedestrians and stay within lanes. "Run off the road" crashes also would be reduced.

7. TRAFFIC SIGNALS – larger traffic signal heads: The diameter should be at least 8 inches, but up to 12 inches may be needed in some locations. Providing more contrast, back plates for traffic signals also improve visibility since people's contrast sensitivity decreases with age. "All red" periods for traffic signals allow for a margin of error.

8. FREEWAY EXITS & ENTRANCES – large, advance and clearer signs marking exit and entrance ramps, including "wrong way," would help prevent drivers from making dangerous mistakes such as driving the wrong direction on a highway.

9. WORK ZONES – Work zones are constantly changing environments that challenge all drivers because they don't know what to expect; large, bright, well-maintained and carefully placed work zone devices, such as barrels or cone – including flashing arrow panels for lane closures – should be used to help guide drivers through these difficult situations. Crashes occur at work zones because drivers are unprepared for new situations. Work zones will only become more common with the aging of the transportation infrastructure, and older drivers have more difficulty negotiating these unexpected areas.

10. CHANGEABLE MESSAGE SIGNS – Changeable message signs help drivers understand changing conditions and situations, which affect us more as we age. To be effective, changeable message signs should use short, simple words, easily understood abbreviations and not exceed two "panels." If more information needs to be conveyed than can be displayed on two panels, additional signs should be used.

*The analysis was developed with real-world data from the AAA Michigan Road Improvement Demonstration Project, along with the US Federal Highway Administration guidelines. This list is featured in the July 2003 edition of *Reader's Digest* in an article titled "Safe Car, Safe Driver, Dangerous Roads."

Resources

In NSW there are a limited number of resources that have been developed to assist older drivers and their families understand the issues affecting driving and the mobility alternatives when people can no longer drive.

In the US and Canada there have been successful multidisciplinary collaborations established to identify, analyse and address the health-related safety and quality-of-life issues pertaining to older drivers. Their government's transportation departments have worked with key stakeholders, including Automobile Associations, to conduct research, develop strategic plans and resources.

Automobile Associations in Australia are working together to provide information for older drivers. In many states, including NSW, they run a program for seniors by seniors called *The Years Ahead*.

In 2009 there will be more resources available from motoring clubs for older drivers and their families. The clubs recognize the significant impact on individuals and the community as a result of the aging of the population and they are working together and with other stakeholders to ensure the safety for older drivers. The government and community need and to find ways to help drivers drive safely for as long as possible and to help people stay mobile even when they can no longer drive.

References and articles

Ageing and Transport - Mobility Needs and Safety Issues; OECD Report 2001.

Automobility Among the Elderly: Convergence of Environmental, Safety, Mobility and Land Use Issues; Rosenbloom, S and Stahl, A; 2002

Andrea D, Charlton J, Fildes B, Koppel S, Scully J, Hammer M & Muir C. (2005). Visual search patterns in older and younger drivers. Presentation at 2005 Australasian Road Safety Research, Policing and Education Conference.

Andrea D, Fildes B & Triggs TT. (2001). The Sensitivity and Bias of Older Driver Judgements in an Arrival-Time Task. Presentation at 2001 Road Safety Conference.

Austrroads. (2000). Model Licence Re-Assessment Procedure for Older and Disabled Drivers. Austrroads report AP-R176.

Austrroads. (2004) Model Licence Re-Assessment Procedure For Older Drivers: Stage 2 Research Austrroads Project No. RS.UB.513 Austrroads Publication No. AP-R259/04

Ball K, Owsley C, Stalvey B, Roenker DL, Sloane ME, Graves M. (1998). Driving avoidance and functional impairment in older drivers. *Accident Analysis Prevention* 1998 May; 30(3): 313-22.

Charlton J, Fildes B, Frith B, Langford J, Newstead S, Oxley P, Pronk N. (2002). Evaluation of Screening Tests For Older Drivers. Presentation at 2002 Australasian Road Safety Research, Policing and Education Conference.

Charlton JL, Oxley J, Fildes B, Oxley P, Newstead S. (2003). Self-regulatory behaviours of older drivers. *Annual Procedures - Association Advanced Automotive Medicine* 2003; 47: 181-94.

Edwards JD, Vance DE, Wadley VG, Cissell GM, Roenker DL, Ball KK. (2005). Reliability and validity of useful field of view test scores as administered by personal computer. *Journal Clinical Experience Neuropsychology*. 2005 Jul; 27(5): 529-43.

Fildes B, Corben B, Kent S, Oxley J, Le T & Ryan P. (1994). Older Road User Crashes. Monash University Accident Research Centre - Report #61.

Johansson K, Bronge L, Lundberg C, Persson A, Seideman M, Viitanen M. (1996). Can a physician recognize an older driver with increased crash risk potential? *Journal American Geriatric Society* 1996 Oct; 44(10): 1198-204.

Koppel S & Newstead S. (2004). Effectiveness of mandatory license testing for older drivers in reducing crash risk among urban older Australian drivers. *Traffic Injury Prevention* 2004 Dec; 5(4):326-35.

Langford J, Fitzharris M, Newstead S & Koppel S. (2004). Some consequences of different older driver licensing procedures in Australia. *Accident Analysis Prevention*. 2004 Nov; 36(6):993-1001.

Langford J & Koppel S. (2006). The case for and against mandatory age-based assessment of older drivers. *Transportation Research Part F: Traffic Psychology and Behaviour* Volume 9, Issue 5, September 2006, Pages 353-362.

Langford J, Koppel S, Charlton JL, Fildes B & Newstead S. (2006). A Re-Assessment of Older Drivers As A Road Safety Risk. *IATSS Research*, 30(1), 27-37.

Langford J, Methorst R & Hakaimas-Blomqvist L. (2006). Older Drivers Do Not Have A High Crash Risk – A Replication of Low Mileage Bias. *Accident Analysis Prevention*, 38, 574-578.

Langford J, Fitzharris M, Koppel S, Newstead S. (2004). Effectiveness of mandatory license testing for older drivers in reducing crash risk among urban older Australian drivers. *Traffic Inj Prev*. 2004 Dec; 5(4):326-35.

Langford J, Fitzharris M, Newstead S, Koppel S. (2004). Some consequences of different older driver licensing procedures in Australia. *Accident Analysis Prevention*. 2004 Nov; 36(6):993-1001.

Lough and DS, Sea bury SA & Samaras L. (2007)/ Regulating Older Drivers – Are New Policies Needed? RAND Institute for Civil Justice Report.

Matthew RJ, Baldock JL, Mathias AJ, McLean AB. (2005). Self-regulation of driving and older drivers' functional abilities. Presentation at 2005 Australasian Road Safety Research, Policing and Education Conference.

New South Wale Department of Planning State and Regional Population Projections, 2006-2036, 2008 Release.

OECD. 2001. Ageing and Transport – Mobility Needs and Safety Issues. OECD Report.

Owsley C, McGwin G Jr, Phillips JM, McNeal SF, Stalvey BT. (2004). Impact of an educational program on the safety of high-risk, visually impaired, older drivers. *American Journal Preventive Medicine*. 2004 Apr;26(3):222-9.

Owsley C, McGwin G Jr & Ball K. (1998). Vision impairment, eye disease, and injurious motor vehicle crashes in the elderly. *Ophthalmic Epidemiology* 1998 Jun; 5(2): 101-13.

Owsley C, Stalvey BT & Phillips JM. (2003). The efficacy of an educational intervention in promoting self-regulation among high-risk older drivers. *Accident Analysis Prevention* 2003 May; 35(3): 393-400.

Owsley C, Stalvey B, Wells J & Sloane ME. (1999). Older drivers and cataract: driving habits and crash risk. *Journal Gerontology A Biol Sci Med Sci*. 1999 Apr; 54(4): M203-11.

Oxley J, Corben B, Fildes B & O'Hare M. (2004). Older vulnerable road users - measures to reduce crash and injury risk. Monash University Accident Research Centre - Report No. 218.

Perel M. (1998). Helping Older Drivers Benefit From In-Vehicle Technologies. NHTSA Paper number 98S2011.

Perryman KM & Fitten LJ. (1996). Effects of normal aging on the performance of motor-vehicle operational skills. *Journal Geriatric Psychiatry Neurology*. 1996 Jul; 9(3): 136-41.

Roads and Traffic Authority of NSW. (2007). Licensing of Older Drivers - Discussion Paper.

Stalvey BT & Owsley C. (2003). The development and efficacy of a theory-based educational curriculum to promote self-regulation among high-risk older drivers. *Health Promotion Practice*. 2003 Apr;4(2):109-19.

Underwood G, Phelps N, Wright C, van Loon E & Galpin A. (2005). Eye fixation scanpaths of younger and older drivers in a hazard perception task. *Ophthalmic and Physiological Optics* 25 (4), 346–356.

Watson B, Carberry & Wood J. (2004). Eye Disease and Compensatory Driving Behaviour. Presentation at 2004 Australasian Road Safety Research, Policing and Education Conference.

Wood JM & Mallon K. (2001). Comparison of driving performance of young and old drivers (with and without visual impairment) measured during in-traffic conditions. *Optom Vis Sci*. 2001 May; 78(5): 343-9.

Wood JM & Owens DA. (2005). Standard measures of visual acuity do not predict drivers' recognition performance under day or night conditions. *Optom Vis Sci*. 2005 Aug; 82(8): 698-705.

Wood JM. (2002). Aging, driving and vision. *Clin Exp Optom*. 2002 Jul; 85(4): 214-20.