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**Australian Transport Safety Bureau**

# **Older Road Users: From Driving Cessation to Safe Transportation**

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Older road users: from driving cessation to safe transportation

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### Abstract

**Background:** Driving is a valued life role. Because of age-related changes, older people (that is, those aged 65 years and older) may need to retire from driving. Driving cessation can be a major life transition involving grief and loss, difficulty accessing alternative transport, reduced participation in life roles and poorer health outcomes.

**Methods:** This study was conducted in two phases. In the exploratory phase, 234 people aged 65 years and older were interviewed about their transport use and lifestyle. Quantitative and qualitative methodologies were used to compare current drivers, retired drivers and people who had never driven, on transport and lifestyle outcomes. In the development phase, resources were developed from the findings of the previous phase and reference groups and piloting were used in their preliminary evaluation.

**Results:** Current drivers do not plan well for driving cessation. Most rely primarily on self-driving as a means of transport and few express specific plans for retirement from driving. Driving cessation can lead to lifestyle losses, with retired drivers having lower life satisfaction, reduced role engagement, and restricted activity patterns. Safety and lifestyle issues surrounding transport use and alternatives to driving were explored. Resources aiming to promote smooth transition from driving cessation to safe transportation were developed including an awareness-raising talk and brochure for current drivers, a group program and handbook for retiring drivers and a website for health professionals and family members. Reference group participants expressed high levels of satisfaction with the resources.

**Conclusions:** A range of resources is needed to improve awareness of and planning for driving cessation, to provide intensive support and education during the transition, and to enable maintenance of safety and lifestyle following retirement from driving. Recommendations are made for further resource development, review of current transport availability, and enhancing older road user safety.

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### Keywords

Older people; driving; cessation; transport safety

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### Note

The views expressed are those of the author(s) and do not necessarily represent those of the Australian Government.

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## EXECUTIVE SUMMARY

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With ageing of the population and the increased lifetime habitual use of private vehicles, issues for older road users have become a research priority (Organisation for Economic Cooperation and Development, 2001). Driving is a complex and important part of everyday life for many people, including those who are older. Due to the changes associated with ageing, older road users encounter various negative outcomes including an increased risk of fatal road injuries. Older drivers are often encouraged to give up driving to decrease this risk. However, driving cessation itself has many health and social implications.

Earlier research by the authors indicated that driving cessation appears to occur in stages, each of which has specific challenges and needs. Suggestions for a staged approach to resources to assist with the driving cessation process were made and the need for further investigation into the process and outcomes of driving cessation was identified.

The current study used two phases, incorporating qualitative and quantitative methods, to investigate the process and outcomes of driving cessation and to develop resources that aimed to assist in the transition from driving cessation to safe transportation. The resources were evaluated using reference groups of health professionals and older people and pilot implementation. The study took place in 2003 and 2004 in metropolitan areas of Queensland.

### 1.1 Aims of the study

The study aimed to:

- Investigate the current transport use of community-dwelling older people.
- Explore the attitudes of community-dwelling older people to alternative modes of transport.
- Examine the impact of driving cessation on lifestyle and well being.
- Determine the future transport plans of older people.
- Compare older drivers' expectations regarding driving cessation with the experiences of retired drivers.
- Explore the preferences of older current and retired drivers for support and resources related to driving cessation.
- Develop resources to support the transition from current to retired driver.
- Conduct a preliminary evaluation of the acceptability and effectiveness of the resources for older people.

### 1.2 Methods

This study had an initial exploratory phase followed by a development phase. The exploratory phase incorporated semi-structured interviews comprising open questions and published measures of lifestyle outcomes. Measures included time use assessment, a role checklist, and a life satisfaction questionnaire. Current drivers, retired drivers and people who had never driven participated in interviews and outcomes were compared statistically between the groups. Responses to open questions were analysed using qualitative template analysis techniques. Following the development of resources based on findings from an earlier study, the exploratory phase and the research

literature, preliminary evaluation of the resources was undertaken. Reference groups were used to survey the views of older people, family members of older people and health professionals who either read and reviewed the resources or participated in a preliminary implementation of the resources. Feedback was obtained using a questionnaire based on Likert scales and open questions.

## **1.3 Results**

For the exploratory phase 234 participants were involved. Qualitative and quantitative responses were used to answer research questions. Differences in age, gender distribution, and health and functional status between the three groups (current drivers, retired drivers and never driven) were statistically controlled in the analyses.

### **1.3.1 Transport use**

Current drivers rely heavily on self-driving to the exclusion of almost all other transport options with more than 90% of drivers reporting driving as their means of transportation for both necessary and discretionary travel. Non-drivers (both retired drivers and people who have never driven) left the house less often for discretionary outings (eg social or leisure), and report using a range of transport options. Non-drivers reported relying mainly on walking, private transport (lifts from family and friends) and taxis. Few current drivers and non-drivers reported using public transport options of any kind in the past week.

### **1.3.2 Attitudes towards alternatives to driving**

Reasons for use or non-use of transport options differed between the groups. Current drivers were significantly more likely to report convenience as a consideration in determining whether or not to use an option. Non-drivers were significantly more likely to report difficulties with physical access and concerns about social issues (wanting to maintain independence).

### **1.3.3 Impact of driving cessation**

The three groups were compared on lifestyle outcomes, while adjusting for age, gender, health and functional ability. Retired drivers had significantly lower life satisfaction ( $p = 0.01$ ), fewer present life roles ( $p < 0.0001$ ) and were less likely to participate in volunteer ( $p = 0.005$ ) and family member roles ( $p = 0.009$ ) than current drivers. In terms of time use, retired drivers spent less time in social leisure ( $p = 0.002$ ) and away from home ( $p = 0.0001$ ) and more time in solitary leisure ( $p = 0.0001$ ).

A weak relationship was also found between driving status (current or retired driver) and number of very valuable roles ( $p = 0.015$ ), and participation in a carer role ( $p = 0.05$ ) and organisations ( $p = 0.022$ ). Retired drivers had fewer very valuable roles and were less likely to be a carer or participant in an organisation.

Analyses of differences between lifestyle outcomes for retired drivers and those who had never driven indicated one area of significant difference. Retired drivers spent significantly less time than the never driven group in volunteer work ( $p = 0.009$ ).

### **1.3.4 Future plans**

More than half (58%) of the current drivers did not expect there to be changes to their transportation in the future. An additional 40% expected that changes may occur in the distant future and had no

specific plans regarding future changes. Fewer retired drivers and people who had never driven expected changes to their transportation.

### **1.3.5 Expectations and experiences of driving cessation**

Participants described driving as having different meanings. Some described driving as essential and as having strong personal and emotional meaning. Others regarded driving as a convenience and of practical use only. The majority (82%) of current drivers anticipated that if they had to cease driving they would experience lifestyle changes. Generally these changes were described as strongly negative. The majority (91%) of retired drivers reported a change in lifestyle as a result of driving cessation. They were more likely to report positive or neutral changes compared to current drivers, but the majority of changes experienced by retired drivers were also generally negative.

### **1.3.6 Resource preferences**

Participants supported a range of face-to-face and written resources designed to assist with driving cessation. In keeping with the findings of an earlier study, they supported both resources containing general, brief information targeted at current drivers and intensive specific information and support aimed at retiring and retired drivers. Participants suggested that resources would need to contain locally relevant information; alternative transport options; strategies for coping with loss and change; and opportunities for asking questions, discussion and sharing support. In addition, face-to-face resources would need to be accessible and involve the input of both peers and ‘experts’.

## **1.4 Development phase – interventions to support the transition from driving cessation to safe transportation**

Findings from the earlier study and the exploratory phase of this study were used along with relevant literature in areas including occupational therapy, health education, gerontology, psychology, and life transition to develop resources for the different stages of driving cessation.

Predecision: current drivers	Awareness raising brochure
	Awareness raising talk
Decision: retiring drivers	Group program
	Retired drivers handbook (including modules on driving safety, driving assessments, rights and responsibilities, planning for change, alternative transport)
Post-cessation: retired drivers	Group program
	Retired drivers handbook (including modules on alternative transport, strategies for coping with loss and change, pedestrian safety, lifestyle planning)
Ongoing support throughout phases: health professionals and family members	Website



#### **1.4.1 Are the resources acceptable and effective for older people?**

Reference groups involving older people and family members indicated a high level of satisfaction with the content and presentation of the resources. Some feedback was given suggesting minor modification to content or pictures, and these resulted in amendments being made to the resources. Longer term testing of outcomes for older people would be needed to establish the effectiveness of the resources.

#### **1.4.2 Are the resources for key support people acceptable and effective?**

Reference groups with health professionals indicated a high level of satisfaction with the resources. Some concerns were raised about making all of the resources publicly available without the support of additional training for health professionals in the issues surrounding driving cessation. It was recommended that more general information could be provided on the website and in written resources, with people being directed to seek support from health professionals, who could in turn be supported by training.

### **1.5 Implications and Recommendations**

Five main areas for future attention were identified. A range of strategies were identified to achieve each recommendation.

**Recommendation 1:** Increase use of alternative transport for older drivers and nondrivers.

Current drivers tend not to use any other means of transport besides driving. As a result, they do not have the skills and habits to enable easy use of alternatives when they are no longer comfortable with, or need to retire from, driving. In addition, the expectations of current drivers regarding driving cessation suggest that attitudes towards alternative transport are important and current views may not be based in recent experience. Non-drivers also report relatively low use of a range of transport options and this appears to lead to poorer lifestyle outcomes. There appear to be barriers to the use of alternatives including physical access, perceptions of inconvenience and possibly a lack of experience. As the current transport systems are not based around the needs of older people, increased attention to their needs as a consumer group is required. Approaches to increase the use of alternative transport would need to involve the improvement of the transport options available and awareness raising, information and practical education to assist older people to try alternatives.

- Increase the awareness of alternative options to driving.
- Address the perceived barriers to alternative transport use for older people.
- Provide education and support programs to assist older people to learn to use transport alternatives.

**Recommendation 2:** Improve planning for driving cessation

Retirement from driving appears to be a major life transition that is largely unexpected and unplanned. To maintain the lifestyle of older people when they cease driving, and to make it a more accepted life change, long term planning is needed. Awareness of driving cessation issues in the general population, and for older drivers in particular, is required. Future strategies need to focus on promoting the possibility of positive outcomes from driving cessation, providing acceptable transport alternatives and encouraging discussion and strategies to achieve better outcomes.

- Improve the media representation of retired drivers.
- Provide attractive and acceptable transport alternatives to driving.

- Increase awareness of driving cessation issues and successful transition strategies through education campaigns, awareness raising talks and written materials.
- Encourage planning for driving cessation by providing awareness raising talks that discuss planning strategies and transport alternatives.
- Link transport planning with other planning and health care initiatives (eg. link transport planning with retirement planning).
- Provide education and training to health professionals to enable them to assist people with transport planning for the future.

### Recommendation 3: Improve the safety of older road users

Attention to the safety of older road users has tended to begin and end with the concern about the involvement of older drivers in accidents. Awareness about, and strategies to improve, the safety of older people using alternative transport and walking are required. Specifically, education about pedestrian safety and improving the local environments of older people to enable safe walking and alternative transport use is required.

- Focus some education and awareness campaigns around the risks for other road users besides drivers.
- Provide information and practical exercises to help older people enhance their safety with alternative transport.
- Improve the local environment for pedestrian safety.

### Recommendation 4: Improve acceptability of driving cessation by improving outcomes for retired drivers and increasing awareness of driving cessation

Many older people view driving cessation as an unacceptable option. This may be due to two main factors: the current poor outcomes for retired drivers and the lack of long term preparedness for driving cessation. Improving outcomes for retired drivers and encouraging better general awareness, as well as long term planning may improve the acceptability of driving cessation.

- Provide interventions for older people who are engaged in driving cessation and may be at risk of poor outcomes (eg. group program to assist older people to adjust to driving cessation). These interventions should be provided by a health professional with training to assist with transitions and coping with loss and change.
- Provide resources for health professionals and older people themselves to assist in the driving cessation transition (eg. Retired Drivers' Handbook, website).
- Evaluate the short and long-term effectiveness of these resources.
- Improve transport accessibility as per recommendation 1.
- Improve planning as per recommendation 2.

### Recommendation 5: Further develop a range of resources

Older people, family members and health professionals expressed high levels of satisfaction with the content and presentation of the resources developed in this study. Further development and evaluation are needed to determine the short and long-term effectiveness of these resources. Support is needed for publication, dissemination and training of health professionals.

- Evaluate the effectiveness of the resources for various populations (eg. metropolitan, rural).

- Publish and disseminate the resources for general use.
- Provide training for health professional to enable the intensive group program to be run in a number of different settings.



## **2.1 Background**

Driving is an instrumental activity of daily living (IADL) that facilitates the performance of other life roles (Burns, 1999; Fricke & Unsworth, 2001). Driving is regarded as a necessity by many people in developed countries and is strongly associated with wellbeing, mobility and autonomy (Burns, 1999; O'Neill, Bruce, Kirby, & Lawlor, 2000). It has been rated as the second most important IADL by older community-dwelling people, after telephone use (Fricke & Unsworth, 2001).

### **2.1.1 Driving in Later Life**

Older road users are of interest internationally and locally because of their increasing numbers (Organisation for Economic Cooperation and Development, 2001) and relative risk of serious or fatal injury on the road (Bedard, Stones, Guyatt, & Hirdes, 2001). Changes associated with normal ageing, the presence of medical conditions and the use of medications can affect older drivers' safety, confidence and comfort (Lyman, McGwin, & Sims, 2001). The accident rate for older drivers per distance driven is higher than any other age group, including young male drivers (Elliott, Elliott, & Lysaght, 1995). Accident statistics have been a focus of many awareness campaigns (Australian Transport Council, 2001b; Cobb & Coughlin, 1998; Federal Office of Road Safety, 1996).

### **2.1.2 The Impact of Driving Cessation**

Older drivers are reluctant to plan for driving cessation. Driving has become ingrained in contemporary lifestyles, with the current cohort of older people driving further distances than any previous generation (Skinner, 2000). The organisation of communities and the tendency for older people to live in rural or suburban areas rather than city centres add to the trend for older people to continue driving for longer (Organisation for Economic Cooperation and Development, 2001). A valid driver's licence can take on a symbolic meaning of "proof" of independence, freedom and individuality, and can be used as a way to distance oneself from the stereotype of old age (Eisenhandler, 1990). Public transportation is often viewed as stigmatised, unacceptable, and inconvenient (Hakamies-Blomqvist & Wahlstrom, 1998; Lister, 1999; Peel, Westmoreland, & Steinberg, 2002). As older people rely on private transportation for more than 80% of trips and over 90% for those in rural areas, cessation of driving can disrupt life roles and independence (Glasgow & Blakely, 2000).

Because of these factors, driving cessation can be an emotive issue, with family members and health professionals often reluctant to broach the subject with older drivers. As a result, driving cessation can be unplanned and therefore associated with serious consequences such as depression, reduced out-of-home activities, isolation and in turn, poorer quality of life (Marottoli et al., 2000; Marottoli et al., 1997). Driving cessation and subsequent limited community mobility can lead to loss of other life roles and impact on feelings of self efficacy, self esteem and life satisfaction (Bahro, Silber, Box, & Sunderland, 1995) which can in turn influence health and health behaviours (Goeppinger & Lorig, 1996).

### **2.1.3 Supporting Older People**

While driving can have risks and health implications for older people, so too can driving cessation. If older drivers are provided with timely, targeted and appropriate information and

interventions, they may be encouraged to “self-screen” their driving behaviour (Hakamies-Blomqvist & Wahlstrom, 1998). This involves older drivers monitoring their own driving ability and health more closely, voluntarily ceasing driving at an appropriate time, and moving to the use of alternative transport options. With an enabling approach, drivers are given options, encouraged to seek help when they need it, and are supported in their decision making, rather than simply being told not to drive or left to continue driving at a high risk to themselves and others (O'Neill, 2000). The opportunity to exercise choice in a transition leads to a better ability to cope with the change and to move on from it (Blair, 2000).

A previous qualitative study by the investigators into the experience of driving cessation from the perspective of retired drivers, family members and health professionals indicated that although driving cessation has the potential to cause major disruption to the lives of retiring drivers and their family members, strategies to facilitate safe adjustment could assist in the process (Liddle, Carlson & McKenna, 2003).

#### **2.1.4 Earlier Findings**

An earlier phase of this project involved an in-depth qualitative study to investigate the process of driving cessation for older people and the implications of driving cessation on their health and quality of life. The study investigated the perspectives of key stakeholders and involved 18 participants, including 9 retired drivers, 3 family members and 6 service providers (health professionals).

The study concluded that although driving cessation is a highly individual experience, a matrix could be devised that captured the general stages of driving cessation that older people experience. Four stages were identified: driving in the past, the predecision stage, the decision stage and the post-cessation stage.

##### **2.1.4.1 Stages and challenges of driving cessation**

The *driving in the past* stage included the time up until difficulties with driving started. *Driving in the past* was portrayed as a highly valued part of life associated with many important milestones and life roles, such as getting a licence, and the use of the car for work, family and leisure related trips. Feelings associated with driving throughout this stage included independence, pride and freedom. Many participants reported that the driving role was not one that they had thought they would cease at any stage. “*I thought I’d go on forever*”(retired driver). Experiences retold in this stage were generally positive and challenges reported by participants tended to focus on the various life areas that relied on driving. “*I used to do 50 000 (miles) a year on very bad roads as well or on roads with 12 lanes. Yes, so you develop driving skills*” (retired driver).

The *predecision* stage was characterised by an increased difficulty with driving, in the presence of no plan to cease driving. This may occur due to the natural changes associated with the ageing process or with the onset of injury or illness. Retired drivers in this stage were focussed on protecting and maintaining the driving role. The major challenge of the predecision stage appeared to be a *balancing act*. Retired drivers seemed to be balancing obstacles to driving, against the need and desire for independence. Obstacles, which the driver may or may not have been aware of in the predecision stage, included disabling health conditions, financial constraints and legal responsibilities associated with driving. The balancing act was also influenced by concurrent losses and changes including retirement, relocation, deterioration in health, and financial changes. These may have influenced both their need and ability to drive.

*Awareness* was the second challenge in the predecision stage, with awareness of driving abilities, emotional responses to driving, and consequences of both continuation of driving or cessation of driving needed prior to the decision stage. Family members and health professionals often reported earlier conscious awareness of the difficulties compared to the retired drivers. “*I think she basically*

would have been pretty unaware that people were concerned about her” (family member). At this stage some participants reported continuing to drive despite feeling uncomfortable and concerned about their own and others’ safety, as they did not perceive they had other options. *“all of the pleasure had gone, and all there was, was a worry” (retired driver)*

The *decision* stage was characterised by either a voluntary or involuntary decision to cease driving. For some participants this was a gradual and careful process of weighing up the options. For others it was a short enforced consideration following a sometimes traumatic trigger such as onset of an illness or involvement in an accident. As the retired drivers did not have a long-term plan to cease driving, making the decision was noted to be a difficult process. *“I think it’s a big decision but to me it hasn’t been light work” (retired driver)*. Either way it seemed important that the decision to give up driving was considered a personal one. *“I’m the type of person that doesn’t like to be told to do anything you know, like particularly stop driving.” (retired driver)*. The decision stage tended to involve others, to a varying extent, to assist in informing the decision.

During the *decision* stage, participants had the dual challenges of both *making the decision* and *owning the decision*. Retired drivers had varying amounts of control over making the decision, with some participants reporting careful consideration of all the issues over a period of years *“weigh up the pros and cons” (retired driver)*, and others deciding immediately due to a sudden change in circumstances *“People who are suddenly stopping are often quite desperate about things and ... can be quite emotional about it” (health professional)*. Retired drivers then needed to be able to feel ownership of the decision and appeared to undergo a process of cognitively reframing their view of the situation *“it was my decision, I mean... I could persuade myself that I can drive” (retired driver)*.

The *post-cessation* stage was characterised by a gradual cognitive and lifestyle restructuring after actually ceasing driving. Retired drivers needed to be able to make both practical and emotional adjustments to lifestyle. Practical adjustments involved finding new ways of accessing the community or substituting different interests that did not require travel *“you have to work at it like a lot of other things” (retired driver)*. Emotional adjustments involved coming to terms with the losses that driving cessation represented and maintaining feelings of control and ownership over the lifestyle. *“I’ve made that decision so I’ll live with it, no matter what and I don’t look back with regrets because I think that’s ridiculous” (retired driver)*.

#### **2.1.4.2 Outcomes of driving cessation**

Participants reported a series of losses following driving cessation. The loss of driving, the licence and the cars was mourned directly by some retired drivers *“I’ve always considered the car as an extension of myself, and suddenly I was going to be without it, like losing a limb” (retired driver)*. Others reported losses of social networks, access to the community and roles *“We’re confined in our house” (retired driver)*. Participants also reported losses for others, with other household members and neighbours losing access to transport and carers having an additional burden of having to provide transport.

Retired drivers also reported positive changes associated with driving cessation. These included financial benefits *“financially I’ll probably be ahead at the end of the year...No maintenance, no petrol, no licence, no insurance” (retired driver)*, more time with family and friends *“I probably see more of my daughter” (retired driver)*, and physical fitness *“I’m walking more and I’m certainly fitter” (retired driver)*. Some retired drivers also reported feeling less stressed *“Just the relief from the stress” (retired driver)* and having fewer burdens with being able to relinquish driving responsibilities.

#### **2.1.4.3 Recommendations for resources**

Rather than a single resource or program, it was recommended that a range of resources should be developed, aimed at the stages of driving cessation that have been described.

In the driving in the past and predecision stages, an awareness raising approach was considered appropriate. These resources would help to improve long-term planning and awareness that driving cessation may one day be an issue, so that slow adaptation to thinking and daily routines could be made. The resources would need to acknowledge the current goals of the drivers (ie. to protect and maintain the role) and therefore incorporate information on safe driving. All of the resources would need to be sensitively delivered, and may incorporate involvement of peers and role models rather than 'expert' voices.

During the decision stage, retiring drivers need to access information to assist in informed decision making whilst maintaining their feelings of control. Preferences for talking with peers about solutions could be met by using a group format. Resources would need to be able to cater for the individuality of the experience.

In the post-cessation stage, continued access to detailed information would be needed to help with adjusting routines and thinking about driving cessation. Both information sharing and practical exercises could assist in the maintenance of activities and community engagement. In addition, resources would need to support the other key people involved in the process (family members and health professionals) who may also be seeking information and support.

It was recommended that the outcomes, expectations and experiences of driving cessation be further investigated in a quantitative phase using current drivers, retired drivers and older people who have never driven.

## **2.2 This Study - Aim**

This study firstly aimed to understand the transport and lifestyle issues and needs of older people. The exploratory phase involved a structured interview and the administration of questionnaires to a sample of older people to examine their:

- current transport use,
- attitudes and perception of barriers to the use of alternative transport options,
- plans for future transportation,
- perspectives on driving cessation, and
- lifestyle issues (including time use, life roles, life satisfaction, health-related quality of life, self-esteem and self efficacy).

Secondly, this study aimed to develop interventions and resources that would enable older people to consider and plan for driving cessation in a timely manner to facilitate their smooth transition from driver to non-driver whilst maintaining their quality of life. Interventions and resources were developed on the basis of information obtained in the earlier study as well as the exploratory phase of this study and the literature. They were tailored to people at different stages in the decision-making process.

### **2.2.1 Research Questions Addressed in the Exploratory Phase**

This phase built on the results of the earlier study. In particular, it addressed the following research questions:

1. What is the current transport use of community-dwelling older people?
2. What are the attitudes of community-dwelling older people to alternative transport modes?



3. What is the impact of driving cessation on the lifestyle and wellbeing of community-dwelling older people?
4. What are the future transport plans of older current drivers, retired drivers and those who have never driven?
5. What are the expectations of current drivers about driving cessation? How do these compare with the experiences of retired drivers?
6. What are the preferences of current and retired drivers for support and resources related to driving cessation?

#### **2.2.2 Research Questions Addressed in the Objectives of Development Phase**

1. Which interventions would best support the planning and smooth transition of older drivers to retired drivers?
2. Is a stage-related program to assist older people in the predecision, decision and post-cessation phases of driving cessation effective and acceptable to older people and health professionals?
3. Are resources to assist family members and health professionals to support older people in their decision to cease driving acceptable and effective?

### **3.1 Methodology**

The exploratory phase involved the use of a structured interview and self-administered questionnaires with 234 older people (current drivers, retired drivers, older people who had never driven). The investigators initially piloted this data collection process on five older people, and minor changes to wording of the transport and demographic questionnaires were made as a result.

#### **3.1.1 Design**

This phase used a cross sectional survey design, involving face-to-face interviews with older people living in the community. The data collection process included both quantitative and qualitative methodologies. The quantitative methodology is described in this section and was used to answer the following research questions:

1. What is the current transport use of community-dwelling older people?
2. What are the attitudes of community-dwelling older people to alternative transport modes?
3. What is the impact of driving cessation on the lifestyle and wellbeing of community-dwelling older people?

The qualitative methodology is described in the next section and was used to answer the following research questions:

4. What are the future transport plans of older current drivers, retired drivers and those who have never driven?
5. What are the expectations of current drivers about driving cessation? How do these compare with the experiences of retired drivers?
6. What are the preferences of current and retired drivers for support and resources related to driving cessation?

Participants were interviewed using a schedule of open questions and established measures.

#### **3.1.2 Participants**

Older people who were current drivers, retired drivers or who had never driven were recruited. This enabled a comparison to be made between the transport use, lifestyle and wellbeing of current drivers and retired drivers. It also enabled these outcomes to be compared between those who had encountered a life transition (i.e. retired drivers) and those who had not (i.e. never driven) to determine the impact of the transition and access to transport options separately.

Recruitment involved volunteer, convenience and snowball sampling. Participants were recruited after responding to advertisements in senior magazines, university publications, radio advertising and flyers distributed in community organisations and retirement villages, and after referral by participants already involved in the study. Purposive sampling was used near the end of the study to recruit more retired drivers as a greater proportion of current drivers had volunteered for the study. In terms of sample size, power calculations were conducted based on means and standard deviations from another study investigating driving cessation issues (Marottoli et al., 1997). Based on a meaningful difference in depression scores set at two points (out of a possible eight) and an alpha level of 0.05, it was estimated that 58 participants were needed for each group to achieve a power level of 0.8.

To be included, participants had to be aged 65 years or older, be living in the community, have sufficient English language skills to participate in an interview, and have no cognitive impairments that would interfere with their ability to consent to participate in the study or complete the interview process. Participants were required to score 70% or higher on the Short Portable Mental Status Questionnaire (SPMSQ) (Pfeiffer, 1975) to participate in this study.

### **3.1.3 Procedure**

This study received ethical clearance from the Behavioural and Social Sciences Ethical Review Committee at the University of Queensland. Once participants indicated their interest in the study and met the inclusion criteria, both verbal and written information about the study was provided. Informed written consent to participate was obtained from all participants.

The interview, including both open questions and questionnaires, was conducted in participants' homes or at another venue of their choice. The researchers, research assistants and final year occupational therapy students conducted the interviews. Interviewers underwent training to ensure uniform delivery and coding of the interviews.

### **3.1.4 Measures**

The interview schedule included both standardised and non-standardised questionnaires, as well as open questions (see Appendix 1). Specifically, the schedule included:

- Demographic and transport use questionnaire
- Open questions on the meaning of driving and the impact of driving cessation
- Open questions concerning potential resource development
- Short Portable Mental Status Questionnaire (SPMSQ) (Pfeiffer, 1975) as a screening tool for cognitive impairment
- Physical Self Maintenance Scale (PSMS) and Instrumental Activities of Daily Living Scale (IADLS) (Lawton & Brody, 1969)
- Activity configuration (Mosey, 1973)
- Role Checklist (Oakley, Kielhofner, Barres, & Klinger Reichler, 1986)
- SF-36 Australian New Zealand Version (Stewart, Hays, & Ware, 1988)
- Life Satisfaction Index – Z (Wood, Wylie, & Sheafor, 1969)
- Schedule of Recent Events (Holmes & Rahe, 1967)
- Rosenberg Self Esteem Questionnaire (Rosenberg, 1965)
- Center for Epidemiological Studies-Depression Scale (CES-D) (Radloff, 1977)

**SPMSQ (Short Portable Mental Status Questionnaire):** This instrument provides a brief screen of current mental state, specifically focused on orientation and memory. It does not require the assessor to have verifying information in order to score the screen and is able to be used by a range of health workers (Gruber, Varner, Chen, & Lesser, 1997). It is scored out of 10, with three or more errors indicating the presence of cognitive impairment (Chodosh, Reuben, Albert, & Seeman, 2002). Missing data or 'don't know' responses are scored as incorrect. It has been widely used clinically and in research projects with older people as an effective screen (Marottoli et al., 2000). It has established reliability and validity and has been found to be equivalent or superior to other established methods of determining the presence of cognitive impairment (Fillenbaum, 1980; Fillenbaum, Landerman, & Simonsick, 1998; Gruber et al., 1997).

**PSMS (Physical Self Maintenance Scale) and IADLS (Instrumental Activities of Daily Living Scale):** The PSMS and IADLS were developed for use with older people and have been widely used both clinically and in research (Barberger-Gateau et al., 1992). They are scored by health professionals following discussion with and or formal assessment of the older person, according to independence and dependence in activities of daily living and instrumental activities of daily living. The PSMS is scored out of six and contains items on grooming, eating, dressing, bathing and other self care issues. The IADLS is scored out of eight with items on transportation, budgeting, meal preparation, medication management and other home and community based issues. A higher score on both indicates independence in functional abilities. This scale has been found to have good interrater reliability between health professionals (Hokoishi et al., 2001), and validity was determined during development by correlation with existing functional measures (Lawton & Brody, 1969).

**Activity Configuration:** This instrument is a weekly timetable, where activities performed during the last week are recorded. During a semistructured interview, participants are asked to recall activities from the past week in 30-minute intervals. They are also asked about the location of the activity, presence of other people, and subjective classification of the activity (i.e. was gardening viewed as a leisure activity or as a home maintenance chore). Participants are able to use diaries and calendars to assist in recall. This tool has been used successfully in clinical settings by occupational therapists and in other time use studies (Yerxa & Locker, 1990). Data from the activity configuration were coded into categories of time use based on previous time studies and developed inductively from the data (Lamport, Coffey, & Hersch, 2001; Sonn, Tornquist, & Svensson, 1999). Hours per week spent in the different categories, hours per week spent with other people and alone, hours per week spent out of the home, episodes per week out of the home, and episodes per week utilising various methods of transport were recorded.

**Role Checklist:** The Role Checklist is a tool that measures the number and type of current roles in which people engage as well as value of these roles. It also indicates the number and type of roles in which the person has participated during the past and plans to undertake in the future. It includes 11 roles: student, worker, volunteer, caregiver, home maintainer, friend, family member, religious participant, hobbyist, participant in organisations, and other. Participants rate the value of each current role as not at all valuable, somewhat valuable or very valuable. This instrument is the most widely accepted role assessment used by clinical occupational therapists (Vause-Earland, 1991). It has also been used successfully in research with older people (Hillman & Chapparo, 1995). It is simple to understand, brief to administer, and has individual relevance with the inclusion of the "other" category (Oakley et al., 1986). The content validity of the Role Checklist was supported by a survey of relevant clinicians and test-retest reliability ranged between 86-89% agreement for part one (past present and future participation in roles) and 74-79% agreement for part two (value of current roles) of the checklist (Oakley et al., 1986).

**SF-36 (Short Form - 36) – Australian New Zealand version:** This instrument is widely used in measuring health-related quality of life. It has well-established psychometric properties including acceptable internal consistency, confirmation of subscales by factor analysis, and content and criteria validity (Bowling, 1997; Kliempt, Ruta, & McMurdo, 2000). It has been used successfully in studies involving older people (Kington, Reuben, Rogowski, & Lillard, 1994; Kliempt et al., 2000). It gives results for eight subscales (physical functioning, social functioning,

role limitations due to emotional issues, role limitations due to physical issues, mental health, vitality, pain and general health perception). These are given as standardised scores ranging from 0 (worst possible health status) to 100 (optimal health status). Results can also be reported as two component scores, physical component score (PCS) and mental component score (MCS), which are calculated using Australian normative data (Australian Bureau of Statistics, 1997) and transformed to have a mean score of 50, and a standard deviation of 10, with higher scores indicating better health status (Australian Bureau of Statistics, 1997; Mishra & Schofield, 1998).

**Life Satisfaction Index Z:** The LSIZ is a life satisfaction scale that has been developed from a widely used existing scale (Life Satisfaction Index A) for use with older people (Bowling, 1997). It measures overall satisfaction with life, is brief and easy to understand, and has been widely adopted in gerontological research (Bennett, 1996; Hilleras, Jorm, Herlitz, & Winblad, 1999). Appropriate correlations have been found with measures of health, psychological symptomatology, and morale. Internal consistency has also been determined (Bowling, 1997; Wood et al., 1969). Participants respond to a statement by agreeing, disagreeing or expressing ambivalence. A total score out of 26 is gained with a higher score indicating higher satisfaction with life.

**Rosenberg Self Esteem Questionnaire:** This is a brief questionnaire measuring global self esteem. It was developed utilizing Guttman scaling, and has demonstrated convergent validity and reliability (Bowling, 1997; Rosenberg, 1965; Wylie, 1974). Although it was developed initially for use with adolescents, it has been used with older people (Fry, 2001) (Hannah, Domino, Figueredo, & Hendrickson, 1996; Krause & Shaw, 2000). Participants respond to 10 statements on a four-point scale. A total score out of 30 is obtained, with a higher score indicating higher self-esteem.

**Schedule of Recent Events:** This questionnaire gives a weighted list of life events. Participants are asked to indicate which events they have experienced in the last 12 months. There are some concerns about items on this list as they were initially generated and weighted by studies involving college students and tend to have a focus on events generally occurring early in life (eg marriage, having children). The instrument has also been criticised for oversimplifying the issues relating to life events (Scully, Tosi, & Banning, 2000). This tool continues to be used in research on older people (eg (Wilcox & King, 2004)), often with adaptation by removing irrelevant items (eg pregnancy) (Mensh, 1983). To enhance the relevance of the tool in this study, these items were removed, and participants were asked to add any event they considered to be significant to them, and indicate its relative weighting. As this tool was being used to compare groups on the potential level of stress from life events, it was regarded as suitable, rather than some of the newer approaches to life events research which involve ranking potential responses to each event (Hardy, Concato, & Gill, 2004). A higher score on this questionnaire indicates a higher potential stress level from recent life events (Holmes & Rahe, 1967).

**CES-D (Center for Epidemiological Studies-Depression Scale):** This tool is a brief measure of depressive symptomatology experienced over the past week. It was developed from previously validated questionnaires and clinical and factor analysis studies. The 10 item version used in this study has established validity for use as a screen for clinical depression for older people (Irwin, Artin, & Oxman, 1999). Although there are some concerns about bias in responses related to physical health problems (Grayson, Mackinnon, Jorm, Creasey, & Broe, 2000), it has been widely used and is correlated with other depression scales (Bowling, 1995). It has been used extensively in research with older people (Glass, Kasl, & Berkman, 1997; Haynie, Berg, Johansson, Gatz, & Zarit, 2001) and particularly in studies relating to driving cessation (Fonda, Wallace, & Herzog, 2001; Marottoli et al., 1997). The questionnaire has a list of depressive symptoms and participants are required to indicate how often these have occurred in the past week. A higher score indicates the presence of more depressive symptoms.

**Driving cessation stages:** As discussed in the literature review, earlier research by the authors indicated that there were stages of driving cessation. These are: *driving in the past*, *predecision*, *decision*, *post-cessation*. Each participant's stage of driving cessation was noted based on whether they had considered or were currently involved in the process of driving cessation, or if they had ceased driving.

### **3.1.5 Data Analysis**

Closed interview questions and questionnaires were analysed quantitatively using the Statistical Package for the Social Sciences (SPSS). For each group of participants, descriptive statistics (means, standard deviations, frequencies and ranges) were obtained for demographic characteristics, transport use, attitudes towards transport use and lifestyle and wellbeing outcome measures.

To address research questions 1 and 2, chi-square analyses and logistic regressions were undertaken. The independent variables were participant driving status and the potentially confounding sociodemographic variables. The dependent variables were frequency of use of transport modes and attitudes towards transport use. To address research questions 3 and 4, multiple regression models (SPSS GLM procedure) and logistic regression analyses were used. As this study involved multiple statistical analyses, the alpha level was adjusted to 0.01 to reduce the likelihood of type I errors (Portney & Watkins, 2000).

Analysis of data from the qualitative component is described in the next section.

## **3.2 Results**

### **3.2.1 Sample Characteristics**

Two hundred and forty-three older people volunteered to be interviewed for this study. Nine were excluded, five as a result of scoring seven or less on the SPMSQ, and four because they did not complete the interview process. Participants were recruited from Brisbane (69.2%) and regional areas around Queensland (30.8%). Most lived with a partner (51.3%), 40.6% lived alone, and the remainder lived with family members (5.6%) or in some form of supported accommodation (2.6%).

There was ambiguity in terms of the group to which participants belonged. Because of this, participants were not assigned to groups during recruitment, but rather after the interviews had been completed. Data from 234 people were analysed. Of these 137 (58.5%) were current drivers, 56 (24%) were recently retired drivers and 41 people (17.5%) had never driven or ceased driving more than 10 years previously.

### **3.2.2 Group allocation**

In grouping participants for data analysis, current drivers needed to have driven within the last 2 months and have access to a car. There were a number of participants who described themselves as retired drivers but had ceased driving many years previously. As a transition process was being investigated, the time since driving cessation was potentially an important factor influencing lifestyle outcomes. The transition literature indicated that although adjustment processes are highly individual, grief processes and formation of new habits tend to take place over a number of years. A 10-year period was allowed, that is, retired drivers needed to have ceased driving within the last 10 years. They may have current licences and cars, but not have driven for 2 months and consider themselves to be a retired driver. 'Never driven' therefore became a category for those who had not driven for more than 10 years or who had never driven.

### **3.2.3 Group Characteristics**

The three groups were compared on sociodemographic variables using chi-square analyses and ANOVA (see Table 1). Current drivers were significantly younger and were more likely to be independent in activities of daily living (ADL - basic self care abilities e.g. eating, walking, bathing) than retired drivers. They had significantly fewer health conditions, were significantly more independent in instrumental activities of daily living (IADL – higher level self maintenance abilities

e.g. meal preparation, community mobility, budgeting) and were more likely to be living with someone compared to both retired drivers and never driven groups. Current and retired drivers were significantly more likely to be male compared to the never driven group. There were no significant differences between the three groups in terms of years of education and recent life event scores and numbers. The variables that were significantly different between the groups were included in further analyses to adjust for the impact of between group differences.

**Table 1: Description of Groups**

Variable	Current Drivers	Retired drivers	Never driven	Between groups
Mean age (years)	73.2 <sup>a</sup> (Range: 65- 88; SD: 6.1)	78.7 <sup>b</sup> (Range: 65-94; SD: 6.7)	76.0 <sup>ab</sup> (Range: 65-88; SD: 6.1)	$F(2) = 15.7$ $p < 0.001^*$
Years of education: No. (%) with $\geq 11$ years	98 (71.5%) <sup>c</sup>	33 (58.9%) <sup>c</sup>	25 (62.5%) <sup>c</sup>	$\chi^2(2) = 3.29$ $p = 0.193$
Health conditions: No. (%) with $\geq 2$	66 (48.2%) <sup>d</sup>	40 (71.4%) <sup>e</sup>	24 (58.5%) <sup>e</sup>	$\chi^2(2) = 8.88$ $p = 0.01^*$
ADL status: No. (%) completely independent	121 (88.3%) <sup>e</sup>	27 (48.2%) <sup>f</sup>	30 (73.2%) <sup>ef</sup>	$\chi^2(2) = 35.35$ $p < 0.001^*$
IADL status: No. (%) completely independent	131 (95.6%) <sup>g</sup>	30 (53.6%) <sup>h</sup>	32 (78.0%) <sup>h</sup>	$\chi^2(2) = 49.31$ $p < 0.001^*$
Recent life events: Mean number	3.5 <sup>i</sup> (range: 1-15; SD: 2.3)	4.2 <sup>i</sup> (range: 0-16; SD: 3.1)	3.7 <sup>i</sup> (range: 0-10; SD: 2.4)	$F(2) = 1.5$ $p = 0.2$
Recent life events: Mean score	90.1 <sup>j</sup> (range: 11-526; SD: 78.1)	115.3 <sup>j</sup> (range: 0-540; SD: 104.0)	99.8 <sup>j</sup> (range: 0-313; SD: 72.1)	$F(2) = 1.8$ $p = 0.2$
Gender: No. (%) female	69 (50.4%) <sup>k</sup>	33 (59.0%) <sup>k</sup>	37 (90.2%) <sup>l</sup>	$\chi^2(2) = 20.8$ $p < 0.001^*$
Living situation: No. (%) living alone	43 (31.4%) <sup>m</sup>	32 (57.1%) <sup>n</sup>	22 (53.7%) <sup>n</sup>	$\chi^2(2) = 13.9$ $p = 0.001^*$

*Means having the same superscript letter are not statistically significantly different \*  $p \leq 0.01$*

### 3.3 Transport Issues

#### 3.3.1 Research Question 1

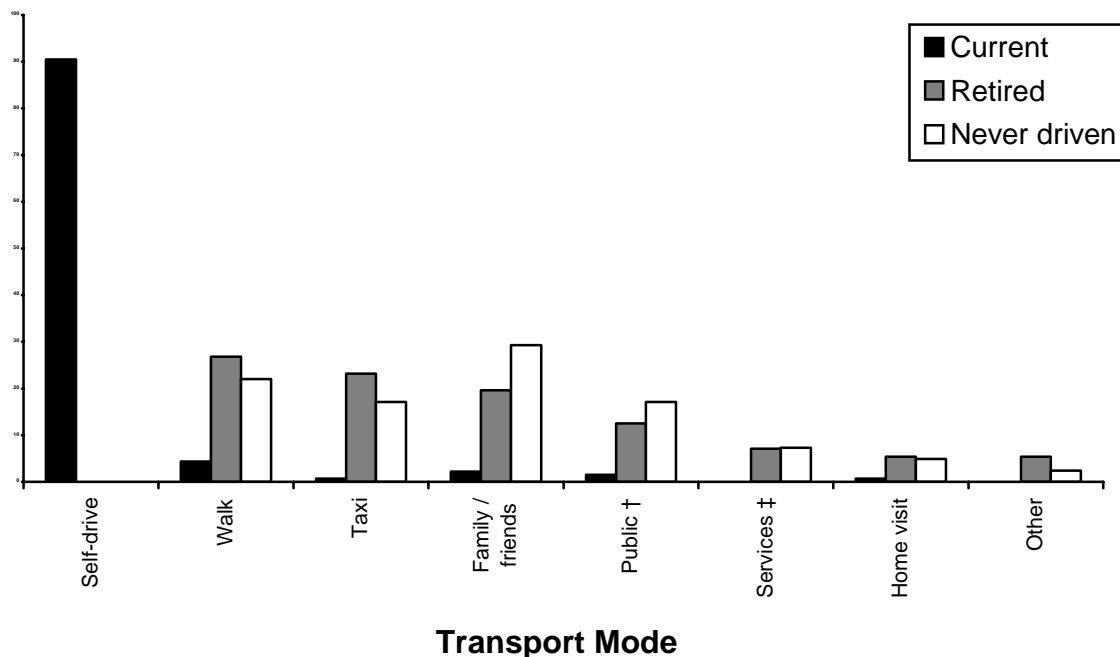
##### What is the current transport use of community-dwelling older people?

Frequency of use of various transport modes for nondiscretionary travel (doctor, shopping) and discretionary travel (social and leisure activities) for the three groups was compared descriptively.

##### 3.3.1.1 Non-Discretionary Travel

The majority of participants reported making regular trips to the doctor (99.6%) and to do grocery shopping (95.3%). There was a weak relationship between driving status and frequency of these trips after adjustments for sociodemographic variables ( $p = 0.038$ ). The frequencies of use of various transport modes for trips to the doctor by the three groups are presented in Figure 1. The retired drivers and participants who had never driven used similar transport modes. Most current drivers (90.5%) drove themselves to the doctor and rarely used alternative modes of transport. Similar results were found for transport modes used for shopping trips.

**Figure 1: Non-discretionary Travel (Doctor)**



† - Public Transport: mode of transport such as buses and trains that are available to the general public and run by state or local government.  
‡ - Transport service: specialised service for people with disabilities, usually run through health and disability organizations, and with specific criteria for access.

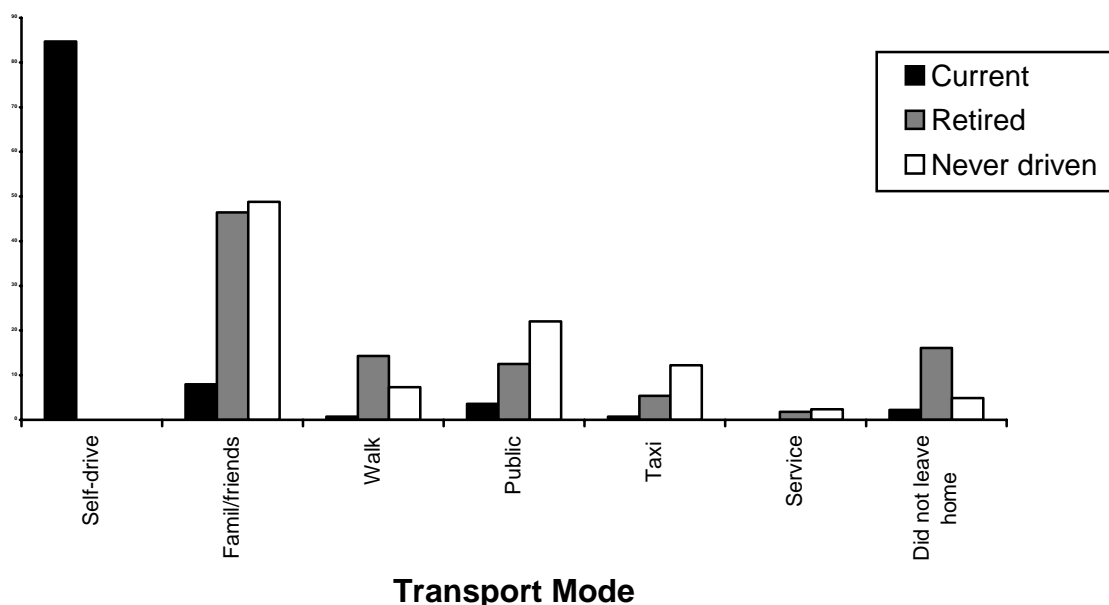
##### 3.3.1.2 Discretionary Travel

Most participants (95.3%) reported leaving the home for social and leisure activities on a regular basis. Figure 2 shows the frequencies for each group. A larger percentage (81%) of current drivers, compared to 48.2% of retired drivers and 48.8% of those who had never driven left the home for



leisure activities at least once a week ( $p < 0.01$ ). While 16% of retired drivers did not leave the home for leisure activities, almost half relied on family and friends for transport to social and leisure activities. Those who had never driven had similar transport use although only 5% reported not leaving the home for leisure activities. The majority of current drivers drove themselves to these activities. Only 2% reported that they did not leave home for leisure activities.

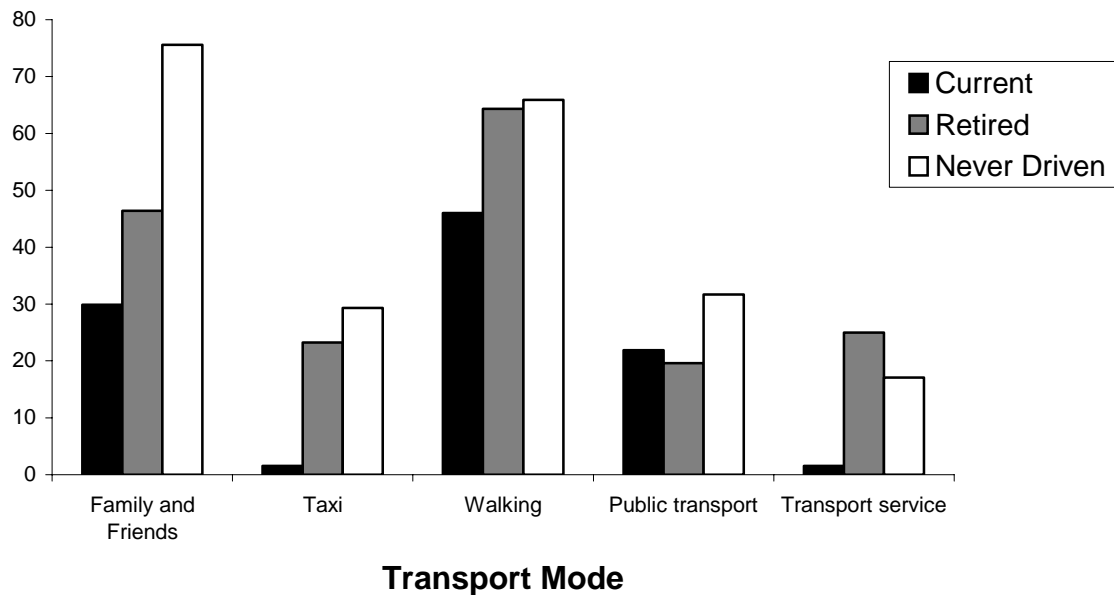
**Figure 2: Discretionary Travel (Social/Leisure)**



### 3.3.1.3 Alternative Transport Used in the Last Week

Participants reported regularly using a range of transport modes (see Figure 3). Participants were asked about the modes of transport they had used in the previous week and the general frequency of use of alternatives to driving. The most commonly reported modes were private transport, taxis, buses and walking. These will be considered further in addressing the second research question.

**Figure 3: Alternative Transport Use in Past Week**



Significantly fewer current drivers used family/friends, taxis, walking and services (such as courtesy buses and volunteer drivers) for travel compared to the retired drivers and participants who had never driven. Some sociodemographic factors were significantly related to use of these transport modes. Public transport was more likely to be used by younger participants who were functionally independent. Having no other driver in the household was related to more private transport and taxi use. Older people with more health conditions were more likely to use transport services.

### 3.3.2 Research Question 2

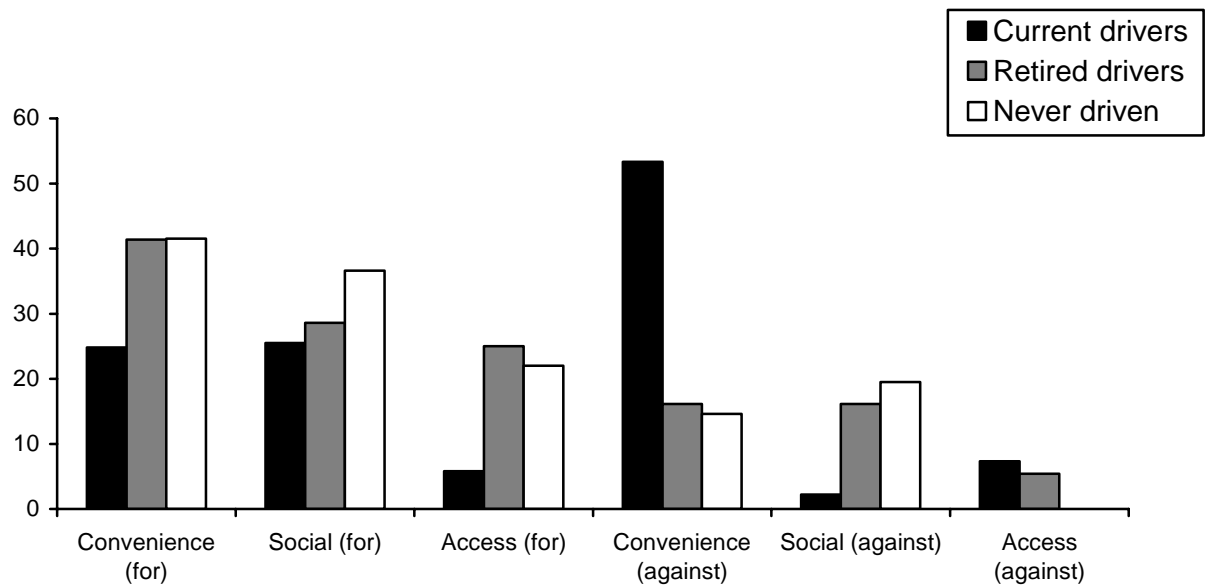
#### **What are the attitudes of community-dwelling older people to alternative transport modes?**

For each of the transport modes of catching lifts with family and friends, using taxis, and catching public transport, participants were asked why they did or did not use these modes. As use of transport services is regulated by eligibility criteria and was reportedly used by only a few participants, attitudes about transport services were not measured. Attitudes towards walking as a transport option were also not measured, as walking had not been anticipated as a major mode of transport during the study design. Responses were categorised into access, convenience, financial reasons, safety, social/independence, eligibility, awareness of service, and organisational issues. Multiple responses were allowed.

#### 3.3.2.1 Attitudes to Use of Private Transport (Family/Friends)

The most commonly reported reasons for using or not using family and friends for travel were convenience (69%), social reasons (38%) and physical access (19%), with all other categories reported by less than 10% of the sample. Only these three reasons are presented in Figure 4.

**Figure 4: Reasons for and against use of family and friends' transport**

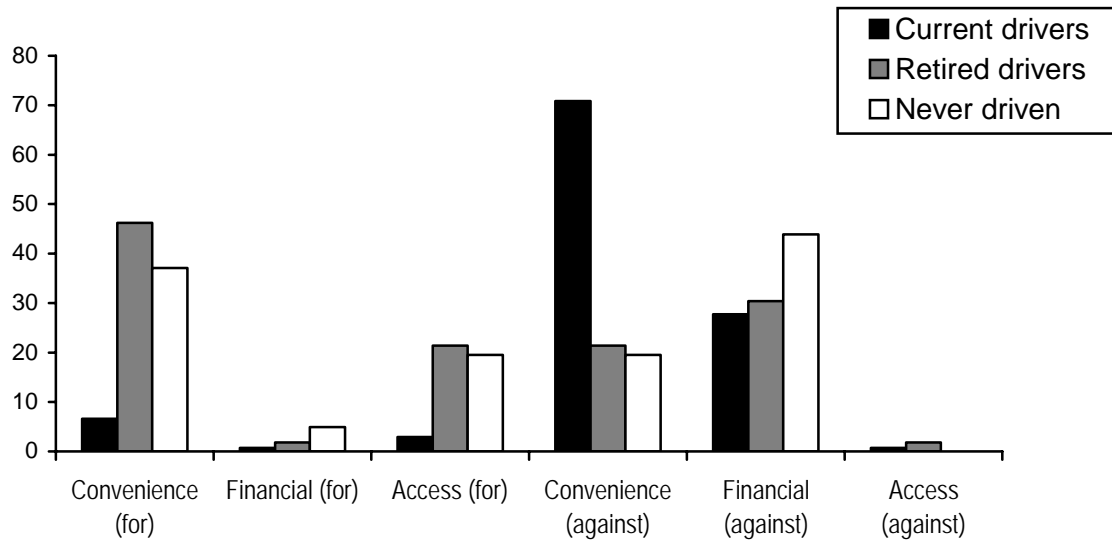


There were no significant differences between retired drivers and participants who had never driven on any of their reasons for using and not using family and friends' transport. Current drivers however differed from these two groups on all reasons. This group was more likely to believe that family and friends' transport is inconvenient, difficult to access (eg. because of distance from family members) and a threat to their independence. They were also less likely to see it as an opportunity for interaction with family and friends.

### 3.3.2.2 Attitudes to Use of Taxis

The majority (78%) of participants reported they had a good taxi service available to them (74% of current drivers, 80% of retired drivers, and 88% of those who had never driven). The most commonly reported reasons for using and not using taxis were convenience (71%), financial reasons (33%) and physical access (11%) (see Figure 5).

**Figure 5: Reasons for and against use of taxis**

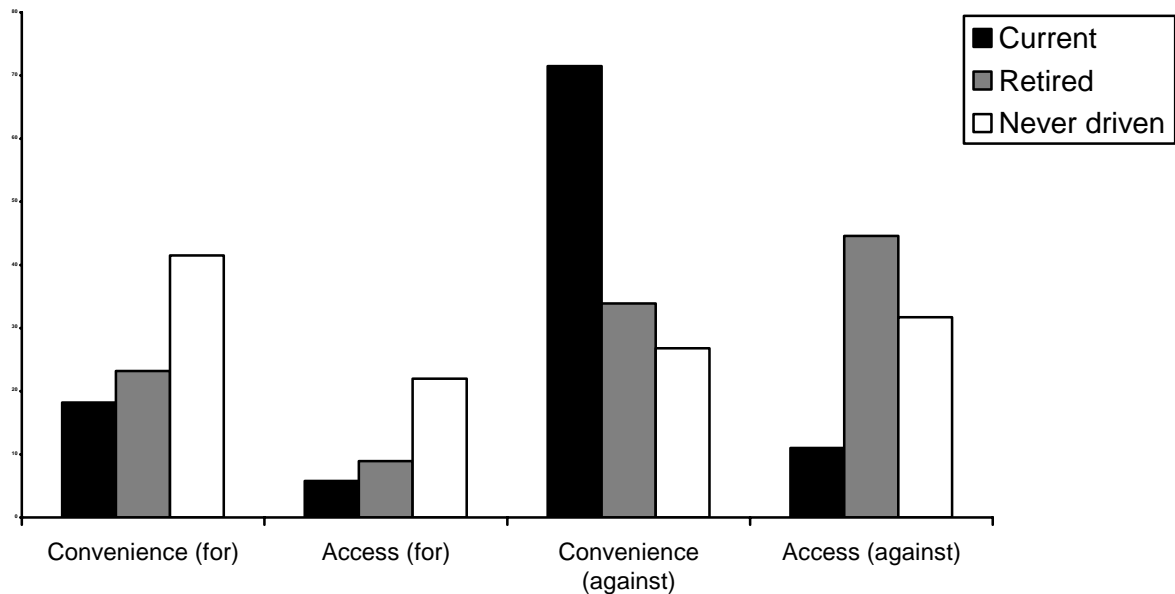


Once again retired drivers and participants who had never driven did not differ on any of their reasons for using and not using taxis. Current drivers differed from these two groups on reasons related to convenience and access; current drivers were more likely to view taxis as relatively inconvenient compared to driving and did not appear to consider access issues as conducive or problematic to their use. Non drivers (retired drives and never driven) reported that taxis were convenient and accessible.

### **3.3.2.3 Attitudes to Use of Pubic Transport**

The case of public buses was considered because this was the most frequently used public transport mode. Just over half (57%) of all participants reported they had a good bus service available in their local area (57% of current drivers, 50% of retired drivers, and 66% of those who have never driven). The most common reasons for using and not using buses were convenience (78%) and physical access (32%) (see Figure 6).

**Figure 6: Reasons for and against use of buses**



Current drivers were more likely than the other two groups to believe buses were inconvenient. Participants in the retired and never driven groups were more likely to identify access as an issue for not using buses. This was mostly related to the distance that the bus stop was from their homes and embarking and disembarking buses.

**Key Points:**

- Retired older drivers and older people who have never driven use a variety of transport modes for all travel.
- Current drivers primarily drive themselves for all travel.
- Retired drivers are the group most likely not to leave the home for discretionary activities.
- Retired drivers and current drivers had a similar low use of public transport.
- Current drivers were more likely to view all alternative transport modes as inconvenient.
- Retired drivers were more likely to report difficulty with accessing buses.
- Catching lifts with family and friends and walking were the most common mode of transport for both retired and non-drivers.

## 3.4 Transition and Lifestyle Issues

### 3.4.1 Current drivers

The majority of current drivers (95%) described being in the predecision stage of driving cessation, having no plans to cease driving. A small group (4%) reported intending to cease driving in the next 6 months and were therefore in the decision stage. One current driver who was on a compulsory break from driving following surgery could not clearly be allocated to a stage. The majority (73%) reported that they drove daily, while 23% drove several times a week. A minority of current drivers (4%) reported driving less often than weekly. Most (58%) had one or more additional current drivers in the household.

The number of years that they had driven ranged from 19 to 70 years, with a mean of 49 years. The trip of furthest distance driven by current drivers in the past three months ranged from 2 to 1800 kilometres with an average of 160.5 kilometres. The median furthest trip distance was 73 kilometres. The trip of furthest distance *travelled* by current drivers, using all modes of travel including air travel, in the previous 3 months ranged from 2 to 16700 kilometres, with an average of 519.8 km. The high values were mainly attributable to overseas travel by a number of participants. The median value for furthest trip travelled was 131 kilometres.

### 3.4.2 Retired Drivers

The majority of retired drivers were in the post-cessation stage of driving cessation; 80% had ceased driving for 6 months or more and 18% had ceased for less than 6 months. Over half of the retired drivers (56%) reported ceasing driving for health reasons, 16% reported discomfort in driving as their primary reason, 13% reported 'other' reasons for driving cessation (including multiple and complex scenarios, for example ceasing after moving from a country area to the city and following changes in a partner's health status), 9% reported financial reasons, 4% reported that their licence was revoked, and 2% reported ceasing as a result of family pressure or advice.

The average time since driving cessation was 31 months or 2.5 years (*SD* 23 months), with a range of 2 to 92 months or 7.7 years. Retired drivers reported the sudden or gradual nature of their cessation on a scale of 0-10 (where sudden = 0 and gradual = 10), with a mean score of 4 (*SD* 4). The voluntary to involuntary nature of the cessation was also reported on a scale of 0-10 (where voluntary = 0 and involuntary = 10). The mean was 2 (*SD* 3), indicating that cessation was voluntary for the majority..

The majority (86%) of retired drivers reported that they were involved in the decision to cease driving, while 27% also reported doctors' involvement, 13% reported family involvement, and 11% reported other people's involvement (eg. staff of retirement village). Most (82%) retired drivers had no drivers in their household.

### 3.4.3 Never Driven Group

Forty-one participants who had never driven or ceased driving more than 10 years prior to participating were involved in the study. Just over half of the 'never driven' group (56.1%) was in the post-cessation stage of driving cessation, indicating they had been drivers at one stage. The remainder (43.9%) had never driven and therefore stages of change were not applicable. The majority (65.9%) of the never driven group did not have a driver in the household, with the remainder having one driver (29.3%) or two (4.9%). The trip of furthest distance for the never driven group in the previous three months ranged from 2 to 7100 kilometres, with a median of 86 kilometres.

### 3.4.4

#### Research Questions 3:

#### What is the impact of driving cessation on the lifestyle and wellbeing of community-dwelling older people?

Driving cessation has a dual impact: it creates a life transition and reduces transport opportunities. To help to differentiate between the two areas of impact, the data were analysed by comparing current and retired drivers (dual impact) and retired drivers and the never driven group (transport opportunities the same, impact of transition only). Table 2 contains a summary of raw scores on the measures used to assess lifestyle outcomes for the three groups. Appendix A contains a summary of statistical results from group comparisons.

Significant differences between current and retired drivers on lifestyle outcomes were found after adjusting for age, gender, living situation, health status, ADL and IADL status. In terms of roles, retired drivers had fewer present roles ( $F_{(2)}= 6.6, p < 0.0001$ ) and were less likely to participate in a volunteer ( $\chi^2_{(1)}= 7.9, p = 0.005$ ) and family member role ( $\chi^2_{(1)}= 6.7, p = 0.009$ ) than current drivers. Regarding time use, retired drivers spent less time in social leisure ( $F_{(2)}= 5.7, p = 0.002$ ) and away from home ( $F_{(2)}= 12.3, p = 0.0001$ ) and more time in solitary leisure ( $F_{(2)}= 7.3, p = 0.0001$ ). They had lower life satisfaction scores ( $F_{(2)}= 4.2, p = 0.01$ ).

A weak relationship was also found between driving status (current or retired driver) and number of very valuable roles ( $F_{(2)}= 3.1, p = 0.015$ ), participation in a carer role ( $\chi^2_{(1)}= 3.7, p = 0.05$ ) and participation in organisations ( $\chi^2_{(1)}= 5.2, p = 0.022$ ). Retired drivers had fewer very valuable roles and were less likely to be a carer or participant in an organisation.

Analyses of differences between lifestyle outcomes of retired drivers and those who have never driven indicated one area of significant difference. Retired drivers spent significantly less time than the never driven group in volunteer work ( $\chi^2_{(1)}= 6.7, p = 0.009$ ).

**Table 2: Lifestyle outcomes for the three groups**

Outcome	Current driver	Retired driver	Never driven
Role participation			
No. of roles (mean)	6.5	5	5.9
No. of very valuable roles (mean)	5.3	4.1	4.9
% friend role	97.1	92.9	92.7
% family member role	97.1	87.5	95.1
% home maintainer role	92.0	73.4	85.4
% hobbyist role	78.8	66.1	73.2
% organisational role	72.3	48.2	61.0
% religious participant role	43.8	39.3	53.7
% volunteer role	66.4	30.4	56.1
% student role	28.5	21.4	24.4
% carer role	38.7	17.9	24.4
% worker role	28.5	12.5	24.4

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<b>Time Use</b>			
Mean hours per week in:			
Sleep	57.6	59.6	59.1
Solitary leisure	29.4	40.8	36.5
IADL	22.3	19.1	22.8
ADL	17.5	19.0	18.2
Social leisure	20.4	14.0	16.0
Rest	3.2	6.2	3.6
Health care	3.4	3.0	2.4
Transport	4.8	2.8	3.9
Spiritual	0.9	1.1	1.1
Volunteer work	4.1	1.0	3.2
Study	1.4	0.6	0.5
Caring	0.6	0.5	0.5
Paid work	2.3	0.3	0.1
Hours with other people	117.5	76.1	81.7
Hours away from home	28.4	15.0	19.1
Episodes away from home	8.7	6.1	7.0
<b>Life satisfaction</b>	20.9	17.8	18.7
LSIZ scale (26)			
<b>Self esteem</b>	24.1	23.5	23.3
Rosenberg Scale (30)			
<b>Depression</b>	1.9	3.0	2.9
CES-D (24)			
<b>Health related quality of life</b>	45.2	35.2	38.4
Physical component score (100)			
Mental component score (100)	55.7	53.5	53.2

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**Key Points:**

- The majority of current drivers have no plans to cease driving in the next 6 months.
- The majority of retired drivers in the sample had given up driving more than 6 months previously.
- Participants had retired from driving for a variety of reasons, but primarily for health reasons.
- Most retired drivers reported making the decision to give up driving and described this as voluntary. Doctors and family also had some influence.
- Most retired drivers had no other drivers in the household.
- Current drivers scored higher than participants in the never driven group, who scored higher than retired drivers on:
  - Number of roles and participation in social and community roles (organisations, volunteer, carer)
  - Episodes and time away from home.
  - Time in social leisure.
  - Life satisfaction.
- Driving cessation has an impact on lifestyle outcomes for older people.
- The impact appears to be more strongly related to reduced transport opportunities.
- The transition or changes associated with driving cessation also appear to impact on lifestyle outcomes.

### **3.5 Future Plans, Expectations and Resource Preferences**

Participants were asked about their future transport plans. In addition, current drivers were asked about their experiences of driving and their expectations of driving cessation. Retired drivers were questioned about the experience of driving and driving cessation. Current and retired drivers were asked about their needs and preferences for support and resources to assist them with transportation now or in the future.

#### **3.5.1 Data Analysis**

A template analysis is an approach to thematically analysing qualitative data using an a priori framework derived from the literature or from earlier research (Crabtree & Miller, 1999). Because of the large number of participants in this study, for qualitative analysis and brevity of the comments obtained, it was determined that a reasonably structured approach to analysis was required. A template was derived from the earlier research by the authors. The data were read and coded according to content within the thematic categories in the template using computer software (NVivo). As the analysis procedure was structured, it was undertaken by one researcher and checked by another member of the team.

Provision was made for the finding of additional detail or new themes, due to the inclusion of an entirely new perspective (current drivers). Comments that did not fit any of the pre-existing categories were collected and analysed thematically after the initial template analysis. The template was then altered to fit the new findings.

### 3.5.2 Research Questions 4:

#### What are the future transport plans of older current drivers, retired drivers and those who have never driven?

Participants were asked “*Do you expect your mode of transportation to change in the future*” and responses were recorded verbatim.

#### 3.5.2.1 Current Drivers



Responses from 137 current drivers were recorded. Seventy-nine drivers (58% of drivers) indicated that they did not expect their mode of transportation to change in the future. Expanding on this response, some participants indicated that they would not voluntarily change transportation “*definitely not! Not unless they take my licence off me*” (current driver), with others focusing on changes to their car rather than the potential to cease driving “*a smaller car maybe*” (current driver).

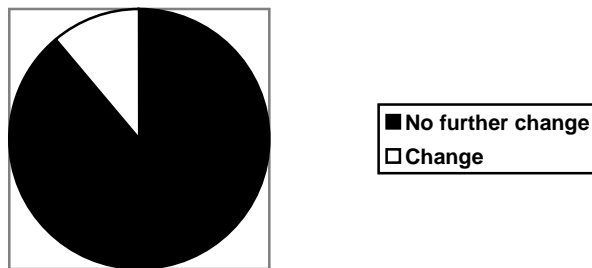
Fifty-five drivers (40%) indicated that they expected a future change to their transportation. The responses were divided into an expectation that in the *distant future* a change (usually specified as having to retire from driving) probably would occur (45 [32.8%] drivers). “*I think it probably will somewhere down the track, you can’t see into the future*”(current driver). There was no indication of potential reasons for retiring or expectation that it would be preferable to be planning for this change. “*Eventually, a time will come when I’m too old to drive, but that’s a long time in the future*” (current driver).

Ten drivers gave a more specific reason, and some gave a timeframe for expecting to change transportation (again usually specified as retiring from driving). “*Yes this will probably be my last year driving. It is difficult for me to watch the road and read road signs because of my cataracts*” (current driver). A few specified that they would drive until they were told to stop driving by health professionals or family members “*it depends on my eyes...I will drive for as long as I can and leave the decision to my doctor*” (current driver). Other responses included changing back to driving as their mode of transportation “*I plan to start driving again when my back is better*” (current driver) or changes involving other forms of transport “*will have to change to public transport for the environment*” (current driver).

In discussing expectations of having to retire from driving, responses could be divided into two major categories: *plans* and *deal with it then*. Plans included consideration of public transportation options, in particular taxis “*will use buses*”, “*I suppose I will catch taxis*”, walking, bicycles and

motorised scooters as transport “*would use a scooter...public transport may be difficult as I find it difficult getting in and out of cars*”. Frequently mentioned was private transport, in particular the expectations that a spouse would drive “*my only options would be my wife*”. Some participants stated that if alternatives in their local area were better, that they would cease driving now “*if the bus came to the door, I’d give up the car*”. Some drivers mentioned relocation as a plan to deal with driving cessation. “*we would have to move if both of us lost our licences*”. Despite naming particular plans, very few of the participants indicated that they had investigated these options. The other perspective from current drivers was that the planning could occur once driving cessation was a reality “*you think about these things when the time comes*”.

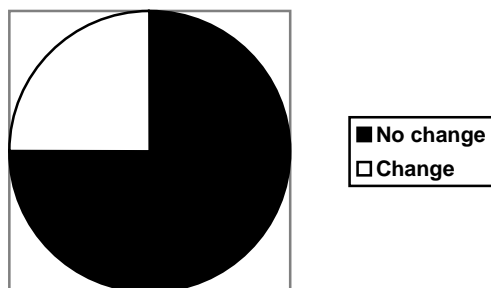
### 3.5.2.2 Retired drivers



Responses from 55 retired drivers were recorded. The majority (89%) indicated that they did not anticipate any further changes to their transport situation. A number indicated that they felt that no further changes were possible “*no it will stay the same. I still cry for my car*”. “*the next one will be a hearse!*”. A few indicated that further deterioration in health may lead to problems with their current transport (particularly walking or using the bus) “*I hope not because I’ll be stuck*”.

A minority (11%) indicated that they anticipated future changes to transportation. Two retired drivers suggested that their mobility may improve with adjustment to driving cessation “*I’d like to get a half fare so I can get anywhere, like down to the railway station*”. The remaining retired drivers indicated that future changes would include aiming to try to return to driving if possible “*If I won a car, I would do a defensive driving course*”, “*If my heart improves I’d love to go back to driving*”.

### 3.5.2.3 Never driven



Responses from 40 people who had never driven or who had ceased driving for more than 10 years were recorded. Three quarters (75%) of this group indicated they did not expect any changes to their transport situation. Participants commented on being happy with their current transport “*no I hope to go on as they are now*”, “*not unhappy with my transport, a bus comes every 15 minutes*”.

One quarter (25%) indicated that they anticipated possible future changes. These included loss of access to private transport “*if my husband can’t drive it will change*”, “*my son could move overseas*” and potential health problems limiting use of public transport “*I’m afraid as I get older, I’ll get less mobile, then I’ll be incapable of taking public transport because it’s uphill all the time*”. “*I may need more taxis than buses due to my medical condition (arteries in legs)*”.

Summary: More than half (69%) of the total sample did not anticipate future changes to transport, with current drivers being most likely to anticipate a future change (40%), and retired drivers being the least likely to anticipate further changes (11%).

#### **Key Points:**

- The majority of older people do not expect their transport to change in the future.
- Current drivers tended to expect that their transport may change in the *distant future*.
- Few specified plans for the future and a number thought they would deal with it when the time comes.
- Retired drivers and those who have never driven felt that loss of private transport and health problems could cause their transport use to change in the future. These were primarily noted as negative changes.

### **3.5.3 Research Questions 5:**

**What are the expectations of current drivers about driving cessation?  
How do these compare with the experiences of retired drivers?**

Current and retired drivers were asked about their experiences of driving and their thoughts on driving cessation.

#### **3.5.3.1 Experiences of driving – current and retired drivers**

Participants tended to describe driving in contrasting ways. Two major themes emerged: *convenience versus essential*, and *feelings about driving*.

##### “Driving as convenience” versus “driving as essential”

In the theme *convenience versus essential*, two opposing views of the role of driving in maintaining lifestyles were described by current and retired drivers. Participants from both groups endorsed the view of driving as providing lifestyle convenience. Driving was described as making life pleasant and daily activities easier. “*the best luxury there is...a privilege*”; “*the convenience to go where I want to when I want to*” (current drivers). Descriptions of the meaning of driving also focussed on the freedom and control that being a driver enabled. “*independence, self sufficiency*” “*In control of your own life and your movements and decisions*”(current drivers) Current drivers spoke of having choice in their lifestyle and not having to rely on others. “*independent, care for myself...not rely on others*” “*Freedom! That’s what it’s all about*”. Some retired drivers reported that driving was previously a major part of their daily life “*Freedom...I used to drive so much. It was something else*”(retired driver), while others reported feelings of freedom just from having “*that knowledge that you could if you needed to*”(retired driver). This viewpoint emphasised that while driving was helpful it was not a life necessity “*it is convenience...never an essential thing*”(current driver).

The contrasting viewpoint characterised driving as *essential* for maintaining lifestyles, valued roles and personal safety, rather than a luxury. *"I couldn't go anywhere without driving"* *"I need my car"* *"driving is like my feet"* (current drivers). Current drivers reported that they couldn't access various roles or the community in general without driving *"being able to access services"* *"helping other people"* *"allowing me to complete the activities necessary for work and family commitments"* (current drivers). Retired drivers spoke of roles both past *"it was part of my working life"* *"transport my children"*, and current that had relied on driving *"for household chores"* *"able to see friends and family in Brisbane"* (retired drivers). Driving was also identified as enabling access to multiple roles and tasks *"able to take part in several activities"* (retired drivers). Current drivers discussed the perceived lack of safety of other transport options and viewed driving as essential due to the safety concerns about the alternatives. *"safety - don't have to deal with being bullied or abused"* *"security you know you can get in the car and not rely on others, not walking to train, putting self out into public arena"* (current drivers). Retired drivers did not discuss safety issues.

### Emotional responses to driving

In describing *feelings about driving*, there were three major groups of responses. Current and retired drivers reported enjoyment related to driving, neutrality, or stress. Current and retired drivers related feelings of pride and enjoyment about driving: *"I enjoy driving. It's important to me. A skill I enjoy having"* (current driver). *"If I could have driven around the world I would have (retired driver). It was the best thing, I loved it"* (retired driver). Some participants discussed enjoying the act of driving *"I loved it, my hands on the wheel, my bottom on the seat, any excuse! The joy of driving! (retired driver)"*, while others discussed the importance to them of the self image and responsibility associated with the driving role. *"driving meant everything – independence, self esteem and I enjoyed it."* *"It was something I loved doing...I did pride myself on being meticulous where road rules were concerned"* (retired driver).

Some participants reported that driving held no emotional or deep meaning to them and was merely a practical role: *"means of getting from point A to B"* (current driver). A few participants reported reduced importance and meaning of driving in later life *"It used to mean more than it does now, I used to have to transport children"* (current driver). More retired drivers emphasised a functional view of driving *"not very much. If you had it you used it. I wasn't sorry to stop"* *"It didn't really mean anything"*, *"to me it was four wheels"* (retired drivers).

In contrast some current drivers and retired drivers related the driving role to feelings of stress and responsibility *"I don't like it much... it is a thing of necessity, I don't enjoy driving"* *"extreme care"* (current drivers). A small group of retired drivers also spoke of the *hard work* they associated with driving. This group spoke of driving as a skill that required their attention and effort *"I was a nervous sort of driver...hard work and concentration"* (retired driver). The occurrence or possibility of accidents when driving appeared to be an issue for this group *"a lot of hassle, I smashed the car frequently"* (retired driver).

### **3.5.3.2 Expectations about and experiences of retiring from driving**

Current drivers were asked about their expectations of retiring from driving and whether they would anticipate lifestyle changes. Drivers were asked about their expectations of driving cessation and its impact on lifestyle. Responses from 122 drivers were recorded. One hundred drivers (82%) reported that they expected that retiring from driving would change their lives. The extent of the anticipated change varied considerably from minor adjustments to lifestyle *"slightly, in convenience"* *"I would still get out but would not have the ease of going when I want"*, to major disruption *"not being able to drive means nothing in my life after 9am"* *"I dread it, my whole life would change"*, *"be housebound"* *"more socially enclosed, locked in behind the fence"*.

Specific expected changes with driving cessation were described in five major categories: *emotional responses, dependence, more planning and slower pace, losses, explore alternatives*. Only one

participant spoke of expecting positive changes with driving cessation (an increase in exercise); the rest focussed on potentially negative outcomes.

Twenty-two current drivers (18%) reported that they did not expect their lifestyles to change if they retired from driving. Some participants (5) stated that this was because a household member would still be driving. Others emphasised that they would just need to adapt to available options *“you need to accept that it will happen”* *“I would use the train or taxi more”* *“I’m capable and could make those adjustments. I’m going to start making those mental adjustments over the next 5 years”*. Others did not specify reasons for this response.

Retired drivers were asked whether they experienced a change to their life following driving cessation. Responses from 55 retired drivers were recorded. The majority (91%) reported that driving cessation led to a change in lifestyle. These changes varied from minor changes *“only to a small degree, it’s a damn nuisance when I run out of something but it’s a minimal problem”* to major disruption to life *“made me a prisoner of the house, can’t access leisure, shopping, can’t drive wife”*.

Five people (9%) reported they did not experience a change in lifestyle following driving cessation. Four of these reported they still had a driver in the household *“husband still drove”*. The other reported feeling that no substantial changes had occurred: *“no great difference”*.

Changes reported by retired drivers were also analysed and grouped into themes. These included *emotional responses, dependence, more planning and slower pace, self-image, concurrent life changes, and positives*.

### **3.5.3.3 Emotional responses**

In describing *emotional responses*, current drivers spoke of anticipated feelings of loss and extreme restriction of lifestyle. Terms such as *catastrophic* and *traumatic* conveyed the expected enormity of the change. *“very miserable, frustrated, trapped”*; *“shock to self esteem”* *“I would feel as if my arm had been cut off”*. There was a particular focus on the impact of not being able to move freely and reduced interaction with other people. *“I would probably die of boredom”* *“I’d sink into nothingness”* *“I’d be a prisoner in the home”*.

In discussing emotional responses, the majority of retired drivers reported feelings of loss *“almost akin to losing someone close to you, I mourned the car”* *“lost my independence”* *“deprived me of my freedom”*, *“depressed”*. A few also discussed the need to adjust to the change at the same time as experiencing substantial loss *“to the bad. To the big depression. It’s hard to make adjustments and they need to be made so quick”*, *“it was a full stop. Anywhere I wanted to go, I had to find out about the buses, times, stops, etc. It was terrible and took time to come to terms with. But I got used to it because of necessity”*. Some participants indicated that they still experienced feelings of grief and loss *“I still mourn for my car... I miss my independence... I miss being able to please myself”*. In contrast, three participants reported feelings of relaxation related to driving cessation *“Yes I feel more relaxed. Life is less stressful”*.

### **3.5.3.4 Dependence**

For some current drivers, driving cessation was anticipated as a practical step to take particularly if there was another driver in the household *“wife would drive”*, where for others it would mark another transition to being dependent *“I would be dependent on other people to do the things I do now”* *“you’d be tied to other people’s timetables”*. Dependence also incorporated the expectation of role loss with driving cessation. Current drivers identified specific roles (volunteer work, leisure outings, classes etc) that they expected to be unable to continue following driving cessation. *“may have to give up swimming”* *“I couldn’t mix with other people, I couldn’t go to classes. Or I couldn’t go to the beach”* *“have to stop hospital visits”*. Drivers also noted that family and friend roles

would be altered “*make my life very lonely*”, “*You can’t expect people my age to come and visit me*” “*not be able to visit family as often*”.

Retired drivers discussed the experience of *dependence* following driving cessation. Some participants reported total cessation of all roles and activities outside of the home “*I don’t go anywhere*” “*not being able to get out and being on your own*”. Many participants reported a reduction in social roles and activities “*the bottom fell out of it. I couldn’t visit friends that were too far away, I lost access to friends and activities*” “*It completely changed my lifestyle. I used to be out a lot. Where I lived I used to know everyone but all of a sudden that was cut off, from all the people I know*”. Others reported cessation or reduction of specific roles “*getting to uni is a problem*” “*I had to give up most of my voluntary work because I couldn’t get anywhere*”. Retired drivers reported a change in self-image following driving cessation. New self-images tended to be related to dependence. “*Loss in confidence, inconvenience, have to rely on other people and you feel like you’re not able to do things for yourself – totally dependent*”.

#### **3.5.3.5 More planning and a slower pace**

In *more planning and slower pace* current drivers identified that driving cessation would alter the way in which they handled their routines. They suggested that a reorganisation of priorities and approaches would be needed, as would patience in relying on alternative transportation. “*I would have to plan more*” “*could adapt lifestyle because of the bus and train service available, but a big loss of flexibility and independence*” “*my life choices would be rather restricted*” “*I expect I would have to slow down and stop doing things I like to do*” “*wouldn’t be able to do as much in a day as now*”.

Retired drivers also discussed that *more planning and a slower pace* was a reality for some people following driving cessation. Daily activities were accompanied by the need to consider whether the trip was needed and how it could happen, “*a lot more hassle having to organise other transport*”, “*You had to rethink the places you could go to*” “*I’ve got to conform to what everyone else wants and when the bus is available*”. The need for planning was associated with a feeling of dependence “*couldn’t just get into the car and breeze off...husband had to drive me around...no longer free to do my own thing*” and reluctance to undertake too many activities “*could no longer go out anytime. Now I have to plan, consider if it’s really worthwhile. Now I have to stay home*”.

#### **3.5.3.6 Explore alternatives**

Only current drivers reported that they were unaware of their options following driving cessation and that they would need to *explore alternatives* to driving. Many were not currently aware of local options “*would look at services and concessions available*” “*I’d have to do a lot of research on availability of and access to local transport options*”.

#### **3.5.3.7 Other life changes and positive aspects**

Retired drivers reported two themes that current drivers did not: *concurrent life changes and positives*. Retired drivers described *concurrent life changes* that occurred simultaneously to driving cessation, which at times made it difficult for them to articulate the impact of retiring from driving, “*part of a parcel of reasons, individually the biggest decision I had to make*”. Retired drivers reported changes in personal health status “*stroke changed my life*”, family members’ health status “*my whole life changed because my husband had several strokes*”, and relocation “*it made me move to a retirement village due to not driving*”. Seven participants reported positive aspects of driving cessation, with some indicating pleasure at being driven by others “*I could relax and let [wife] do the driving*” or advocating the benefits of alternative transport use “*giving up driving allowed me to meet other residents of the village on the village bus*”.

**Key Points:**

- For some current and retired drivers, driving meant freedom and independence.
- For others driving was essential for maintaining lifestyles, participation in roles and safety.
- The majority of current drivers expected lifestyle changes following retirement from driving. The majority of retired drivers reported a change in lifestyle following driving cessation.
- Changes in lifestyle ranged from minor adjustment to major disruptions.
- The majority of retired drivers experienced feelings of loss following driving cessation.
- Dependence on other people and services was an expected negative consequence of driving cessation, compared with the freedom and independence that driving provided.
- Retired drivers reported a slower pace in lifestyle and the need for greater planning.
- Current drivers expected to have to explore transport alternatives and were not always currently aware of what these were.

**3.5.4 Research Questions 6:****What are the preferences of current and retired drivers for support and resources related to driving cessation?****3.5.4.1 Data Analysis**

During the study, both quantitative and qualitative data were collected to determine what resources were needed to assist older people with the process of driving cessation. Qualitative data were collected using open-ended semi-structured interview questions. The data were analysed using template analysis (Crabtree & Miller, 1999; Miles & Huberman, 1994) with a computer software package for qualitative analyses (N-Vivo). Responses were also separated by driving status categories for analysis. Prior to analysis, a template was developed from earlier research. Additional themes were coded if they were raised by two or more people or gave an opposing view to a theme that had already been identified. The new set of themes was then organised into themes and sub-themes. Comments from the first 20 participants were then tested against the template to ensure saturation of themes.

**3.5.5 Resources**

Of the 234 older people who were interviewed, 41% affirmed that they would attend a program or use resources designed for people giving up driving if they were in that situation. Resource qualities were investigated, including format, content and who should be involved. Of those who thought that resources were important, participants endorsed ideas that originated from both the earlier study and the exploratory phase of this study. These ideas included group sessions (both small, intensive sessions and larger, briefer sessions), written materials, telephone, Internet, television, radio and a combination of media.

A summary of recommendations and factors for consideration that were made by at least five participants is contained in table 3. For further details see Appendix B.



**Table 3: Resource issues for consideration**

Resource Issues	Factors for consideration
Face to face presentations	<ul style="list-style-type: none"> <li>- length of engagement (brief overview vs intensive group)</li> <li>- access to groups (transport)</li> <li>- size of group</li> <li>- key people <ul style="list-style-type: none"> <li>o peers/role models</li> <li>o health professionals</li> <li>o council/government representative</li> <li>o transport providers</li> </ul> </li> <li>- location <ul style="list-style-type: none"> <li>o local</li> <li>o accessible building</li> <li>o near public transport</li> <li>o examples include community hall, library, retirement village, seniors groups, in person's home</li> </ul> </li> </ul>
Written resources	<ul style="list-style-type: none"> <li>- stand alone or part of a support program</li> <li>- more private than groups</li> <li>- vision impairment and literacy issues</li> <li>- need to be able to ask questions and get support</li> </ul>
Other options	<ul style="list-style-type: none"> <li>- telephone</li> <li>- TV/radio</li> <li>- Internet</li> </ul>
Content	<ul style="list-style-type: none"> <li>- Information <ul style="list-style-type: none"> <li>o Transport alternatives</li> <li>o Locally relevant</li> </ul> </li> <li>- Discussion <ul style="list-style-type: none"> <li>o Ask questions</li> <li>o Share experiences</li> </ul> </li> <li>- Coping <ul style="list-style-type: none"> <li>o Learn coping strategies</li> <li>o Share/seek support</li> </ul> </li> <li>- Planning <ul style="list-style-type: none"> <li>o Knowing when to stop driving</li> <li>o Expecting and preparing for changes</li> <li>o Altering lifestyle</li> </ul> </li> </ul>

**Key Points:**

- Two group formats were suggested: small groups (longer-term, intensive) and talks (brief, overview).
- Older people identified the need to be able to ask questions.
- A variety of people should be involved, including health professionals, council, peers and transport providers.
- Groups should be local and accessible.
- Written resources and a website were also resource options supported by participants.

### 3.6 Discussion

The results of the exploratory phase indicate that driving cessation is a life transition with implications for safety and well being. Some particular areas of concern will be briefly highlighted and recommendations for future directions will be made.

It is likely that people's transport needs and abilities will change with ageing (Hildebrand, 2003; O'Neill, 2000; Organisation for Economic Cooperation and Development, 2001). While researchers, health professionals and policymakers recognise this trend and emphasise the need to promote continued safe mobility (Australian Transport Council, 2001a; O'Neill, 2000; Organisation for Economic Cooperation and Development, 2001), the findings of the exploratory phase indicate that older people do not share this awareness. The majority of current drivers in this study indicated that they do not expect to cease driving, and in particular have not made plans for this contingency, with some being so resistant to the idea that they declined to answer questions about potential resources that may assist with this transition.

The first research question focused on the current transport use of older people. The exploratory phase indicates a strong reliance on private motor vehicles for older people and limited use of public transport. Older drivers appear to have a limited repertoire of transport habits, tending to rely almost entirely on driving themselves for all trips. Older non-drivers reported using a wider variety of transport options, including walking, private transport and taxi use. They also reported a lower frequency of trips away from home. These findings are supported by other international studies (Gilhooly et al., 2003; Marottoli et al., 2000). The lack of familiarity with options before driving cessation, as well as the potential lack of suitable options may strongly contribute to some of the negative outcomes of driving cessation (Bamberg, Rolle, & Weber, 2003; Eberhard, 1998; Ibrahim, 2003). The reliance of older non-drivers on walking may pose safety concerns (Australian Transport Safety Bureau, 2002) and require education, support and environmental modification (Patterson & Chapman, 2004; Straight, 2003) to promote safe pedestrian practices. Increasing awareness of, and familiarity with, alternative transport options for drivers, as well as helping retiring drivers to learn about and access suitable options may be an important direction for future resources.

The second research question investigated the attitudes of older people to alternative transport. Recent research into understanding and changing transport behaviours has used the Theory of Planned Behaviour (also known as the Theory of Reasoned Action) (Bamberg et al., 2003). This theory suggests that the best predictor of behaviour is intention. Intention is affected by three aspects: the attitude towards the behaviour, the subjective norms regarding the behaviour, and the perceived control over the behaviour (Ajzen, 1991). Understanding attitudes has been regarded as an important precursor to changing behaviours, particularly in situations where people may not spontaneously choose to change behaviour (Fishbein & Ajzen, in press). The findings of this study suggest that in evaluating all alternative transport options, current drivers use driving a private motor vehicle as the point of comparison. They appeared to be more strongly concerned with convenience than non-drivers. Older non-drivers appear to have concerns about access and maintaining independence, which were not reported by drivers. Other studies have indicated that drivers may have limited awareness of issues for people with disabilities in accessing public transport (Ibrahim, 2003), and may view alternative transport as unacceptable as it compares unfavourably to driving a motor vehicle (Madachy, 2003).

As people who retire from driving commonly do so for health reasons (Dellinger, Sehgal, Sleet, & Barrett-Connor, 2001; Hakamies-Blomqvist & Wahlstrom, 1998), it is not surprising that many older non-drivers may have access concerns with alternative transport. The public transport system is organised around the needs of the able, working population, with the majority of services running into central locations at peak times (Cvitkovich & Wister, 2001). Older people generally prefer to travel in off-peak times and to several local destinations (Alsnih & Hensher, 2003; Coughlin, 2001). As communities generally have been set up around the expectation that most people drive, the need to review transport options for older people has been widely reported (Organisation for Economic Cooperation and Development, 2001).

Transport providers need to be aware of the attitudes of older people about transport alternatives. As current drivers report rarely using alternatives, their attitudes do not appear to be based on recent personal experience. Programs which promote trialling of alternatives to counter concerns about convenience may be warranted, particularly at key times of change for older people when they may be more open to new habits (eg retirement, moving house) (Bamberg et al., 2003). In addition, concerns about convenience, access and independence need to be addressed so that use of alternatives to driving that would enable maintenance of lifestyle are regarded as viable options.

The third research question investigated the lifestyle impact of driving cessation. The results indicated that retired drivers had poorer lifestyle outcomes than current drivers. This has been supported by population based studies internationally (Fonda et al., 2001; Gilhooly et al., 2003; Marottoli et al., 2000; Marottoli et al., 1997). The differences between current and retired drivers and similarities between retired drivers and the never driven group indicate that the lifestyle impact is primarily related to transport availability. Differences found between retired drivers and the never group, even in this sample where a number of retired drivers had experienced the transition to non-driver some years ago, indicate that the transition also has an impact on lifestyle.

These findings indicate a need for resources to address transport availability and use, as well as adjustment to loss and change. A focus on goal setting, problem solving and practical exercises aimed at maintaining activities, roles and life satisfaction would seem indicated. In addition, education and practical exercises focussing on use of alternative transport to enable community access would be needed. Changes to the current transport options available for older people may also be required.

The fourth and fifth research questions investigated future planning and expectations and experiences of driving cessation. The lack of awareness and planning found in this study is of concern as life transition research indicates that unanticipated life changes lead to more difficult adjustment (Blair, 2000). If people are not expecting driving cessation to occur, they may not have the required skills, attitudes and environmental support to use transport alternatives, and this may lead to severely reduced community access (Alsnih & Hensher, 2003; Sterns, Sterns, & Nelson, 2001). Alternative transport can have safety risks, with high levels of older pedestrian fatalities being reported (Australian Transport Safety Bureau, 2002; Hakamies-Blomqvist & Peters, 2000). Some preparatory education about safe outdoor mobility, and safe and confident use of public transport, as well as reviews of the environment in which older people mobilise, may reduce negative outcomes for older non-drivers and increase acceptability of alternative transport options (Powell, Wilkins, Leiper, & Gillam, 2000; Rosenbloom, 2001).

The expectations of current drivers about the impact of driving cessation were almost entirely strongly negative. The results indicate that driving cessation did impact on retired drivers, generally in a negative way. Current drivers did not appear aware of the potentially positive or neutral outcomes of driving cessation. These results indicate that to improve planning for and adjustment to driving cessation, older people need a realistic awareness of the issues. Outcomes for retired drivers need to be improved through support programs and improved transport options. There appears to be stigma and fear associated with driving cessation, both of which may impact on the likelihood of people planning to voluntarily cease driving and seeking help if they have concerns (Freund, 2003). At present, the poorer lifestyle outcomes of retired drivers mean that these fears may be partially based on fact. Improving the lifestyles of retired drivers and reducing the fears of current drivers should be aims of future resources and policies.

The findings also indicated that driving has different meanings for different people. For some people it is a highly valued role with strong links to identity and self-worth, where for others it serves to provide convenience, access and mobility. Resources would need to be sensitive to these different meanings and responsive to changes over time.

Research question six focussed on the resource preferences of older people. While some participants indicated they would not need or choose to use resources, many indicated they would. Unwillingness to consider using resources may reflect an overall reluctance to think about, and plan

for, driving cessation or ignorance about the needs that may be associated with this process. Earlier research indicated that some people spontaneously adjust to driving cessation, while others have a more difficult adjustment process and poorer outcomes (Liddle, Carlson, & McKenna, in press). Some people may therefore benefit more from access to, and use of, resources and support than others.

In concordance with earlier findings (Liddle et al., in press), there was support for the development of a range of resources to meet the needs of people at different stages of the driving cessation process. Some of these resources would provide an overview of information, while others would offer intensive support, information and practical advice and skill development. The findings of the development phase of this study suggest that local information, peer involvement, and accessibility may be important issues in resource development. The development and preliminary evaluation of the resources are discussed in the next section.

### **4.1 Introduction**

During the exploratory phase, data were collected on what resources and resource qualities would be needed for older people who were experiencing driving cessation or may do so in the future. Open-ended questions investigated media, format and content of prospective resources as described in section 2.5.5.

This information, along with relevant literature and the results of earlier research, was used to guide the creation of resources. Reference groups were used to provide initial feedback on the resources. More detailed evaluation of the resources, in terms of the effect on older people's plans for, and management of, the transition to driving cessation is needed in the future.

### **4.2 Implementation of Resource Recommendations – linking the exploratory and developmental phases**

Resource recommendations from earlier research were congruent with the resource recommendations from the exploratory phase. This indicates that the older people and health professionals involved in this study had similar ideas about the purpose, content and format of resources targeting the different stages of driving cessation. As a result of the information collected during the exploratory phase of the project, it was seen that helping people to adjust to driving cessation went beyond a single resource to encapsulate a diverse range of resources that would suit a wide variety of people.

The two proposed group structures (small/intensive and larger/overview) can be used to complement each other. The larger group format was conceptualised as a one-off short talk with the inclusion of guest speakers where appropriate to raise awareness of the issues surrounding driving cessation and to provide an opportunity for information dissemination, questioning and feedback. The second structure, involving multiple sessions over a longer duration, would enable people who are giving up driving or who have given up driving to not only be informed, but to adjust to driving cessation through shared experience, assistance with coping and lifestyle adjustment.

The development of a brochure and Retired Drivers' Handbook were proposed as a means of providing accessible information to a large number of people. A website was also proposed as an alternative method of disseminating information with a changing demographic of older computer users. Participants in this study did not endorse a telephone hotline as a medium for information dissemination and support, likely because public transport and transport service information are already currently available via the telephone. Information about these services would however be included in the content of the groups and written information.

### **4.3 Resources**

Based on the results of the exploratory phase, as well as the literature and an earlier qualitative study conducted by the investigators, interventions and resources were developed according to driving cessation stages (see table 4). This encompassed a range of media including:

- Awareness raising brochure: "Driving Later in Life"
- Awareness raising talk

- Group program to assist older drivers to adjust to driving cessation
- Retired Drivers' Handbook
- Website

**Table 4: Resources tailored to stages of driving cessation, media and reach**

Stage	Medium/Reach		
	Group/Lesser Reach	Written/Greater Reach	Other
<b>Driving in the past</b>	<ul style="list-style-type: none"> <li>• Awareness raising talk</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness raising brochure</li> </ul>	
<b>Predecision</b>	<ul style="list-style-type: none"> <li>• Awareness raising talk</li> <li>• Group program</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness raising brochure</li> </ul>	<ul style="list-style-type: none"> <li>• Website</li> </ul>
<b>Decision</b>	<ul style="list-style-type: none"> <li>• Group program</li> <li>• Awareness raising talk</li> </ul>	<ul style="list-style-type: none"> <li>• Retired Drivers' Handbook</li> </ul>	<ul style="list-style-type: none"> <li>• Website</li> </ul>
<b>Post-cessation</b>	<ul style="list-style-type: none"> <li>• Group Program</li> <li>• Awareness raising talk</li> </ul>	<ul style="list-style-type: none"> <li>• Retired Drivers' Handbook</li> </ul>	<ul style="list-style-type: none"> <li>• Website</li> </ul>

## 4.4 Development of the Resources

A number of principles raised by participants in the exploratory phase of this study were incorporated into the development of the resources. These included:

- Evidence-based resources
- Relevance to older people
- Local relevance
- Seeking further information

### 4.4.1 Evidence-based resources

Where possible, the resources were developed on the basis of available research evidence. Results from an earlier study and the first phase of this study feature strongly throughout the resources, as this project contributes to the under-researched field of older people and driving cessation. Literature from the wider fields of occupational therapy, gerontology, ageing and health and safety was also incorporated in the resources.

### 4.4.2 Relevance to older people

It is important to ensure that resources are relevant to older people. Older people identified in earlier research that learning from peers as well as “experts” (e.g. health professionals, government) was valuable. Therefore, to increase the relevance of the resources, part of the development stage involved seeking the feedback of older people on their content and format, as well as collecting images of older people for inclusion in the resources (see Image 1 as an example).

**Image 1: Photographic slate of example images for resources**



Quotes from drivers and retired drivers were used to illustrate key concepts within the resource. This assisted in providing peer teaching and learning in the awareness raising talks and written and electronic resources. Quotes were used to provide examples of concepts and model therapeutic principles. The quotes were extracted from qualitative data from the exploratory phase as well as previous research. To ensure privacy, identifying information was removed from quotes. Examples of quotes used include:

“adjust to another stage of life... not the end of life, just another phase.”

“A lot of it depends on yourself and you have to, I suppose, substitute a few things if driving meant that much to you, you have to read more, exercise more, find a different hobby, or a different sport.”

“I think one of the most positive was the fact that I made my own decision and everyone that I told about it, including my doctor, said ‘Well I think you’re probably making the right decision.’ So when you get that sort of back up you think, well, I’ll go ahead.”

“I still mourn for my car, but because I wasn’t safe with it... I miss my independence... it would be nice to be able to hop in a car and drive down [to the shops]. I thought my grandchildren would be available, but they’re at uni. I miss driving quite strongly, because of the loss of independence. My husband was still alive when I gave up driving, but I was putting pressure on him to stop driving. I was dependent on my husband whose driving was not too good. I miss being able to please myself... I didn’t see my friends or do the things I would have normally done.”

#### **4.4.3 Local relevance**

Results from the exploratory phase indicated the need for local relevance of resources. Local relevance was incorporated both in the information presented in the resources and in the delivery of the resources. Because of the location of this study, resources were tailored to South-East Queensland. This involved, for example, liaison with services (e.g. Transport Options and Access Information Line, Council Cabs, Transinfo) and government bodies (e.g. Queensland Transport, local councils).

Legislation, services and contacts vary between different localities. While a number of components included in the resources cover generic information, skills and suggestions, it is important to tailor the resources to the specific needs of the target audience. Therefore, if the resources were to be used beyond South-East Queensland (e.g. rural/regional Queensland, other States) they would need adaptation for the local context.

#### 4.4.4 Seeking further information

Older people in the exploratory phase identified that asking questions and learning about other contacts and resources were important. It is recognised that resources cannot exist as stand-alone products, as no resource is able to cater for the breadth of needs and information sought by users of the resources. In response to this, the written resources incorporate local contacts and provide information on services and other resources available.

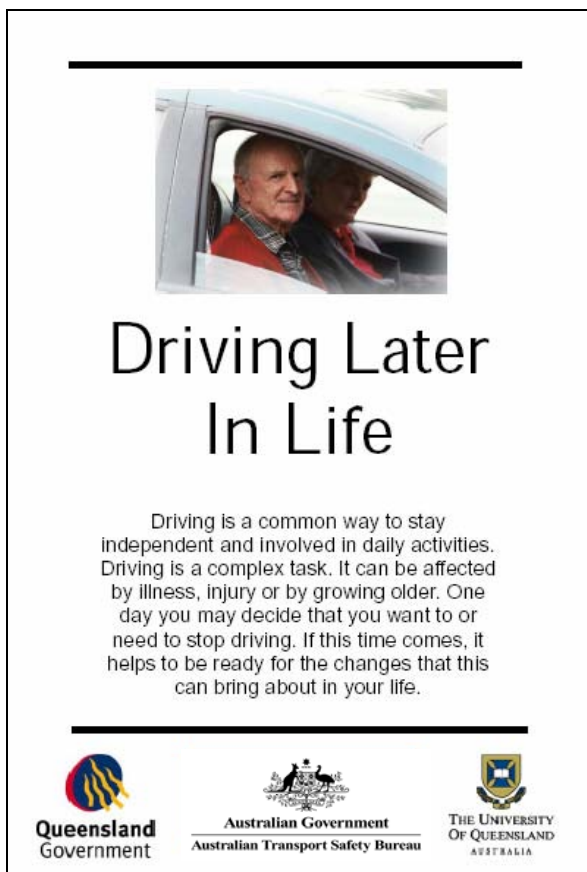
The awareness raising talks and group program provide an opportunity for older people to ask questions specific to their individual needs. It is suggested that health professionals should be involved in running the group program to cater for older people who may have specific needs relating to driving cessation (e.g. grief and loss issues, health and safety concerns). Guest speakers have also been incorporated as an important part of the group program to provide expertise on particular topics (e.g. police and personal safety, Queensland Rail and train use).

### 4.5 Description of Resources

#### 4.5.1 Awareness Raising Brochure

The awareness-raising brochure for older people who are considering ceasing driving was created and evaluated. The brochure includes content on the changes associated with ageing and their effect on driving, as well as advice from retired drivers on the need to plan early for the transition, alternate transport and talking to key people. The impact of the brochure on older drivers' knowledge about driving and the driving cessation process as well their confidence to manage a potential transition to non-driving status in the future was evaluated with 20 participants.

**Image 2: Cover of Awareness Raising Brochure**





#### **4.5.2 Awareness Raising Talk**

Based on the findings from the exploratory phase, the awareness raising talk was developed to inform older people (who may need to consider driving cessation in the future) about issues associated with driving cessation, including adjustment to life changes, preparation for driving cessation and transport and support options available (see Image 2). The awareness raising talk was designed as a 30-minute session (including guest speakers if available) to be delivered to interested community groups. Community groups may include retirement villages, Senior Citizens groups and disability support groups.

**Image 3: Pilot Awareness Raising Talk**



#### **4.5.3 Group Program to assist older people to adjust to driving cessation**

The group program to assist older driver to adjust to driving cessation focused on education and problem solving regarding the issues faced by older people when retiring from driving. It sought to provide a supportive environment where older people can learn from each other's experiences. Groups cater for 8 to 15 participants. The program involved a series of weekly sessions, run over 5-6 weeks. An occupational therapist or other trained health professional, along with a peer leader purposively chosen from the general community where practicable, could facilitate the groups.

A flexible system of delivering group content was devised, with the program content separated into a series of modules. Participants were able to select the modules they would like to cover to maximise relevance of the content. The content was based on the topics covered in the Retired Drivers' Handbook (outlined below), with a focus on interactivity, practical application and in-depth discussion. The program was supported with a manual for the health professional running the program and a workbook for participants to interact with, both during and outside of the sessions. It is suggested that the group be run in a community setting, such as a neighbourhood centre, library or retirement village, rather than a hospital, to make the program more accessible. Participants could be assisted in arrangement of transport to attend the groups during the initial weeks of the program to enable them to become more confident with public transport (see Images 3 and 4).

**Image 4: Pilot group – discussion of transport issues**



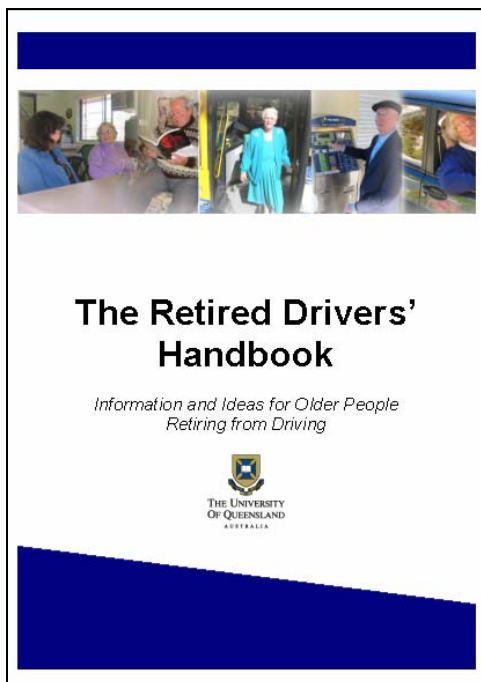
Pending evaluation of the groups and availability of funding, it is planned that the program will be packaged to be run by health professionals (preferably occupational therapists, given the focus on occupations and lifestyle) in community health care settings throughout Queensland. The occupational therapist or other health professional responsible for running the program would offer participants individual support; plan, coordinate and lead the sessions and refer participants to other services if required.

**Image 5 – Raising public awareness (with ABC Brisbane Radio) and trialling and assessing the safety of alternatives**



## Retired Drivers' Handbook

Image 6 – Retired Drivers' Handbook



The Retired Drivers' Handbook targeted older people who may not have access to the previously described program or where a suitably qualified health professional is not available to run the program. The handbook combined factual content with stories from retired drivers, strategies for life planning and coping with the loss associated with driving, as well as practical activities and experiences. Modules include:

### **Module 1      Growing older**

This module focused on the changes that may occur with ageing, myths and facts about ageing, and tips on how to age successfully.

### **Module 2      Driving in later life**

This module gave information about driving safely in later life and factors that need consideration when retiring from driving.

### **Module 3      Adjusting to losses and changes**

This module covered changes that may occur to lifestyle and feelings of loss and grief that may be experienced with driving cessation, as well as actions that can be taken to help adjustment and contact information for additional support.

### **Module 4      Experiences of Giving up Driving**

This module covered what it can be like to give up driving. Stories of other retired drivers have been included to exemplify different ways that people adjust to giving up driving.

### **Module 5      Alternative Transport**

This module covered the range of alternatives to driving available from public transport and transport services to less formal ideas for transport. The importance of safety when using these options is included as well as contact details for additional information.

## **Module 6      Lifestyle Planning**

This module covered factors to consider when planning for and achieving a balanced lifestyle. It contains strategies and exercises to aid in problem solving, describing personal goals and planning for the future.

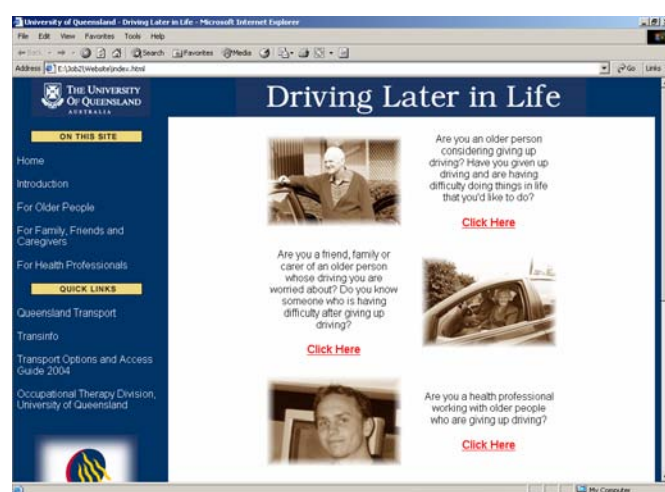
## **Module 7      Advocacy and Support**

This module sought to raise awareness about ongoing support services that are available and procedures for providing feedback to services and service providers to enhance their understanding of the needs of older people.

### **4.5.4      Website**

The website would contain an overview of information covered in the Retired Drivers' Handbook, as well as additional information for health professionals and families. Using a website would allow for information to be updated and improved periodically.

**Image 7 – Website**



## **4.6      Review of the Resources by Reference Groups**

Feedback was sought from reference groups of health professionals, older people and family members of older people about the relevance and appropriateness of the content and format of the resources for the target audience.

### **4.6.1      Health Professionals**

The reference group of health professionals contained nine occupational therapists and one occupational therapy assistant who reviewed the content and proposed format of all resources. Participants rated their satisfaction with presentation and content using Likert scales. They were also invited to provide additional feedback and suggestions via responses to open-ended questions. A summary of their feedback on the awareness-raising brochure, the Retired Drivers' Handbook and the website is provided below.

Satisfaction with the awareness-raising brochure content and presentation ranged from 7 to 10 (mean 8.4) and from 7 to 10 (mean 8.5) respectively. It was almost unanimous that the brochure was easy to read and relevant. All participants supported the use of pictures. Three participants suggested minor changes to layout. All participants felt that the brochure would be useful for clients with whom they work.

*“Great resource.”*

*“Very beneficial if it is going to be widely distributed, like rurally”.*

Satisfaction with the handbook content and presentation ranged from 7 to 10 (mean 9) and from 6 to 10 (mean 8.5) respectively.

*“This is a really great booklet. Very useful!”*

*“It would be great if there was this information or similar available for people in rural areas with limited public transport.”*

*“It’s a very good resource for both health professionals and clients.”*

Satisfaction with the website content and presentation ranged from 8 to 10 (mean 9.2) and from 8 to 10 (mean 9.3) respectively. All participants found the website easy to navigate and understand. The brevity of sections (ability to access compartmentalised information) and links were seen as positive features. Participants had some concern about making detailed information available without adequate support. It was suggested that brief information be contained in resources available to the public, and that more detail and training be provided for health professionals.

*“Well done! We really need some solid resources and good guidance for patients.”*

*“Health professionals, yes, but many older patients and clients don’t use the internet or computers. This will change over time of course.”*

#### **4.6.2 Older People and Family Members**

##### **Brochure**

A reference group of two family members of older drivers (daughters) and four older drivers (2 male, 2 female) reviewed the awareness-raising brochure. Scores for content ranged from 7 to 10 (mean 9), and for presentation from 6 to 10 (mean 9.25). Comments indicated that the brochure contained “*non-threatening*” *sensitive and positive*” and “*relevant*” information. Some minor changes were made as a result of participant feedback including the use of a variety of photographs of male and female older drivers, the inclusion of some additional medical conditions that may affect driving, and acknowledgement of emotional responses to driving cessation. Some of the older drivers in the reference group indicated that they learned some new information and “*I have just begun to prepare myself and this brochure will help*”.

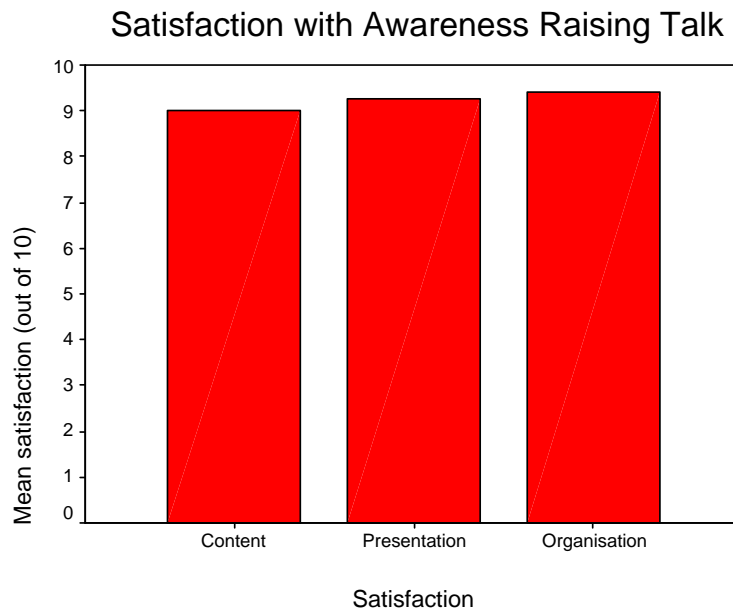
##### **Awareness-Raising Talk**

The awareness-raising talk was trialled at two sites. Twenty-three older people who participated in the talks rated their satisfaction with the content, presentation, and organisation as high (see Figure 7).

*“Comprehensive as it is.” (Participant at awareness raising talk)*

*“Thank you for your presentation, and especially for the contact information.” (Participant at awareness raising talk)*

**Figure 7 – Satisfaction with Awareness Raising Talk**



## **4.7 Discussion**

A wide range of resources are currently being developed and improved to meet the needs of older people who are planning for or experiencing driving cessation. Input from both older people (current and retired drivers) and health professionals has been instrumental in creating resources that address the needs of older people and are accessible to them at various stages in the driving cessation process. Preliminary feedback has reflected a high degree of satisfaction with the resources. Formal evaluation of the effect on these resources on older people's plans for, and successful management of driving cessation is needed.

### **Key Points:**

- Five resources have been created and are undergoing further development including:
  - Awareness-Raising Talk
  - Awareness-Raising Brochure
  - Group Program to Assist Older Drivers to Adjust to Driving Cessation
  - Retired Drivers' Handbook
  - Website for Older People, Health Professionals and Family Members
- Preliminary feedback has shown that the resources are relevant and accessible and address the needs of older people at a variety of stages of driving cessation.
- Further pilot testing and evaluation of the resources will guide their continued development.

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## 5 RECOMMENDATIONS

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Recommendations from this study target transport providers, government and policy writers, health care services, health care professionals and other stakeholders. Five key recommendations from the project include:

- Increase use of alternatives to driving for current drivers and nondrivers
- Improve planning for driving cessation
- Improve the safety of older road users, both drivers and pedestrians
- Improve acceptability of driving cessation, by enhancing outcomes for retired drivers and increasing awareness of driving cessation
- Further develop a range of resources

### 5.1 Increase use of alternative transport for older drivers and nondrivers

In this study, the profiles of transport use differed between current driver, retired drivers and those who had never driven. The reasons for use and non-use were also investigated. Poor awareness of and lack of acceptable transport options were major deterrents to older people considering driving cessation. Current drivers relied heavily on cars as their primary form of transport and were often unaware of and inexperienced in the use of alternative transport. Retired drivers may have health and mobility concerns that do not allow easy access to public transport. There is evidence that some older people with disabilities may be safer driving than attempting to use alternatives (Organisation for Economic Cooperation and Development, 2001). Understanding attitudes towards transport alternatives, improving service provision, and supporting and educating older people will be required to increase the use of alternative transport. The need for continued community integration in older age has been well documented and is regarded by the World Health Organisation as the primary means of accessing health and social resources, preventing isolation and promoting networks within the community (Cvitkovich & Wister, 2001).

Approaches to increasing use of alternative transport include:

- Increase the awareness of alternative options to driving
- Address the perceived barriers to alternative transport use for older people
- Fund education and support programs to assist older people to learn to use alternatives

#### 5.1.1 Public Transport

There are a number of issues associated with public transport use for older people. In this study, retired drivers reported that difficulty accessing public transport was their primary reason for not using this form of transport. Medical conditions and changes associated with ageing that may prompt an older person to cease driving can also cause difficulties with accessing public transport. Key themes that emerged were distance to the nearest bus stop and difficult terrain. Many older people perceived that public transport was not available within an accessible distance to their homes. Terrain was a concern in terms of access to public transport stops and using public transport safely (e.g. boarding and disembarking trains/buses). Older pedestrians are more likely to be



involved in pedestrian-motor vehicle accidents, and therefore are at greater risk of injury when walking to public transport. Falls risk within the community and personal safety concerns are other issues that can limit older people's use of public transport. .

Recommendations include:

- Ensure that the distances to public transport stops are reasonable for older people. For example, TransLink in South-East Queensland aims to have no more than a 400m walk to access public transport for the majority of residents in the Brisbane area.
- Consider the terrain to promote access to public transport stops (place stops appropriately, for example, with respect to hills and provide appropriate walkways).
- Provide outdoor mobility training and community falls prevention education for older people and ensure pedestrian infrastructure employs falls prevention principles.
- Ensure adequate lighting is available for pedestrian access to reduce falls and improve personal safety.
- Use flexible transport systems (e.g. a door-to-door drop off service at night on bus lines, small feeder buses to connect with larger bus routes).
- Educate older people about strategies to enhance pedestrian and personal safety.

Convenience was also a major reason that participants in this study did not use public transport. When older people described the difficulties they had with driving cessation, many focussed on the loss of convenience that driving had previously offered them. Recommendations for public transport include:

Future research could investigate and evaluate some of the emerging systems of transportation becoming available internationally. Innovative systems providing flexibility and door-to-door service as well as enabling spontaneity are being developed. In the United States, where public transport service provision is undertaken by private organisations, the potential market of older passengers is being targeted. Organisations are being encouraged to provide services that meet the needs and preferences of older people to gain a lucrative clientele. Short-term strategies such as using technology to improve reliability of schedule information, providing training for drivers and improving physical access to stops and stations have been identified. Longer-term strategies include the development of "shared-ride, demand-responsive" systems where destinations, timing and access are determined by the request of passengers. A report detailing this information for the United States transport system has been published by the Transit Cooperative Research Program and is available online ([http://trb.org/news/blurb\\_detail.asp?id=1162](http://trb.org/news/blurb_detail.asp?id=1162)).

The development of local, flexible transport services and systems to supplement the public transport system is another approach to improving outcomes for older people. Services that use shared minibuses or maxi-taxis to regular destinations (e.g. shopping centres) are becoming more common. In general these services are able to provide an inexpensive door-to-door service within a specified catchment area. Many require booking some days ahead and run once or twice a week. Some areas are increasing the scope of these types of services; for example the Dial-A Ride service available in Gawler, South Australia, takes passengers door-to-door within the local area for a minimal fee and only requires one hour booking time (<http://www.adelaidemetro.com.au/guides/dial-a-ride.html>). Internationally, services using private vehicles, volunteers, business sponsorship and computerised booking systems are enabling people to access transport services 24 hours a day. The Independent Transport Network available in Maine in the United States has provided a model for service development to meet the transport needs of older people (<http://www.itninc.org>).



Recommendations for public transport include:

- Have regular transport times (e.g. hourly).
- Provide appropriate routes to meet the needs of older people, i.e. transport across suburbs and to major shopping and medical destinations, rather than transport primarily focussed on city-suburban routes.
- Develop and use flexible transport systems e.g. Dial-a-Ride mini-bus services (as above).

### **5.1.2 Private transport and transport services**

Alternative transport should also be considered as options for older people. Some participants in this study used taxis and lifts from family and friends. However, on the whole, taxis were considered to be expensive and some perceived lifts from family and friends to be inconvenient, inaccessible and a threat to their independence. Older non-drivers who are socially isolated may have neither family nor friends to offer this service.

Other forms of alternative transport, such as volunteer drivers, community services and HACC funded transport were used more frequently by retired drivers than by other groups, although the proportion of the sample using these forms of transport was relatively small. Due to the small number of eligible people who knew about and used these services, it was difficult to determine reasons for use and non-use. It may be postulated that lack of knowledge about these options, combined with the difficulty people can have using them, in terms of waiting lists and eligibility, may limit the ability of current transport services to meet the needs of retired drivers.

Recommendations for alternative transport include:

- Improve services for alternative transport by reducing waiting times and widen eligibility.
- Improve public knowledge of these services.
- Encourage trials of alternatives while people are still driving.
- Promote these services as an attractive alternative to driving.

## **5.2 Improve planning for driving cessation**

Older people often viewed driving cessation very negatively. Themes of loss of freedom, independence, and valued roles were common. For older people, driving cessation can be viewed as an unattractive option signalling the final phase of life. They may also lack knowledge about how age affects driving and how to successfully maintain their lifestyle after driving cessation (e.g. being knowledgeable about alternative transport options). Alternative transport options currently do not always meet the needs of retired drivers and this may deter people from giving up driving. This combination of factors means that older people may have difficulty making an objective decision regarding their own ability to drive. Recommendations for increasing awareness and planning include:

- Improve the media representation of retired drivers.
- Provide attractive and acceptable transport alternatives to driving.
- Increase the awareness of driving cessation issues and successful transition strategies through education campaigns and awareness raising talks/brochures.

- Encourage planning for driving cessation by providing awareness raising talks that discuss planning strategies and transport alternatives.
- Link transport planning with other planning and health care initiatives (e.g. link transport planning and retirement planning, provide education and training to health professionals to enable them to assist people with transport planning for the future).

### **5.3 Improve the safety of older road users**

Historically the focus on older road users has been to document the risks that older drivers pose and face in continuing to drive (Evans, 2000; Federal Office of Road Safety, 1996). More limited attention has focussed on the safety issues surrounding alternatives to driving. Personal safety and security, including road safety, continue to be concerns for older people (Coughlin, 2001; Ragland, Satarinano, & MacLeod, 2004). Findings in this as well as other studies indicate that some drivers may choose to continue to drive due to their concern about the safety of using other options, particularly at night (Golant, 1984; Ragland et al., 2004). These concerns include fear of crime in public places while attempting to use public transport, and concerns about falling or being bumped while walking or using public transport (Golant, 1984; Tulloch, 2000). This study indicated that access was a barrier to older people using public transport. As use of public transport options usually require walking at each end of the trip, concerns about the safety of older people as pedestrians is warranted (Australian Transport Safety Bureau, 2002). To address safety issues for older road users, recommendations include:

- Focus some education and awareness campaigns around the relative risks for road users other than drivers.
- Provide information and practical exercises to help older people enhance their safety with alternative transport.
- Improve the local environment for pedestrian safety.

### **5.4 Improve acceptability of driving cessation by enhancing outcomes for retired drivers and increasing awareness of driving cessation**

Driving cessation is associated with negative lifestyle outcomes. Current drivers appear aware of these, but not of potentially neutral or positive outcomes. Protecting the lifestyle of retired drivers and improving awareness of driving cessation as a normal part of life may reduce the current fear and stigma associated with this process. Intensive programs to support older people during the process of driving cessation would assist in maintaining lifestyles. In addition reviewing the transport availability to better cater for older people, addressing the concerns expressed by current drivers, and providing support to key people would improve outcomes.

Recommendations include:

- Provide interventions for older people during driving cessation who may be at risk of poor outcomes (e.g. group program to assist older people to adjust to driving cessation) provided by a health professional with training to assist with transitions and coping with loss and change.
- Provide resources for health professionals and older people themselves to assist in the transition to driving cessation (e.g. Retired Drivers' Handbook, website).

- Evaluate the short and long-term effectiveness of these resources.
- Improve transport accessibility as per point 4.1
- Improve planning as per point 4.2

## **5.5 Further develop a range of resources**

The results of this study indicated that a range of written and face-to-face resources, supported by a website, would be acceptable to older people, family members and service providers. Attention was given to the preferences and needs of older people in the development of these resources, and reference groups have expressed general satisfaction with both their content and presentation. As the resources require local information regarding regulations and transport availability, the ability to amend and transfer the developed resources to other locations would need to be investigated. The effectiveness of these resources for improving the outcomes of older drivers needs to be determined. Further funding would therefore be required to:

- Evaluate the effectiveness of the resources for various populations (eg. metropolitan, rural).
- Publish and disseminate the resources for general use.
- Provide training for health professionals to enable the intensive group program to be run in a number of different settings.

This study investigated issues for older road users, with a focus on examining the transition from driving cessation to safe transportation. Exploration of transport use, outcomes, expectations and resource preferences for older people involved the participation of older current drivers, retired drivers and people who have never driven. A range of resources were developed and evaluated preliminarily by reference groups of older people, family members and health professionals. This study indicated that attention is needed to improve the safety and well being of older people retiring from driving. Recommendations about alternatives to driving, planning for driving cessation, improving safety of older road users, improving acceptability of driving cessation and further developing a range of resources to assist with the driving cessation process were made. Approaches to improving outcomes for older people who retire from driving will need to involve transport agencies, industry and community groups in the development of alternative transport options, and road safety and health professionals providing support to older people during the transition to driving cessation.

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## APPENDIX A

### The Influence of Various Factors on Driving Cessation Outcomes

Outcome	Driving status significant (F, Wald or chi square scores)			Other significant variables	Profile (associated with higher scores)
	Overall	Current vs Retired	Retired vs Never driven		
<b>Occupational Roles</b>  Number of present roles	$p = 0.002^{**}$ $F_{(2)} = 6.6$	$p < 0.0001^{**}$	$p = 0.091$	IADL status $p < 0.0001^{**}$ $F_{(1)} = 14.45$ Health status $p < 0.0001^{**}$ $F_{(1)} = 12.92$ Gender $p = 0.037^*$ $F_{(1)} = 4.40$ Living situation $p = 0.045^*$ $F_{(1)} = 4.06$	<ul style="list-style-type: none"> <li>independent in IADLs</li> <li>higher number of health conditions</li> <li>female</li> <li>living with someone</li> <li>current driver (followed by never driven)</li> </ul>
Number of very valuable roles	$p = 0.048^*$ $F_{(2)} = 3.1$	$p = 0.015^*$	$p = 0.115$	Health status $p = 0.001^{**}$ $F_{(1)} = 11.35$ IADL status $p = 0.004^{**}$ $F_{(1)} = 8.53$ Living situation $p = 0.016^*$ $F_{(1)} = 5.94$	<ul style="list-style-type: none"> <li>higher number of health conditions</li> <li>independent in IADLs</li> <li>living with someone</li> <li>current driver (followed by never driven)</li> </ul>
Participation in worker role	$p = 0.33$	$p = 0.14$ $\chi^2_{(1)} = 2.2$	$p = 0.26$ $\chi^2_{(1)} = 1.3$	Living situation $p = 0.035^*$ $\chi^2_{(1)} = 4.45$ Interaction between IADL status and driving status	<ul style="list-style-type: none"> <li>living with someone</li> <li>If independent in IADL, being a current driver (followed by never driven), if not independent no relationship</li> </ul>
Participation in volunteer role	$p = 0.018^*$	$p = 0.005^{**}$ $\chi^2_{(1)} = 7.9$	$p = 0.059$ $\chi^2_{(1)} = 3.6$	IADL status $p = 0.009^{**}$ $\chi^2_{(1)} = 6.92$ Health status $p = 0.031^*$ $\chi^2_{(1)} = 4.67$	<ul style="list-style-type: none"> <li>Independent in IADLs</li> <li>Higher numbers of health conditions</li> <li>Current driver (followed by never driven)</li> </ul>

Participation in carer role	$p = 0.14$	$p = 0.05^*$ $\chi^2_{(1)} = 3.7$	$p = 0.48$ $\chi^2_{(1)} = 0.50$	health status $p = 0.003^{**}$ $\chi^2_{(1)} = 9.09$ living situation $p = 0.007^{**}$ $\chi^2_{(1)} = 7.20$ IADL status $p = 0.023^*$ $\chi^2_{(1)} = 5.17$	<ul style="list-style-type: none"> <li>• Have higher number of health conditions</li> <li>• Living with someone</li> <li>• Independent in IADL</li> <li>• Current driver (followed by never driven)</li> </ul>
Participation in home maintainer role	$p = 0.60$	$p = 0.43$ $\chi^2_{(1)} = 0.6$	$p = 0.77$ $\chi^2_{(1)} = 0.09$	IADL status $p = 0.007^{**}$ $\chi^2_{(1)} = 7.38$ gender $p = 0.025^*$ $\chi^2_{(1)} = 5.02$ Interaction between IADL status and driving status	<ul style="list-style-type: none"> <li>• Independent in IADL</li> <li>• Female</li> <li>• If independent in IADL, weak association with driving status (all roughly equal); if dependent, then current driver (followed by never driven)</li> </ul>
Participation in family member role	$p = 0.032^*$	$p = 0.009^{**}$ $\chi^2_{(1)} = 6.7$	$p = 0.62$ $\chi^2_{(1)} = 0.24$	gender $p = 0.005^{**}$ $\chi^2_{(1)} = 7.97$ health $p = 0.032^*$ $\chi^2_{(1)} = 4.59$	<ul style="list-style-type: none"> <li>• Female</li> <li>• Higher number of health conditions</li> <li>• Current driver (followed by never driven)</li> </ul>
Participant in organisations role	$p = 0.066$	$p = 0.022^*$ $\chi^2_{(1)} = 5.2$	$p = 0.42$ $\chi^2_{(1)} = 0.65$	health status $p = 0.007^{**}$ $\chi^2_{(1)} = 7.32$ interaction between IADL status and driving status	<ul style="list-style-type: none"> <li>• Higher number of health conditions</li> <li>• If independent in IADL, all driving conditions roughly equal, if dependent, current driver (followed by never driven)</li> </ul>
<b>Time Use</b>	$p = 0.19$	$p = 0.08$	$p = 0.68$	-	
Time in ADL	$F_{(2)} = 1.7$				
Time in IADL	$p = 0.37$ $F_{(2)} = 1.0$	$p = 0.17$	$p = 0.67$	gender $p < 0.001^{**}$ $F_{(1)} = 19.31$ ADL status $p = 0.004^{**}$ $F_{(1)} = 8.41$	<ul style="list-style-type: none"> <li>• Female</li> <li>• Independent in ADL</li> </ul>
Time in paid work	$p = 0.18$	$p = 0.34$ $\chi^2_{(1)} = 0.92$	$p = 0.31$ $\chi^2_{(1)} = 1.0$	age $p = 0.024^*$ $\chi^2_{(1)} = 5.09$	<ul style="list-style-type: none"> <li>• Younger</li> </ul>

Time in volunteer work	$p = 0.02^*$	$p = 0.019^*$ $\chi^2_{(1)} = 5.5$	$p = 0.009^{**}$ $\chi^2_{(1)} = 6.7$	-	<ul style="list-style-type: none"> <li>Never driven, followed by current drivers</li> </ul>
Time in study	$p = 0.50$	$p = 0.28$ $\chi^2_{(1)} = 1.2$	$p = 0.75$ $\chi^2_{(1)} = 0.1$	-	
Time in caring	$p = 0.66$	$p = 0.40$ $\chi^2_{(1)} = 0.71$	$p = 0.77$ $\chi^2_{(1)} = 0.08$	-	
Time in health care	$p = 0.61$	$p = 0.46$ $\chi^2_{(1)} = 0.56$	$p = 0.89$ $\chi^2_{(1)} = 0.17$	ADL status $p = 0.046^*$ $\chi^2_{(1)} = 3.97$	<ul style="list-style-type: none"> <li>Dependent in ADL</li> </ul>
Time in social leisure	$p = 0.004^{**}$ $F_{(2)} = 5.7$	$p = 0.002^{**}$	$p = 0.54$	-	<ul style="list-style-type: none"> <li>Current driver (followed by never driven)</li> </ul>
Time in solitary leisure	$p = 0.001^{**}$ $F_{(2)} = 7.3$	$p = 0.0001^{**}$	$p = 0.41$	living situation $p = 0.005^{**}$ $F_{(1)} = 8.02$	<ul style="list-style-type: none"> <li>Live alone</li> <li>Retired driver (followed by never driven)</li> </ul>
Time in transport	$p = 0.19$	$p = 0.07$ $\chi^2_{(1)} = 3.2$	$p = 0.46$ $\chi^2_{(1)} = 0.55$	age $p = 0.024^*$ $\chi^2_{(1)} = 5.10$	<ul style="list-style-type: none"> <li>younger</li> </ul>
Time in sleep	$p = 0.63$ $F_{(2)} = 2.4$	$p = 0.53$	$p = 0.41$	living situation $p = 0.037^*$ $F_{(1)} = 4.40$	<ul style="list-style-type: none"> <li>live with someone</li> </ul>
Time in rest	$p = 0.27$	$p = 0.13$ $\chi^2_{(1)} = 2.3$	$p = 0.19$ $\chi^2_{(1)} = 1.7$	age $p = 0.01^{**}$ $\chi^2_{(1)} = 6.55$ health status $p = 0.03^*$ $\chi^2_{(1)} = 4.63$	<ul style="list-style-type: none"> <li>older</li> <li>more health conditions</li> </ul>
Time in spiritual	$p = 0.40$ $F_{(2)} = 1.1$	$p = 0.20$	$p = 0.73$	ADL status $p = 0.049^*$ $\chi^2_{(1)} = 3.89$	<ul style="list-style-type: none"> <li>independent in ADL</li> </ul>
Time with other people	$p = 0.73$	$p = 0.66$ $\chi^2_{(1)} = 0.19$	$p = 0.43$ $\chi^2_{(1)} = 0.64$	-	
Time away from home	$p < 0.0001^{**}$ $F_{(2)} = 12.3$	$p < 0.0001^{**}$	$p = 0.37$	health status $p = 0.036^*$ $F_{(1)} = 4.47$	<ul style="list-style-type: none"> <li>fewer health conditions</li> <li>current driver (followed by never driven)</li> </ul>
Episodes away	$p = 0.32$	$p = 0.28$	$p = 0.78$	-	

from home		$\chi^2_{(1)} = 1.2$	$\chi^2_{(1)} = 0.08$		
Satisfaction with time use	$p = 0.45$	$p = 0.53$ $\chi^2_{(1)} = 0.3$	$p = 0.58$ $\chi^2_{(1)} = 0.31$	-	
Satisfaction with time away from home	$p = 0.10$	$p = 0.24$ $\chi^2_{(1)} = 1.4$	$p = 0.39$ $\chi^2_{(1)} = 0.75$	-	
Satisfaction with time with others	$p = 0.76$	$p = 0.65$ $\chi^2_{(1)} = 0.2$	$p = 0.75$ $\chi^2_{(1)} = 0.11$	-	
<b>Life satisfaction</b>	$p = 0.016^*$ $F_{(2)} = 4.2$	$p = 0.01^{**}$	$P = 0.83$	-	<ul style="list-style-type: none"> <li>current driver (followed by never driven)</li> </ul>
<b>Self Esteem</b>	$p = 0.88$ $F_{(2)} = 0.1$	$p = 0.77$	$P = 0.85$	-	-
<b>Depression</b>	$p = 0.82$	$p = 0.98$ $\chi^2_{(1)} = 0.01$	$P = 0.61$ $\chi^2_{(1)} = 0.26$	living situation $p = 0.009^{**}$ $\chi^2_{(1)} = 6.79$	<ul style="list-style-type: none"> <li>live alone</li> </ul>
<b>Health related quality of life</b> Physical component score	-	$p = 0.82$ $F_{(1)} = 0.05$	$P = 0.67$ $F_{(1)} = 0.20$	health $p < 0.0001^{**}$ $F_{(1)} = 9.10$ ADL status $p < 0.0001^*$ $F_{(1)} = 16.61^*$ IADL status $p < 0.0001^{**}$ $F_{(1)} = 10.89$ living situation $p = 0.005^{**}$ $F_{(1)} = 8.20$	<ul style="list-style-type: none"> <li>Fewer health conditions</li> <li>Independent in ADL</li> <li>Independent in IADL</li> <li>Live with someone</li> </ul>
Mental component score	$p = 0.55$ $F_{(2)} = 0.6$	$p = 0.70$	$P = 0.53$	-	-
<b>Transport</b> Nondiscretionary travel – frequency of trips to the doctor.	$p = 0.037^*$	$p = 0.88$ $\chi^2_{(1)} = 0.02$	$p = 0.039^*$ $\chi^2_{(1)} = 4.28$	health $p = 0.003^{**}$ $\chi^2_{(1)} = 8.89$	<ul style="list-style-type: none"> <li>More health conditions</li> <li>Never driven, (followed by retired driver)</li> </ul>
Discretionary travel – frequency of trips for social and leisure	$p = 0.008^{**}$	$p = 0.05^*$ $\chi^2_{(1)} = 3.8$	$p = 0.30$ $\chi^2_{(1)} = 1.08$	IADL status $p = 0.006^{**}$ $\chi^2_{(1)} = 7.67$	<ul style="list-style-type: none"> <li>Independent in IADL</li> <li>Current driver (followed by never driven)</li> </ul>
Use of transport	$p =$	$p =$	$p = 0.75$	health status $p =$	<ul style="list-style-type: none"> <li>More health conditions</li> </ul>

services	0.047*	0.023* $\chi^2_{(1)} = 5.1$	$\chi^2_{(1)} = 0.1$	0.015* $\chi^2_{(1)} = 5.45$ age $p = 0.02^*$ $\chi^2_{(1)} = 5.81$	<ul style="list-style-type: none"> <li>older</li> <li>Retired driver (followed by never driven)</li> </ul>
Use of walking as transport	$p = 0.016^*$	$p = 0.01^{**}$ $\chi^2_{(1)} = 6.7$	$p = 0.66$ $\chi^2_{(1)} = 0.2$	-	<ul style="list-style-type: none"> <li>Never driven (followed by retired driver)</li> </ul>
Use of taxis	$p = 0.001^{**}$	$p = 0.009^*$ $\chi^2_{(1)} = 6.8$	$p = 0.056$ $\chi^2_{(1)} = 3.6$	presence of another driver in the household $p = 0.006^{**}$ $\chi^2_{(1)} = 7.64$	<ul style="list-style-type: none"> <li>No other driver in household</li> <li>Retired driver (followed by never driven)</li> </ul>
Use of public transport	$p = 0.045^*$	$p = 0.075$ $\chi^2_{(1)} = 3.2$	$p = 0.72$ $\chi^2_{(1)} = 0.13$	ADL status $p = 0.041^*$ $\chi^2_{(1)} = 4.19$ IADL status $p = 0.018^*$ $\chi^2_{(1)} = 5.58$ age $p = 0.017^*$ $\chi^2_{(1)} = 5.66$	<ul style="list-style-type: none"> <li>Independent in ADL</li> <li>Independent in IADL</li> <li>Younger</li> <li>Never driven (followed by current drivers)</li> </ul>
Use of private transport	$p < 0.0001^{**}$	$p = 0.003^{**}$ $\chi^2_{(1)} = 8.6$	$p = 0.095$ $\chi^2_{(1)} = 2.8$	gender $p = 0.01^{**}$ $\chi^2_{(1)} = 6.55$ health status $p = 0.008^{**}$ $\chi^2_{(1)} = 7.09$ presence of another driver in the household $p = 0.05^*$ $\chi^2_{(1)} = 3.74$ interaction between driving status, gender, health, presence of another driver, and IADL status	<ul style="list-style-type: none"> <li>Female</li> <li>More health conditions</li> <li>Another driver in household</li> <li>Never driven (followed by retired driver)</li> <li>If more health conditions, retired drivers more likely to use than never driven</li> <li>For retired drivers, weak association with gender (both equally likely to use)</li> <li>For never driven, weak association with presence of driver in household (equally likely to use if they don't coreside)</li> <li>For current drivers, IADL status has weak association.</li> </ul>

<b>Attitudes towards private transport (family)</b> Convenience	$p < 0.0001^{**}$ $\chi^2_{(4)} = 34.92$	$p < 0.0001^{**}$ $\chi^2_{(2)} = 22.75$	$p = 0.981$ $\chi^2_{(2)} = 0.038$	Not tested	<ul style="list-style-type: none"> <li>Reason for using family transport for retired driver and never driven</li> <li>Reason for not using for current drivers</li> </ul>
Social reasons	$p < 0.0001^{**}$ $\chi^2_{(4)} = 22.06$	$p < 0.0001^{**}$ $\chi^2_{(2)} = 14.14$	$p = 0.535$ $\chi^2_{(2)} = 1.25$	Not tested	<ul style="list-style-type: none"> <li>Reason for using family transport for never driven, then retired driver</li> <li>Rarely reported by current drivers</li> </ul>
Access	$p = 0.001^{**}$ $\chi^2_{(4)} = 18.40$	$p = 0.001^{**}$ $\chi^2_{(2)} = 14.47$	$p = 0.284$ $\chi^2_{(2)} = 2.52$	Not tested	<ul style="list-style-type: none"> <li>Reason for using family transport retired driver, never driven</li> </ul>
<b>Attitudes towards public transport (buses)</b> Convenience	$p < 0.0001^{**}$ $\chi^2_{(4)} = 43.45$	$p < 0.0001^{**}$ $\chi^2_{(3)} = 29.85$	$p = 0.204$ $\chi^2_{(3)} = 4.59$	Not tested	<ul style="list-style-type: none"> <li>Reason for using buses for never driven, then retired drivers</li> <li>Reason for not using buses for current drivers, then retired drivers</li> </ul>
Access	$p < 0.0001^{**}$ $\chi^2_{(4)} = 46.24$	$p < 0.0001^{**}$ $\chi^2_{(3)} = 31.28$	$p = 0.157$ $\chi^2_{(3)} = 3.71$	Not tested	<ul style="list-style-type: none"> <li>Reason for using buses never driven</li> <li>Reason for not using buses retired drivers, then never driven</li> </ul>
<b>Attitude towards taxi use</b> Convenience	$p < 0.0001^{**}$ $\chi^2_{(4)} = 69.94$	$p < 0.0001^{**}$ $\chi^2_{(2)} = 53.40$	$p = 0.224$ $\chi^2_{(2)} = 2.99$	Not tested	<ul style="list-style-type: none"> <li>Reason for using taxi for retired drivers, then never driven</li> <li>Reason for not using taxis for current drivers</li> </ul>
Financial reasons	$p = 0.100$ $\chi^2_{(4)} = 7.79$			Not tested	<ul style="list-style-type: none"> <li>Same for each group</li> </ul>
Access	$p < 0.0001^{**}$ $\chi^2_{(4)} = 20.48$	$p < 0.0001^{**}$ $\chi^2_{(2)} = 18.53$	$p = 0.665$ $\chi^2_{(2)} = 0.82$	Not tested	<ul style="list-style-type: none"> <li>Reason for using taxis for retired drivers, never driven</li> </ul>

\* weak relationship ( $p = 0.015-0.05$ )

\*\* significant relationship ( $p \leq 0.01$ )

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## APPENDIX B

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### Groups

Of those who thought that a program would assist them in giving up driving, over 40% felt that a group program would be useful and more than 20% felt that a talk would be useful. Both a group program, taking the form of a discussion group, and a talk with a guest speaker were discussed by older people as options.

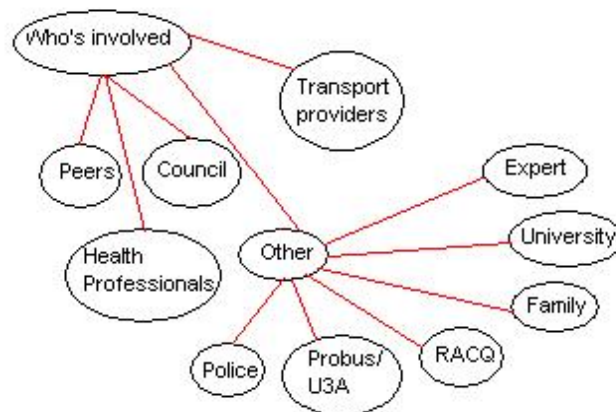
A large number of participants (48 participants) stated that a guest speaker should be included in the program. A variety of people were expected to be involved as guest speakers, including health professionals, peers and council members, who will be discussed below.

Some participants felt that access to a discussion group or talk could be problematic. Eight participants stated that they would go to a program *“if I could get there”*, but reported that *“people would find it hard to get to a group”*. Location, access and alternatives (e.g. post/TV/radio) need to be considered when designing a program for people giving up driving.

In terms of group programs, two main structures were offered by participants; a small group discussion and a guest speaker. Nine participants offered the specific suggestion that discussion groups should be kept small as *“people will feel safer in a small group, will have a better response and will be less threatened”*. It is important to *“keep [the numbers] down so people feel they are considered, treated like people not numbers. Communication is the name of the game”*.

### Who should be involved?

Participants offered a variety of suggestions on who should be involved in a program to help older people adjust to driving sensation. The four primary groups discussed were peers, health professionals, council/government and people providing transport services.



Participants recognised that peers should be involved in the program. Many participants (32 participants) were more generic in describing which peers should be involved in the program, including both *“retired and current drivers”*. Actively involving peers means that *“they can exchange experiences and learn off one another”*.

While peers can be involved in the program as consumers, they can also be involved in the capacity of role models and guest speakers. Eleven participants stated that a retired person could be involved as a *“role model; someone who has lost their licence for years and can provide an example”* and who have *“been through the same situation”*.

Health professionals were also expected to be involved. Seven participants felt that doctors should be involved as *“they are the first port of call for people who are unwell”*. A preventative approach to maintaining health was suggested by one participant *“I think that the medical profession should have something to do with it as well. If people get out more I think they’re healthier. If people can do more things they’re going to be happier and healthier in the long run.”* Fourteen participants also described other health professionals that could be involved, including occupational therapists, social workers, physiotherapists and psychologists.

Council and government involvement was also suggested (27 participants). Seven participants expected that their local member would be involved as a guest speaker. Many participants felt that guest speakers from the council should attend to inform older people about local services and to respond to feedback from older people. For example, *“They’d have to have someone there from the Brisbane City Council talking about buses. There should be someone to listen to what older people are saying without having preconceptions. It should be someone from state government. And they’ve got to not put it on the backburner ‘because it’s too hard’”*.

Participants were also interested in having transport service providers as guest speakers. Sixteen participants thought that a representative from the Department of Transport could be involved. This representative could offer information on what transport services are available and how to access them. Fourteen participants wanted to hear from other transport service providers, including HACC, volunteer driver groups, bus companies/drivers and taxi drivers.

Other suggestions that were offered include the police, organisations, RACQ, family and universities.

Overall, it was proposed that guest speakers should be experts who are *“well versed in all problems associated with the area”* and *“well versed in all options”*.

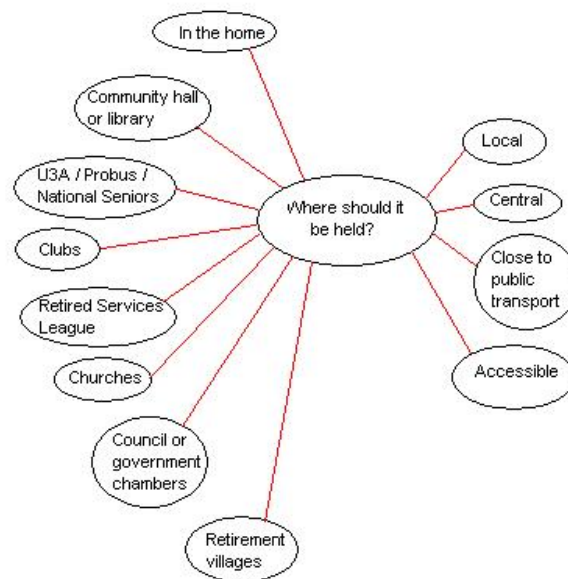
### **How long should it go for?**

In terms of length of the program and talk, two different structures were suggested. The majority of people said that it should only be a single session (15 participants) and that it should only take up to a maximum of 2 hours (51 participants). One participant felt that the program should go for 4 hours.

The second structure that was described (by 31 participants) included multiple sessions. These participants felt strongly that it should be at least 2 sessions and the majority said that it should run weekly for between 2 to 6 weeks. Others said that programmes and talks should be run continually as needed, for example *“cyclically – it should come out every so often”*. Five participants felt that it should go on *“as long as it takes”*.



## Where should it be held?



Participants had a variety of suggestions for where a program should be run. These include meetings like U3A, Probus and National Seniors (10 participants), churches (7 participants), retired service league buildings (9 participants), retirement villages (7 participants), council or government chambers (7 participants), in the home (4 participants) and leisure and hobby clubs (10 participants). The majority of participant (51 participants) mentioned a community hall or library as a place to hold a program.

Some sub-themes that were identified included that the venue should be local (30 participant), central (9 participants), close to public transport (10 participants) and accessible (14 participants). Conversely, a small number of participants (6 participants) felt that it should be held in the city. Being close to public transport and accessibility were other strong themes. A larger proportion of retired drivers (compared to current drivers) mentioned these themes, which reflects the current personal transport situation that they face.

## Written Resources

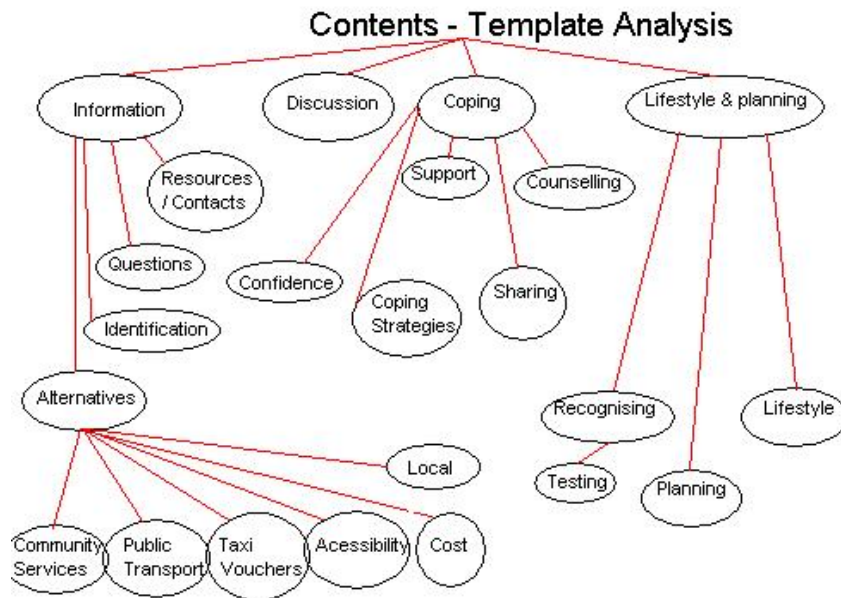
Written resources were also a popular form of information dissemination according to the older people interviewed. In the quantitative analysis, 57% of participants said that a brochure would be useful. In the qualitative analysis, 27 participants noted that written information should be part of a program. Four participants felt that written material was not appropriate due primarily to the incidence of visual impairment in the older population “*a brochure is useless due to poor eyesight*”.

## Other resources

Other resources that were suggested included a telephone hotline (6 participants), television or radio (5 participants) and the internet/email (4 participants). In the quantitative analysis, 26% of respondents felt that a telephone hotline would be useful, 16% felt that a website would be useful and 38% felt that information should be given by a treating health professional. Therefore, resources should not only aim at educating older people, but also health professionals, regarding the issues surround driving cessation.

## Content

Participants were asked what a hypothetical program to assist older people with driving cessation should contain. For major themes emerged: information, discussion, coping, and lifestyle and planning.



## Information

Information about driving cessation was the most sought after content for a hypothetical program. Information on alternative transport, the chance to ask questions, information on resources and contacts and information on alternative forms of identification were sought.

Seventy-six participants mentioned that transport alternatives, what options there are and their availability should be included in the program. There should be *“someone to give you the alternatives and all the things you haven’t thought of”* and more specifically, seven participants stated that it should be *“information to suit local transport in your area”*. They need to know about *“alternatives for transport from A to B; telephone guidance, information about volunteer services, subsidies, etc.”* Six sub-themes of transport alternatives emerged: community services, public transport, taxi vouchers, cost, accessibility and local relevance.

Information on public transport was mentioned by 19 participants. Older people need to know *“where they can get can get timetables and concessions available (buses, taxis, trains, ferries)”* and *“explanations, maps and timetables of available routes and costs of public transport”*.

Cost (13 participants), accessibility (3 participants) and local relevance were brought up as three issues that need to be considered when discussing transport alternatives such as public transport and community services. Interestingly, it was only current drivers who mentioned that they would want to know about transport costs. Alternative transport is often cheaper than maintaining and driving a car. Therefore, this may reflect a lack of knowledge amongst current drivers regarding the financial viability of driving cessation, which may bias their decision to keep driving or give up driving.

Three participants suggested information on taxi vouchers should be part of the program’s content, including an explanation of what they are and eligibility *“because [I] panic in crush situations (PTSD) and can’t uses buses or trains.”*

Another theme that emerged was the importance of being able to ask questions during a group or talk (8 participants). Not only is it important to receive information, *“but you need to be able to ask questions”*. This could be incorporated as a question and answer session as described above. In addition, four participants felt that it was important to include resources and contacts where older people could seek further information.

Three retired drivers also mentioned that they wanted to know about different forms of identification, as they no longer had a driver's licence. This was a theme that emerged during earlier research and shows that driving cessation is not only about giving up driving, but also about giving up a licence.

## **Discussion**

Twenty participants mentioned the importance of providing opportunities for discussion to enable participants in a program to explore issues surrounding driving cessation, for example transport issues.

## **Coping**

Helping older people to cope with driving cessation was a major theme that emerged from the interviews. Seven participants mentioned that programs could be used to help older people develop coping strategies and assist people *“to come to terms with the situation”*.

Participants also thought that a program should involve the opportunity to share experiences (12 participants) and provide support (7 participants). Within a group older people can discover *“why others gave [driving] up, how they are getting on, and then you could give your own version”* and they can *“share helpful hints”*. As one participant stated, *“[It should give people a chance to] talk about it.. about not being able to drive and not being tested.”* Sharing stories can be a means of helping people deal with the issues and shared experiences they are facing.

A program can also be an avenue whereby people can seek support from their peers and from others involved. Three participants mentioned that a program could help people to build confidence. Five participants also mentioned that having counselling available could be useful.

## **Lifestyle and Planning**

Aspects of lifestyle and planning were also considered to be important parts of the program. Three sub-themes emerged: recognising when to stop driving, planning for driving retirement and changing your lifestyle.

Eight participants commented that a program could assist people to recognise when they should give up driving. Some people *“don't realise they're a menace; I'm not sure, [it's a] very touchy subject.. they can't see they're not capable”*. *“It should contain reasons you should give up driving and how to recognise the fact that you are having reduced abilities and reactions”* and *“eye sight, reaction speed and decreased alertness should all be explained”*. Three participants who had retired from driving for over 10 years mentioned that a program could be an avenue to provide practical on-road testing for older drivers.

Coupled with the decision of giving up driving is planning the process (4 participants). The program should enable people to *“think about the future, even though people don't think it will happen; preparation for giving up [driving and] looking after mental and physical health”*. It allows people to explore the question *“what will happen to me if...?”*.

Nine participants also mentioned that a program could be used to help people adjust to a new lifestyle, while continuing to be involved in the community. Changes in lifestyle can be viewed positively, as *“[retired drivers] adjust to another stage of life... not the end of life, just another phase”*.

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## APPENDIX C

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### Demographic Questionnaire

ID number: \_\_\_\_\_

Current identification used (eg licence, seniors card):

\_\_\_\_\_  
(note type, restrictions, expiry date, note age)

1. Gender Male/Female
2. Age Years at last birthday \_\_\_\_\_
3. Marital status: Married/current relationship  
Widowed  
Divorced/separated  
Single/never married
4. Years of education  
Never went to school  
Primary school (grade 1-7/8)  
Completed junior  
Completed senior  
Apprenticeship/other trade qualification  
Completed tertiary education  
Other \_\_\_\_\_  
Total number of years of education \_\_\_\_\_
5. Current employment situation  
Employed full time  
Employed part time  
Volunteer work  
Retired  
Home duties  
Carer  
Other \_\_\_\_\_
6. Occupation/Past occupation? (If more than one, main occupation)  
\_\_\_\_\_
7. Current living situation : Alone/Not alone
8. Household members Nil  
Spouse/partner and/or children  
Other relative  
Carer/companion  
Residential facility  
Other \_\_\_\_\_  
Total number living with \_\_\_\_\_
9. Medical conditions: List current medical conditions  
\_\_\_\_\_  
\_\_\_\_\_

## Transport

1. Current driving status  
Do you consider yourself to be: current driver  
retired driver  
never been a driver (*if yes go to question 8*)
2. When did you attain your driver's licence? \_\_\_\_\_
3. Do you have a current driver's licence? \_\_\_\_\_
4. Do you have a car? \_\_\_\_\_
5. How regularly do you drive?                      Daily/Several times/week  
Less often than weekly  
Less often than monthly  
Never
6. When did you last drive? \_\_\_\_\_
7. How far from home do you drive? (trip of furthest distance in past 3 months)  
\_\_\_\_\_
8. How far from your home do you travel? (trip of furthest distance in past 3 months)  
\_\_\_\_\_
9. Other drivers in household                      Yes/No (Number if yes \_\_\_\_\_)
10. How do you access Drs appointments?  
Drive self  
Driven by family/friends  
Taxi  
Bus/Train  
Walk  
Community service –eg Veteran's Affairs  
Doctor visits home  
Other: \_\_\_\_\_
11. How often do you access Drs appointments?  
Daily/Several times/week  
Less often than weekly  
Less often than monthly  
Never
12. How do you access grocery shopping?  
Drive self  
Driven by family/friends  
Taxi  
Bus/Train  
Walk  
Community service –eg Veteran's Affairs  
Groceries are delivered – do not go to shops  
Other: \_\_\_\_\_
13. How often do you access grocery shopping?  
Daily/Several times/week

Less often than weekly  
Less often than monthly  
Never

14. How do you access leisure and social activities?

Drive self  
Driven by family/friends  
Taxi  
Bus/Train  
Walk  
Community service –eg Veteran’s Affairs  
Do not leave the home for leisure activities  
Other: \_\_\_\_\_

15. How often do you access leisure and social activities?

Daily/Several times/week  
Less often than weekly  
Less often than monthly  
Never

16. How often do you access the following transport options?

Transport Options	Daily/ several times per week	Less often than weekly	Less often than monthly	Rarely/ never	Reason Use	Reason Don't Use	Good service in your area (yes / no)
Public Transport							
Bus							
Train							
Taxi							
Other							
Private Transport							
Family							
Friends/Neighbours							
Other							
Transport Services							
DVA – medical transport							
Ambulance – non urgent medical transport							
HACC funded transport							
Therapy Centre transport							
Volunteer services							
Taxi vouchers							
Other							
<b>Reasons for Use (code from open response)</b> 1. physical access easy 2. convenience 3. safety 4. financial reasons 5. social reasons (independence, keeping up with friends) 6. environmental concerns 7. other (specify)				<b>Reasons for non-use (code from open response)</b> 1a) Physical access – distance 1b) Physical access – terrain, steps, etc. 2. less convenient than other options I have 3. safety concerns 4. financial reasons 5. social reasons (independence) 6. eligibility (not eligible for service) 7. did not know about it / haven't heard of it 8. organisational issues – e.g. waiting times, coordinating different services 9. don't need to (i.e. with medical transport)			

17. How satisfied are you with your current transport arrangements?

Very satisfied	Quite satisfied	Neither satisfied or dissatisfied	Quite dissatisfied	Very dissatisfied
5	4	3	2	1

18. Are you considering stopping driving?  
     No firm plan to stop driving, not intending to stop for at least 6 months  
     Still driving, but intending to stop in next few months  
     Have stopped driving for less than 6 months  
     Have stopped driving for 6 months or longer  
     Never driven  
     other, specify\_\_\_\_\_

19. Do you expect your mode of transportation to change in future? If so how?

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*no further questions for never driven, retired drivers to Q22*

### **For current drivers**

20. What does being a driver mean to you?

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21. Do you think giving up driving would change your life? If so how?

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*drivers go to Q26*

### **For retired drivers**

22. When did you cease driving? \_\_\_\_\_

23. Why did you cease driving? Indicate main reason

    Licence revoked  
     Health reasons  
     Financial reasons  
     Discomfort with driving  
     Family pressure  
     Other (please specify)\_\_\_\_\_

24. Was the process:

Sudden-----Gradual  
 Voluntary-----Involuntary

25. Who was involved in the process?

Myself only

Family

Friends

Doctor

Other: \_\_\_\_\_

26. What did being a driver mean to you?

\_\_\_\_\_

\_\_\_\_\_

27. Do you think giving up driving changed your life? If so, how?

\_\_\_\_\_

\_\_\_\_\_

### **For current and retired drivers**

28. Would you attend a program for people who are giving up driving?

Yes/no/don't know

29. What format should it take? *written, group, guest speakers, other*

\_\_\_\_\_

\_\_\_\_\_

30. What information should it contain? (content)

\_\_\_\_\_

\_\_\_\_\_

31. Where should it be held? (venue)

\_\_\_\_\_

\_\_\_\_\_

32. How long should it go for? \_\_\_\_\_

33. Who should be involved? \_\_\_\_\_

34. If you would prefer not to attend a program for people who are giving up driving, would you like to access information in any of the following ways:

Brochure/booklet

Telephone hotline

Website

Local doctor or health professionals

Other \_\_\_\_\_

Any other comments or details you would like to share?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_