Submission

No 36

DRIVER AND ROAD USER DISTRACTION

Organisation: Commission for Children and Young People

Name: Ms Megan Mitchell

Position: Commissioner

Date Received: 7/05/2012

NSW GOVERNMENT | Office of Communities
Commission for Children & Young People

Joint Standing Committee on Road Safety (Staysafe)
Parliament House
Macquarie St
Sydney NSW 2000

Dear Chair,

I write to make a submission to Staysafe's current Inquiry into Driver and Road User Distraction. The Commission for Children and Young People (The Commission), was established in 1999 as an independent statutory authority within Government under the *Commission for Children and Young People Act 1998*. The Commission has a mandate to promote the safety and wellbeing of children and young people in NSW and has a particular interest in the issue of child injury, including in a road environment.

The attached submission focuses on the way in which driver and road user distraction impacts upon children and young people within the context of their high rate of injury as novice drivers, cyclists and pedestrians. It notes that the developmental limitations of children and young people and their high uptake of technology such as hand-held electronic devices, makes them particularly vulnerable to the negative effects of distraction. While existing regulatory measures targeting novice drivers such as the peer passenger condition and the ban on mobile phone use are acknowledged, the Commission suggests that emphasis should be given to additional educational strategies to address the problem of distraction. This could include the integration of this issue into school road safety programs, instructional manuals for learner drivers and driver testing scenarios. The submission also highlights that police pursuit is a significant factor in distraction related crashes involving young drivers, including in crashes leading to injury and death, and calls for an urgent review of this practice.

The Commission encourages the Committee to consult directly with children as part of this Inquiry, particularly if measures to address road user distraction for children and young people are likely to be recommended. For further communications on this matter, the contact person is [redacted] or at [redacted]

Yours sincerely

[redacted]

Megan Mitchell
Commissioner
7 May 2012

Commission for Children and Young People

Submission to Joint Standing Committee on Road Safety's Inquiry into Driver and Road User Distraction

Role and Work of the Commission

The Commission was established in 1999 as an independent statutory authority within Government under the *Commission for Children and Young People Act 1998*. Its functions include promoting and monitoring the overall safety, welfare and well-being of children in the community.

The Commission works with NSW Government and non-government agencies providing policy advice, undertaking research, supporting the development of child-safe organisations and monitoring the NSW Working with Children Check. The Commission reports to a Parliamentary Joint Committee. Further information about the work of the Commission can be found at: www.kids.nsw.gov.au.

Terms of Reference (ToR) of Inquiry

The ToR of this Inquiry are to examine the role of distraction[1] in crash casualties as it affects all road users in NSW, with a view to identifying its impact and to propose solutions for mitigating its negative consequences, with particular reference to:

a) The nature and extent of distraction as a contributor to crash casualties on NSW roads;
b) Current rates and future trends in take up of electronic devices, both by road users and vehicle manufacturers;
c) Regulatory means of enforcing harm minimisation caused by such devices;
d) Technological solutions to managing the harmful consequences of distraction;
e) Other solutions to reduce information overload for road users; and
f) Any other related matters.

[1] In this submission the following definition of driver distraction is used: *Driver distraction occurs when a triggering event that may be either internal (occurs inside the vehicle) or external (occurs outside the vehicle) induces an attention shift away from the driving task* (based on a definition developed by Horberry et al: 2006).

Synopsis

In responding to this Inquiry the Commission has focused on the extent to which driver distraction from hand held electronic devices and passengers impacts on young people as novice drivers. The submission also considers how hand held electronic devices impact on children as pedestrians and cyclists.

The issue of distraction is considered in the context of the vulnerability of children and young people as road users arising from developmental limitations, particularly the impact of brain development on risk-taking behaviour. This vulnerability reveals itself in higher rates of injury and death among young people as novice drivers and among children as pedestrians and cyclists. The influence of new technology on the lives of children and young people and their high level of uptake of technology, particularly hand-held electronic devices, further increases the risk that distraction poses to this group in a road environment. On this basis it is argued that this Inquiry should specifically consider the impact of driver and road user distraction on children and young people and develop strategies to address this emerging road safety problem.

The submission summarises existing regulatory initiatives that exist in NSW to counter the impacts of road user distraction upon children and young people and existing road safety educational programs for this group. The Commission favours the inclusion of education and training about the impact of road user distraction on children and young people in existing educational programs and driver training and licensing processes over additional regulatory measures to address road user distraction that specifically target children and young people.

Recommendations

Recommendation 1: *To facilitate improved understanding of the causes of distraction crashes, it is suggested that Roads and Maritime Services (RMS) seek to identify the type of incidents included in crashes involving a 'distraction inside the vehicle' and a 'distraction outside the vehicle' and provide a further breakdown of these factors as part of Crashlink.*

Recommendation 2: *Given the significant role that police pursuits play in distraction related injury and death of young drivers and passengers aged 16-24 years, it is recommended that this practice be urgently reviewed, with the intention of establishing viable alternative responses to situations that currently result in the pursuit of young drivers.*

Recommendation 3*: Given the significance of the presence of passengers as a factor in distraction crashes among P1 license holders, the success of the current NSW peer passenger condition in reducing crashes among this group involving passengers, particularly those resulting in injuries and fatalities, should be monitored over the next two years by RMS.*

This issue should also be addressed through school based and other driver education and training programs, particularly those targeting young drivers, and in licensing processes.

A review of the effectiveness of both regulatory and education measures should be considered in two years' time when longer term data should be available.

Recommendation 4: *Policy responses that are developed to address the emerging road safety issue of road user distraction should take into account and seek to address the significant vulnerability of children and young people as road users to the negative impacts of distraction.*

Recommendation 5: *That the current restrictions on mobile phone use by Learner and P1 drivers be retained notwithstanding the challenges of enforcement and the likely greater effectiveness of education in reducing driver distraction by mobile phone use.*

Recommendation 6: *That the NSW Road Safety Strategy 2012-2021 currently under development by RMS include strategies to address the risks posed by road user distraction, particularly to children and young people. It is suggested that strategies focus on including education about these risks in existing road safety education programs targeting children and young people, and driver training and licensing processes.*

Recommendation 7*: That the NSW Road Safety Education Program provided to NSW school students through the PDHPE curriculum includes a component on the risks associated with road user distraction to children and young people. It is also recommended that road safety programs provided to young people through other NSW Government agencies and organisations, including the new Safe Drivers Course for Learner Drivers, incorporate a similar focus. Road safety education programs should take young people's preferences about the delivery of such programs into account.*

Recommendation 8*: That driver training and licensing processes include a focus on the risks that distraction poses to novice drivers. They should also familiarise young people with the rules that apply to Learner and Provisional drivers in NSW regarding mobile phone use and transporting passengers.*

Recommendation 9: *That consultation occur with children and young people if recommendations are developed as part of this Inquiry to address road user distraction that are likely to significantly impact on this group. Furthermore, the relevant views of children from previous research undertaken by the Commission as part of the Ask the Children series should be considered as part of this process.*

Recommendation 10: *Future NSW Government policy decisions likely to significantly impact on children and young people as road users, such as the development of the NSW Road Safety Strategy 2012–202, should be informed by consultation with children and young people.*

Background

Children & Young People and Road Injury

Children and young people have a high rate of injury as road users (pedestrians, cyclists & drivers). The *National Road Safety Strategy 2011-2020* reports that young people aged 17 to 25 years make up 25% of drivers killed or seriously injured on Australian roads, but represent only 16% of the adult population and about 14% of all licence holders. Young drivers are most at risk of crashing in the first 6-12 months of gaining their licence. Roads and Maritime Services (RMS) crash statistics for 2011-12 report that 50 young drivers aged 17-20 yrs were involved in fatal crashes in NSW in the 12 months ending in February 2012. This accounted for 9.7% of fatal crashes in NSW for this period (NSW Government Centre for Road Safety: 2012).

The Strategy referred to above indicates that the higher likelihood that young drivers will be involved in serious crashes reflects a number of factors, including inexperience in driving, under-developed higher-order cognitive and decision-making skills and a greater propensity to take risks, especially among young males. In addition to young drivers, the Strategy reports that the road death rate for Australian children aged 0 to 14 years is high compared with other OECD countries, with Australia ranked 18th in 2006. Children are particularly vulnerable as unrestrained or incorrectly restrained passengers and also as pedestrians.

Lee (2007) summarises some of the identified reasons for the high crash rate among young drivers, which include:

- imperfectly learned vehicle control skills, which lead to poor control and less spare attentional capacity for additional roadway demands
- poor ability to anticipate and identify hazards
- willingness to take risks such as shorter following distances and higher speeds and
- sensitivity to peer influences in adopting inappropriate norms (Lee: 2007: 204-05).

Lee refers to a survey conducted in the United States that indicated that young drivers were more likely to engage in risky driving behaviour, such as drinking and driving and failing to use seat-belts, and had higher crash and violation rates.

The 2008 *Report of the NSW Chief Health Officer* indicates that motor vehicle transport was the fifth largest cause of hospital admissions for injury and poisoning of NSW children aged 0-14 years from 2004-05 to 2007-07, representing 7.2% of admissions. It was the largest cause of admissions of persons aged 15-44 years, representing 15.5% of admissions. This report indicates that motor vehicle transport was the largest cause of injury related death of children aged 0-14 years between 2002 and 2006, representing 32% of injury deaths.

The Commission will soon publish a chapter on serious injury in its databook *A Picture of NSW Children*, http://www.picture.kids.nsw.gov.au/. This chapter draws on a number of data sources to report on serious unintentional injury to children on a street or highway[2]. In 2009–2010 an estimated 1,275 incidents involving children aged 1–17 years occurred on a street or highway that resulted in a hospital admission. Of these incidents:

- 54.8% occurred while children were engaged in a wheeled (non-motor) sport.
- 28.9% of injuries were to the head, 16.9% to the elbow and forearm, 13.0% to the knee and lower leg and 10.4% to the abdomen, lower neck, spine and pelvis.
- Male children were more likely than female children and Aboriginal children were more likely than non-Aboriginal children to be seriously injured on a street or highway.
- Children living in remote and very remote areas were the most likely to be injured on a street or highway.

In 2010, 843 drivers aged 16–17 years were involved in a crash that resulted in their injury or death.

- 17 year old drivers were more likely than 16 year old drivers, male drivers were more likely than female drivers and P1 license drivers were more likely than Learner license drivers to be injured or die in a crash.
- 16–17 year old motorcyclists were more likely than 16–17 year old car drivers to be injured or die in a crash.

Response to TOR

a) The nature and extent of distraction as a contributor to crash casualties on NSW roads

Data availability

The RMS report *Road Traffic Crashes in New South Wales 2010* uses the RMS's Crashlink data collection. This report provides some data on distraction as a factor in crash casualties for drivers of all ages. Data is also available in Crashlink on distraction as a factor in crashes by age of driver and type of license but is not provided in this report at this level of detail. The Commission has access to this data collection for young people aged 16-24 years only, and a range of information on distraction as a factor in crashes for this age group is reported below and in Appendix 1.

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[2] *NSW Admitted patient Data Collection, NSW School Students Health Behaviours Survey & Roads and Maritime Services Crashlink Data Collection.*

The Commission also has access to the NSW Ministry of Health's Admitted Patient Data Collection, however this collection does not provide data on distraction as a factor in casualties. This collection provides data on the number of persons admitted to hospital as a result of a road transport related injury, and identifies if the injured person was the driver, passenger, a cyclist or pedestrian, but does not provide data on factors contributing to the injury such as distraction. Information from this collection is included in a chapter on serious unintentional injury soon to be published on the Commission's website.

The Commission is not aware of any data collection that provides information on distraction as a factor in pedestrian and cyclist injuries.

Recommendation 1: *To facilitate improved understanding of the causes of distraction crashes, it is suggested that RMS seek to identify the type of incidents included in crashes involving a 'distraction inside the vehicle' and a 'distraction outside the vehicle' and provide a further breakdown of these factors as part of Crashlink.*

Recommendation 2: *Given the significant role that police pursuits play in distraction related injury and death of young drivers and passengers aged 16-24 yrs, it is recommended that this practice be urgently reviewed, with the intention of establishing viable alternative responses to situations that currently result in the pursuit of young drivers.*

Recommendation 3*: Given the significance of the presence of passengers as a factor in distraction crashes among P1 license holders, the success of the current NSW peer passenger condition in reducing crashes among this group involving passengers, particularly those resulting in injuries and fatalities, should be monitored over the next two years by RMS.*

This issue should also be addressed through school based and other driver education and training programs, particularly those targeting young drivers, and in licensing processes.

A review of the effectiveness of both regulatory and education measures should be considered in two years' time when longer term data should be available.

Data on distraction as a factor in motor vehicle crashes in NSW

All drivers

The report *Road Traffic Crashes in New South Wales 2010* provides data on possible factors contributing to a crash for the 2010 calendar year for drivers of all ages, including some but not all possible distraction factors. As the factors are not mutually excusive they can not be added together to indicate the total number of crashes in which distraction was involved. The data in this report does indicate that distraction outside the vehicle (3605) was the largest distraction factor under the broad category of 'Controller Disadvantaged' that contributed to a crash, followed by distraction inside the vehicle (1210). Involvement of 'using a hand-held phone' in crashes was relatively small,

contributing to 56 crashes only. Distraction arising from using a hand-held phone was a factor in 3 fatal crashes and in 31 crashes resulting in injury. Distraction inside the vehicle was a factor in 1 fatal crash and 448 crashes leading to injury, while distraction outside the vehicle was a factor in 14 fatal crashes and 1,724 crashes resulting in injury.

Thirty-seven per cent (37.1%) of crashes in which distractions inside the vehicle were a contributing factor resulted in injury and death, while 48.2% of crashes involving distraction outside the vehicle led to injury or death. This data indicates that distraction factors outside the vehicle accounted for the largest number of distraction crashes. They also proportionately accounted for more distraction crashes resulting in injury and death than distractions inside the vehicle. Apart from vision obscured by sun or headlights of an oncoming vehicle, Crashlink does not provide further information on the type of event leading to crashes caused by distraction outside the vehicle. This lack of specificity makes it difficult to fully understand the causes and of these crashes and to develop strategies to prevent them. It is suggested that RMS seek to categorise and provide a further breakdown of the contributing factors leading to distraction crashes caused by something outside the vehicle (Value 6 in Crashlink Data Manual) and also distraction factor inside the vehicle (Value 5 in Crashlink Data Manual).

16-24 yr old drivers

The Commission has access to Crashlink data for 16-24 year olds only. Table 1, Appendix 1 shows primary cause of distraction as a contributing factor in motor vehicle crashes involving 16-24 year olds from 2001- 2010. It shows incidence of distraction factors such as distraction by passengers, distraction inside the vehicle, distraction outside the vehicle and distraction from a hand-held phone. This data indicates that there were 16,990 crashes involving 16-24 year olds as drivers in which distraction was a factor[3] between 2001 and 2010, which represented 8.6% of all crashes for this age range. Distraction from a hand held phone was a primary factor in 116 crashes of young people in this age range from 2001 to 2010, a relatively low number. Driver distracted by something outside the vehicle (for eg sunlight, headlights of oncoming vehicle) was the largest factor in distraction crashes, associated with 9,286 crashes, compared to 3,124 caused by distractions inside the vehicle. This is similar to results for the whole population reported above.

Of all the distraction crashes involving young drivers over this ten year period, 93 or 0.5% resulted in a fatality, and 6659 or 39.1% resulted in an injury (the injury/ fatality could be the driver, passenger or pedestrian/ bystander) (Tables 2 and 3, Appendix 1). Distraction by a hand-held phone was a factor in 2 fatal crashes (Table 2) and 42 injury crashes (Table 3), while distraction by a passenger was a factor in 2 fatal crashes and 150 injury crashes.

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[3] This includes all factors listed as distractions in Table 1, including asleep or drowsy and chronic illness. The merit of including the latter categories is debatable as they may not represent a 'triggering event' as this would normally be understood

Notably, the category 'pursued by police' was classified as a primary distraction factor in 412 crashes overall, 177 resulting in injury and 15 resulting in death. This category resulted in more fatalities among young drivers than distraction by passengers and hand-held phones combined. Three point six per cent (3.6%) of cases of distraction arising from police pursuit resulted in a fatality, compared with .5% of all distraction crashes, while 42.9% resulted in an injury.

There were a total of 116 crashes involving 16-24 year olds where a hand-held phone was the primary distraction factor. This included 47 crashes in which a hand-held phone was the primary cause of distraction among provisional license holders, 26 among P1 holders and 21 among P2 holders. Numbers of crashes ranged from 0 to 5 per year for P1 holders and 0 to 7 for P2 holders. No clear trend is discernable due to the small numbers and the limited time period involved, however crashes in which hand-held phones were involved have not declined in number since 2007, the year in which legislation was introduced banning use of any mobile phone while driving for Learners, P1 and P2 license holders (Tables 4, 5 & 6 Appendix 1).

Distraction by passenger data is presented as a separate category in Table 7, which shows it was a primary factor in 383 crashes of young people over this period. Of these 383 crashes, 154 or 40.2 % involved P 1 drivers and 62 involved P2 drivers (Tables 8 and 9). The level of involvement of passengers in crashes among P1 drivers is noteworthy.

Crashes involving distraction factors outside the vehicle were higher in the 18-19 age group, appearing to decline from the age of 21-24 (Table 10). Similarly crashes where 'other distraction factor' was involved were most prevalent in 19-20 year olds, declining from the age of 21 onwards (Table 11). The data on age and distraction referred to above suggests that distraction related crashes are more prevalent in younger novice drivers, perhaps reflecting the greater tendency of novice drivers to be involved in crashes of any kind.

On the basis of the above data, crashes involving young people in which passengers and a hand-held phone were primary factors are relatively low in number, but warrant notice and attention as they are largely preventable. International and Australian research also indicates that young people are more likely to be involved in crashes in which mobile phones and passengers are a factor than other drivers.

As highlighted above, pursuit by police (412) was a more significant factor than distraction by passenger (383) or mobile phone (116) in crashes involving young drivers, resulting in a higher number of fatal and injury crashes. As a direct comparison, over the 2001-2010 period of data capture, for 16-24 year old drivers, police pursuit was the primary factor in 15 *fatal crashes* while handheld phone was the primary factor in 2. Police pursuit was a primary factor in 177 *injury crashes* compared to handheld phones in 2.

This finding suggests that the tactic of police pursuit of young drivers, particularly at high speed, may need to be reconsidered. Again, the lack of further detail on the type of incidents contributing to the most significant causes of distraction crashes, 'distracted by something outside vehicle' and

'distracted by something inside vehicle', makes it difficult to understand and address the cause of these crashes.

Other research on distraction as a factor in motor vehicle crashes

Incidence of distraction as a factor in crashes

Monash University Accident Research Centre (MUARC) published a literature review on driver distraction in 2003. It investigated the impact of technology based distractions (e.g. mobile phones and route guidance systems) and non-technology based distractions (e.g. eating, smoking and conversing with passengers) on driving performance. The authors reported that approximately 25% of vehicle crashes in the United States are estimated to result from the driver being inattentive or distracted.

The report of a Victorian Parliamentary Inquiry into Driver Distraction was tabled in 2006. This report referred to a New Zealand study of police crash data, which indicated that driver distraction was a factor in approximately 10% of motor vehicle accidents in New Zealand in 2002 and 2003, with a relatively even distribution between distractions inside and outside the vehicle.

The Monash literature review reported that the full extent to which distraction is a causal factor in vehicle crashes in Australia is not yet known, however there is converging evidence that it is likely to be a significant problem. The Victorian Parliamentary Inquiry also found that there was a lack of data on the extent to which driver distraction is a factor in crashes in Victoria and the Committee recommended that relevant Victorian Government agencies develop methods to enable the future assessment of the role of distraction in crashes on Victorian roads (Recommendation 2). However as far as the Commission is aware, RMS's Crashlink data collection provides a reliable source of data on the involvement of distraction in crashes in NSW, including fatal and injury crashes, although, as noted above, further detail regarding the categories that make up distraction inside the vehicle and distraction outside the vehicle would be helpful in understanding these incidents.

It is understood that Crashlink is based on data collected by the police at the time of an accident, and it is possible that limitations in the information about the cause of an accident may result from a lack of information available to police at this time (e.g. mobile phone or passenger involvement may not be apparent or reported by driver). As part of this Inquiry the Committee may wish to explore the extent to which Crashlink fully and accurately reports the role of distraction in crashes in NSW by ascertaining the views of experts in the collection and analysis of road safety data on this issue.

Factors that contribute to distraction crashes

The MUARC literature review reported that using a mobile phone while driving can increase the risk of being involved in a collision by up to four times and that many studies have found that using a hands-free phone while driving is no safer than using a hand-held phone. Research suggests that both the physical and cognitive distraction caused by using mobile phones while

driving can significantly impair a driver's visual search patterns, reaction times, decision-making processes and the ability to maintain speed, throttle control and lateral position on the road. Sending a text message is more distracting than simply talking on a mobile phone (Young, Regan & Hammer: 2003).

In regard to Route Guidance Systems, entering destination information is believed to be the most distracting task associated with this technology, however use of voice input technology can reduce the distraction associated with this task, as can locking out the capacity to enter destination information while driving. In regard to in-vehicle entertainment systems, the review found that engaging in tasks such as tuning a radio and operating a CD player while driving appears to have a detrimental effect on driving performance, particularly for inexperienced drivers. Engaging in these tasks while driving is more distracting than dialling a mobile phone and eating. Research suggests that simply listening to radio broadcasts while driving can impair driving performance.

In regard to non-technology distractions, the authors refer to research that a greater proportion of drivers involved in traffic accidents are distracted by eating or drinking (1.7%) than by talking on a mobile phone (1.5%). Another study corroborated this finding and found that eating a cheeseburger was as distracting as using a voice-activated dialling system. Several studies have found that smoking while driving increases the risk of being involved in a crash. In addition, research on teenage passengers reveals that the presence of passengers increases crash risk, particularly for younger drivers (Williams: 2001 cited in Young, Regan & Hammer: 2003).

Studies on effect of road user age and distraction on the risk of traffic accidents and injury

Mobile phone & MP3 player use

Lam (2002) notes that that there is a growing body of literature on the effects of mobile phone use on driving performance, which indicates that there is a significant association between mobile phone use while driving and the risk of collision and injury. Lam investigated the effects of driver age on the relationship between distraction and car crash injury, and examined data from the NSW RTA's Traffic Accident Database System (TADS) for the period 1996 to 2000 by distraction type and age in order to do this.

Lam found that the 25-29 year age group had the highest frequency of phone use-related injurious crashes as well as total crashes, compared to drivers of other ages. The risk of car crash injury for 25-29 year old drivers who used a hand-held phone while driving was 2.4 times higher than for those of this age who were not distracted, (Lam: 2002: 415). Lam notes that these results were similar to those obtained by Violanti (1997, 1998) who also found a significant interactive effect between in-vehicle distraction and age. Lam speculates that young drivers, due to their developing cognitive capacity, may find it more difficult than older drivers to cope with distractions that "add to the already

heavy-loaded cognitive processing in handling the driving task" (Lam: 2002: 417).

Similarly Lee, in an article on 'Technology and Teen Drivers', notes that the "distraction potential of infotainment technology stresses the same vulnerabilities that already lead young drivers to crash more frequently than other drivers" (Lee: 2007: 203). Devices such as mobile phones and MP3 players represent a threat because young drivers may lack the spare attentional capacity for vehicle control and the ability to anticipate and manage hazards. Lee also notes that young drivers are also likely to be the first and most aggressive users of new technology. Infotainment technology diminishes driving safety by undermining the operational, tactical and strategic levels of control.

White et al (2012), writing in the Australian context, note that while some new mobile phone applications such as assisted navigation can aid drivers, other functions such as access to email and social networking sites can provide a distraction from the main purpose of safe driving. The authors surveyed approximately 200 young drivers in Queensland and found that 53% of the young people sampled used their mobile phone while driving once or twice a week for sending texts, 65% for reading texts, 60% for making calls and 69% for answering calls. One third of participants reported performing these activities at least daily.

The authors discuss the greater tendency of young people aged 17-24 yrs to use a mobile phone while driving in the context of the belief that the benefits of doing so outweigh the costs, one cost being that using a hand-held phone while driving is illegal in Australia. They found that level of mobile phone involvement influenced young people's intention to use a mobile while driving, noting that the convenience of using such technologies can lead to an excessive attachment that impairs decision-making.

While the mobile phone has been the subject of considerable scrutiny as a source of driver distraction, Horberry et al 's study of simulated driving performance found that operating a vehicle entertainment system was more distracting than conducting a hands-free mobile phone conversation. They found that both tasks could degrade driving performance in some situations, for example maintaining speed and preparedness to react to unexpected hazards. However the older group who participated in the simulation (aged over 60 yrs) maintained a lower vehicle speed than drivers aged under 25 yrs when subject to distraction.

De Waard et al (2011) examined the effect of listening to music and using a handheld and handsfree phone on the cycling behaviour of 25 young people aged 16 to 26 years in the Netherlands. Similar to studies of driving performance, the authors found that listening to music worsens auditory perception, particularly if both in-ear buds are used. This could impact on cyclist safety, as auditory perception is particularly important for cyclists so that they can hear warning signals and vehicles approaching from behind. Furthermore they found that both handheld and handsfree operation of mobile

phones had a negative effect on perception, potentially creating a threat to cyclist safety.

Schwebel et al (2012) studied the effect of talking on a mobile phone, texting and listening to music on pedestrian safety, by testing 138 American college students in a range of virtual scenarios. The authors found that participants distracted by music or texting were more likely to be hit by a vehicle in the virtual pedestrian environment than were undistracted participants. Participants in all three distracted groups were more likely to look away from the street environment (and look toward other places, such as their telephone or music device) than were undistracted participants. They concluded that distraction from multimedia devices has a small but meaningful impact on college students' pedestrian safety.

In their discussion of the evidence on pedestrian distraction, Schwebel et al refer to the findings of recent observational research that pedestrians who are distracted by phone conversations or other activities such as eating or listening to music take greater risks when crossing streets (Schwebel et al: 2012: 266).

Teen passengers and adolescent drivers

Lee (2007) highlights that passengers of the same age dramatically undermine the safety of young drivers as they can negatively influence them at all levels of control, from distracting them from the driving task to inducing greater risk taking behaviour, such as faster driving. This issue is taken up by Heck and Carlos (2008), in their study of 'Passenger distractions among adolescent drivers'. They note that many studies have shown that when adolescent drivers have teenage passengers they have a higher risk of crashes. They refer to a review of existing research on teenage passengers in motor vehicles published by Williams in 2001 that indicated that 63% of the deaths of 13-19 year old passengers occurred when other teenagers were driving. Other research showed that teenage drivers who had two or more passengers were at particularly high risk of fatal crashes. Carrying male passengers is particularly risky for young drivers. At the same time other studies have revealed that driving with peers is a highly desirable activity for adolescents, affording them status, peer approval and independence.

Heck and Carlos set out to understand the circumstances of passenger distraction for young drivers. Their study used survey data on driving from 2144 California high school seniors. Overall 38.4% of the young people who drive reported having been distracted by a passenger, and in some cases these distractions were deliberate, such as hitting the driver and attempting to seize the vehicles controls, usually in fun. Most students in the survey reported having been a passenger when a friend was driving dangerously.

The research summarised above suggests that use of electronic devices by young people as road users (drivers, pedestrians and cyclists) is quite common. It also indicates that this has a significant impact on their capacity to function effectively in this context and may therefore impact on their safety in the road environment. Those studies that compared use of technology while

driving and its impact on driving performance for persons of different ages found that use of devices such as mobile phones and in-vehicle entertainment systems had a more adverse impact on young drivers than older drivers.

Relationship of child and adolescent development to distraction

It is important to note that children are vulnerable pedestrians to begin with, before the impact of hand-held electronic devices is taken into account, because they are subject to a range of limitations associated with their stage of development. For example Bakovic (2012) notes that children do not reach an adult level of performance in traffic (i.e. do not have the perceptual and cognitive capacity to make sound judgements about traffic safety) until about 12 yrs of age and that vision is not fully developed until age 16 years. The more complex the traffic environment, the more difficult the crossing task will be for children to perform. Young children have limited ability to process information in their peripheral vision, so they need more time to react once an object in the periphery is seen. Children also tend to believe that others will protect them, and can be overconfident in many circumstances.
Other commentators note that children are particularly prone to risk taking behaviour with the onset of puberty, as they are more influenced by the socio-emotional brain network and less by the cognitive control network, which does not achieve full development until adulthood. The socio-emotional network is also particularly subject to peer influence. Steinberg explains that risk-taking behaviour is not due to flaws in reasoning abilities, which are reported to be more or less fully developed by age 15, but because "psychosocial capacities that improve decision-making and moderate risk taking- such as impulse control, emotional regulation, delay of gratification, and resistance to peer influence- continue to mature well into young adulthood (Steinberg: 2007: 56).

What Steinberg and others suggest is that risk taking is the product of a "competition between the socio-emotional and cognitive-control networks" and puberty is a period in which the former abruptly becomes more assertive while the latter gains strength only gradually, over a longer period of time. The socio-emotional network is not in a state of constantly high activation during adolescence, but is stimulated in the presence of peers or under conditions of emotional arousal, and in these contexts can diminish the effectiveness of the cognitive- control network. This can lead to a preference for immediate rewards and risky choices over more conservative ones.

Heck and Carlos (2008) refer to studies that have found that brain development continues throughout adolescence, particularly with regard to the brain circuitry supporting cognitively controlled behaviour (Luna & Sweeney: 2004). In addition capacities important for driving such as the ability to function under challenging circumstances and to manage risk, known as regulatory competence, involve the prefrontal cortex which is growing rapidly during adolescence (Keating: 2007, cited in Heck and Carlos: 2008).

Heck and Carlos note that the development of regulatory competence allows for integrative functioning, in which tasks can be accomplished despite major distractions. Brain functions important for driving such as those guiding the ability to maintain attention, cognitive flexibility, including memory and shifting

attention, planning and goal setting and executing strategic behaviour are all controlled in the prefrontal cortex, which is one of the last brain regions to mature. Heck and Carlos conclude that because of their less developed brain functions, adolescents are developmentally less able than adults to cope with distractions while driving. Although cycling and negotiating traffic as a pedestrian are less complex tasks than driving, developmental limitations of children and adolescents are also likely to impact on their capacity to undertake these activities when distracted by hand held electronic devices.

Recommendation 4: *That policy responses that are developed to address the emerging road safety issue of road user distraction should take into account and seek to address the significant vulnerability of children and young people as road users to the negative impacts of distraction.*

b) Current rates and future trends in take up of electronic devices, both by road users and vehicle manufacturers

Children & Young People and Media and Communications Technology

Children and young people have a high uptake of new media and communications technology, including mobile phones. A literature review of children' use of media and communications technology published by the Australian Communications and Media Authority (ACMA) reports that "mobile phones have become a central artefact in the development of contemporary teen culture and most teenagers regard their phone as key to their social life and an important element of their identity". The review notes that in addition to talking to peers on the phone, using text messages to initiate and maintain personal relationships is very important to children (ACMA: 2007: 295- 6).

ACMA reports that 59% of a sample of Australian parents surveyed in 2007 indicated that their child used a mobile phone: 54% of these children had their own phone. Phone use increased dramatically with age, with only 16% of 8 year olds but 90% of 17 year olds using a phone. The report indicates that usage jumps significantly at age 12 (57% use a mobile), which is seen in an increase in texting, playing games on phones and making calls. Advanced features such as internet access and video content were not commonly available to children (18%).

Parents reported that 94% of children play video or computer games, with 83% doing so on a console connected to a TV or hand-held device. Usage peaks at 11 and declines after age 13. Research conducted with children as part of the same project, indicated that 83% play console/ handheld games anywhere (i.e. inside and outside the home, school etc). In addition 63% of children use a MP3 or MP4 player. Children spend an average of 21 minutes per day listening to recorded music: usage is higher among girls and young people aged 13-19 years.

An ABS survey of children's mobile phone usage conducted in 2009 reported that 31% of Australian children had a mobile phone at the time of the interview. Older children (12-14 yrs) were more likely to have a mobile phone (76%), while among the youngest group (5-8 year olds) only 2% had a mobile phone. Only 4% of children had used their mobile phone to access the internet in the 12 months prior to the interview. (It may be prudent to note that this low internet usage by children with phones is likely to change significantly with advances in technology.)

This data indicates that mobile phone usage is extremely common among older children, particularly adolescents. While usage of hand held consoles/ phones to play games is more common among younger children, usage of mobile phones and iPods is more common among adolescents. Usage of these devices in a range of environments, including outside the home, is common.

Information such as this on children's use of media and communications technology suggests that a range of messages about distraction and driver/ road user safety need to be targeted at children and young people as drivers, cyclists and pedestrians, depending on their age and pattern of use of hand-held electronic devices. Educational strategies need to take into account the importance of the mobile phone to adolescent identity and teen culture, and the degree of attachment that some young people may have to these devices.

c) Regulatory means of enforcing harm minimisation caused by such devices

New South Wales

A number of regulatory measures to address driver distraction are currently in place in NSW. Use of a hand-held mobile phone while driving and riding is illegal in NSW. Learner and P1 provisional drivers and riders are also prohibited from using any form of mobile phone, including a hands-free, while driving or riding [a motorbike]. In addition restrictions on carrying passengers exist for Learner and P1 provisional drivers. Learner and P1 drivers under the age of 25 years must not drive a vehicle with more than one passenger (other than the driver) under 21 years old between 11pm and 5am. This restriction is referred to as the peer passenger condition.

A one-passenger condition also applies to any provisional driver (P1 or P2) who is disqualified for a driving offence. After the disqualification period the provisional licence holder will be restricted from carrying more than one passenger at all times for a 12 month period. Exemptions from these conditions may be granted in exceptional circumstances, upon application.

There are currently no regulatory measures in NSW or any other Australian jurisdiction (of which the Commission is aware), which attempt to address driver distraction for pedestrians or cyclists.

While the peer passenger condition is based on strong evidence of the risks associated with distraction by passengers and its intention is to protect young people from injury and death, regulatory measures which are targeted at one population group on the basis of age have the potential to be perceived as unfair and discriminatory by the affected group. To justify the imposition of such measures it is important that regulatory provisions designed to increase driver and passenger safety such as restrictions on the use of mobile phones and on carrying passengers are demonstrably effective. Both of the regulatory measures referred to above that affect young drivers were introduced on 1 July 2007 and have now been in place for 5 years.

Recommendation 5: *That the current restrictions on mobile phone use by Learner and P1 drivers be retained notwithstanding the challenges of enforcement and the likely greater effectiveness of education in reducing driver distraction by mobile phone use.*

Other countries

In the report of its *Inquiry into Road User Distraction*, published in 2006, the Victorian Parliament noted that in the United States, "the emerging trend is to legislate against a multitude of behaviours (eg: reading, writing, personal grooming, interacting with pets or unsecured cargo, using personal communications technologies or engaging in other activities that cause distractions)" while driving (Victorian Parliament: 2006: 121-122). In Washington, District of Columbia, legislation specifically targets the offence of 'distracted driving', which means that the driver is inattentive while operating a motor vehicle, and that inattention results in the unsafe operation of the vehicle because of the behaviour.

It is understood that using a hand-held telephone while cycling is prohibited in Germany, (de Waard et al: 2011) and that a Bill was introduced into the New York Senate in January 2011 to ban the use of an electronic device while crossing a road in a city with a population with one million or more. The Bill was referred to the Transportation Committee and has not progressed past this point.

More recently, there have been media reports of American states such as Arkansas considering a ban on pedestrians walking on streets while wearing headphones in both ears[4]. Legislation is reported to be pending in Oregon that would restrict cyclists from using mobile phones and music players, and a Virginia law would also ban riders from using a handheld communication device. In California a Bill was reintroduced in 2011 that failed in 2010, to fine

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[4] *For example* http://www.foxnews.com/politics/2011/01/25/arkansas-new-york-lawmakers-ban-use-headphones-walking/ *and* http://www.mobiledia.com/news/80811.html

bicyclists $20 for using mobile devices while riding. Fines would also apply to contravening the laws proposed in other American states. While a number of American states have introduced legislation to address distracted driving, it is unclear whether any American legislature has yet passed legislation that targets cyclist and pedestrian distraction. The Commission is not aware of any overseas legislation that specifically targets distracted road use by children and young people, apart from the bans on Learner, probationary or teenage drivers using a mobile phone while driving and bans on novice drivers transporting passengers in some American states (Victorian Parliament: 2006: 123; Heck & Carlos: 2008).

Media reports note that moves to introduce distraction legislation targeting cyclists and pedestrians in some American states have been criticised for intruding unnecessarily on individual privacy, and for being difficult and expensive to enforce. While similar legislation for drivers may be supported due to the risks to drivers, passengers and pedestrians posed by distracted drivers, distracted pedestrians and cyclists are not viewed as posing the same risk to themselves or others.

While the Commission is concerned about the safety of children and young people as road users, it is of the view that any move to introduce legislation to ban the use of electronic devices such as hand-held phones and MP3 players by pedestrians and cyclists should be viewed with caution for the reasons identified above. It is also the case that young people would be particularly impacted by any such legislation, due to their high uptake of technology. Unless clear evidence can be produced that pedestrian and cyclist distraction is a significant road safety issue in Australia, legislation such as that being contemplated in some American states does not appear to be warranted.

d) Technological solutions to managing the harmful consequences of distraction

The Commission does not have specific knowledge of technological solutions to manage the harmful consequences of distraction and has not researched this area. However it is worth noting that public health approaches to injury prevention emphasise the success of strategies that seek to alter products and environments as a way of preventing injury (WHO: 2008). Strategies such as mandating use of seat-belts and child car-restraints, for example, have universal application and while they rely on individual action, carry fines and other penalties for failure to comply. The strategy of separating pedestrians and cyclists from cars through overhead bridges, creating car free areas and pedestrian right of way in busy pedestrian areas and on and off road cycle paths are environmental pedestrian and cyclist safety measures. Such environmental measures are also likely to protect child cyclists and pedestrians from any additional risk associated with distraction from hand-held electronic devices, and use of these devices represents an additional rationale for such measures.

Designing cars and electronic devices in such a way that maximises features likely to improve safety such as voice activation and preventing the entering of

GPS destinations while driving may have a positive impact on safety. Measures that operate automatically and can not be disabled by the driver have the advantage over strategies that rely on driver education alone that they do not depend on behaviour change for their effectiveness. However the extent that they remove choice from the driver may detract from their popularity and user acceptance.

While voice activated CD players and hands-free and voice activated mobile phones may go some way to reducing road user distraction, it is noted that simply listening to music and talking on a hands-free phone while driving and cycling have been shown to negatively effect capacity to operate a vehicle. It is also the case that novice drivers tend to drive older cars, with fewer safety features, and consequently may not have access to the benefits of newer in-vehicle technology. Furthermore a number of key causes of distraction such as eating and smoking while driving, conversing with passengers and distractions outside the vehicle can not be managed through vehicle or phone based technological solutions. Technological solutions should thus be viewed as important contributors to managing the harmful consequences of some in-vehicle distractions, but can not be regarded as a panacea.

e) Other solutions to reduce information overload for road users

The Commission has no substantive comment to make in this regard. However we wish to highlight that any measures to reduce visual overload for road users such as controls on roadside advertising are likely to be particularly beneficial to children and young people. This is because as novice drivers and as pedestrians and cyclists, children and young people are vulnerable road users who are particularly affected by the negative impact of distraction from all sources.

f) Any other related matters

NSW Government Road Safety Policies and Strategies

The Victorian Parliament's Inquiry into Road User Distraction recommended that the Victorian Government increase the profile of driver distraction as a road safety issue, including addressing it in the forthcoming *Victorian Road Safety Strategy*. The Commission is of the view that a similar response to road user distraction should be adopted in NSW. It is noted that the NSW Government is currently developing a *NSW Road Safety Strategy 2012–2021*. It will be important for this Strategy to acknowledge the risks associated with road user distraction and to include strategies to address these risks. Strategies should specifically address the risks that distraction poses to children and young people as road users.

Recommendation 6: *That the NSW Road Safety Strategy 2012-2021 currently under development by RMS include strategies to address the risks posed by road user distraction, particularly to children and young people. It is suggested that strategies focus on including education about these risks in*

existing road safety education programs targeting children and young people, and driver training and licensing processes.

Road user education and driver training & licensing processes

The Commission wishes to emphasise the important role of road user education, particularly education strategies targeting children and young people, in raising awareness of the risks associated with distracted road use. This is particularly the case where regulatory measures may be regarded as intrusive or unwarranted and where environmental change and technological advancement does not have the capacity to fully address the problem.

Staysafe's recent report of its 2011 *Inquiry into School Zone Safety* notes that RMS' NSW Road Safety Education Program provides educational resources to all schools in NSW and professional development for teachers in road safety instruction. Road safety is taught to all students from Kindergarten to Year 12 as part of the NSW Board of Studies Personal Development, Health and Physical Education (PDHPE) syllabus. The Committee "notes the importance of a strong focus on road safety education for students of all ages and supports its mandatory status in the curriculum" (NSW Parliament: 2012: 73). The Committee reports that NSW is the only Australian state which has mandatory road safety education as part of its school curriculum and recommends that the proposed national school curriculum adopts the NSW policy of mandatory road safety education for all students.

The Commission concurs with this recommendation and is of the view that the impact of distraction on road users as drivers, cyclists and pedestrians should be included in the NSW Road Safety Education Program and integrated into the national curriculum. This education should particularly seek to inform children and young people about the distraction risks posed by hand held electronic devices and passengers, especially to novice drivers. It should also seek to impart the risks associated with using a hands-free phone while driving, which some studies have shown is no safer than a hand-held phone.

In the report arising from this Inquiry, Staysafe also notes that a range of other agencies such as NSW Police and organisations including the NRMA, Rotary and Scouts provide road safety education for young people. In addition the NSW Government has indicated that it will introduce a Safe Drivers Course for Learner Drivers, following through on an election commitment. The potential to include educational materials on the impact of distraction on young people as drivers, pedestrians and cyclists in these programs should be explored.

As part of its *Ask the Children* series, the Commission spoke with more than 130 young people aged 9-14 yrs around NSW about their views on driving and road safety, http://kids.nsw.gov.au/kids/resources/publications/askchildren.cfm?itemID=5B5BB1D9BA3BB3108072A18AADF2C5A7. Young people had particular views about driver education, suggesting it would be more appealing to young people if it was interactive and practical and included the use of driving

simulators, rather than being purely theoretical. They suggested that not only teachers, but people with relevant knowledge and experience such as police officers and people who had been involved in accidents should contribute. They also suggested that having young people of a similar age present to them would be interesting and relevant.

In its submission to the above Inquiry the Commission noted that RMS's school education program engaged parents to a small degree only, and recommended improved road safety education of parents that would make reference to the impact of child development on the safety of children as pedestrians. The Commission considers that road safety education for parents should also cover the impact of distraction on young people as novice drivers and as pedestrians and cyclists, so that parents can encourage children and young people to engage in safe behaviours. This education should include consideration of interactive, scenario-based learning in relation to distractions.

In its submission to this Inquiry the Commission suggested that the effectiveness of the RMS Road Safety Education Program be evaluated. This recommendation, which was supported by the Committee, is also relevant to any educational material that is developed on road user distraction.

In addition to school based and other road safety education programs, it has been suggested that information and guidance on responding to distraction, particularly for novice drivers, should be included in driver training and licensing processes and publications (Victorian Parliament: 2006). The Commission supports this recommendation.

Recommendation 7*: That the NSW Road Safety Education Program provided to NSW school students through the PDHPE curriculum includes a component on the risks associated with road user distraction to children and young people. It is also recommended that road safety programs provided to young people through other NSW Government agencies and organisations, including the new Safe Drivers Course for Learner Drivers, incorporate a similar focus. Road safety education programs should take young people's preferences about the delivery of such programs into account.*

Recommendation 8: *That driver training and licensing processes include a focus on the risks that distraction poses to novice drivers. They should also familiarise young people with the rules that apply to Learner and Provisional drivers in NSW regarding mobile phone use and transporting passengers.*

Views of children and young people

It is important that the views of children and young people are taken into account in decision-making on matters that affect them. Young people should be consulted as part of this Inquiry and as part of any future decision-making by government to the extent that these initiatives seek to frame a response to the problem of road user distraction in ways that may significantly impact on

them. The Commission would be willing to assist in this regard, resources permitting.

The issue of road safety is one that significantly affects children and young people, as does their experiences as drivers and passengers. Regulatory measures specifically targeted at young drivers such as the NSW passenger condition have a particular impact on them. The research conducted with young people as part of the *Ask the Children* series referred to above indicated that driving is a significant part of many young people's lives, as it provides a convenient way of getting where young people need and want to go for purposes such as work, study or recreation. Access to transport is particularly important to young people in regional and rural areas, where there is often limited public transport and long travel distances. Driving is also regarded by young people in metropolitan areas as a safer alternative to public transport.

As part of this research, young people discussed the issue of driving restrictions, and indicated that they did not want restrictions on driving "that punish all young drivers" (CCYP: 2005: 3) because of the actions of a minority. They expressed concern that any restriction on driving at night, for example, would negatively impact on them as it would restrict access to work, study and social activities. However the introduction of a graduated licensing system was generally favoured by young people. These findings suggest that young people will accept reasonable driving restrictions while they gain skills, but object to generic regulatory measures targeting young drivers which significantly impinge on their capacity to undertake normal activities.

Recommendation 9: *That consultation occur with children and young people if recommendations are developed as part of this Inquiry to address road user distraction likely to significantly impact on this group. Furthermore, the relevant views of children from previous research undertaken by the Commission as part of the Ask the Children series should be considered as part of this process.*

Recommendation 10: *Future NSW Government policy decisions likely to significantly impact on children and young people as road users, such as the development of the NSW Road Safety Strategy 2012–202, should be informed by consultation with children and young people.*

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Appendix 1. Tables from Crashlink Data Collection showing primary distraction factor in crashes with 16-24 yr old drivers as controller

Table 1: All crashes by Primary Distraction Factors of controllers aged 16-24, 2001-2010

	Reporting Year										
Distraction factor (primary)	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Asleep or drowsy	378	254	193	208	206	193	193	206	188	295	2,314
Chronic illness	3	1	0	0	0	0	1	0	1	0	6
Distracted by passengers	74	48	26	32	30	24	36	25	26	62	383
Distracted inside	574	313	263	247	265	283	232	261	270	416	3,124
Distracted outside	1,386	1,145	993	898	817	794	830	643	713	1,067	9,286
Emergency vehicle war	14	21	9	4	4	5	9	12	18	10	106
Hand-held phone	22	7	10	13	2	6	10	12	12	22	116
None	20,396	20,008	19,894	18,808	18,067	17,951	17,270	15,746	15,674	15,137	178,951
Other distraction factors	91	73	20	32	28	37	45	47	60	77	510
Pursued by police	84	75	43	34	35	32	23	34	24	28	412
Sudden illness	112	60	50	68	77	67	73	69	55	102	733
Total	**23,134**	**22,005**	**21,501**	**20,344**	**19,531**	**19,392**	**18,722**	**17,055**	**17,041**	**17,216**	**195,941**

Table 2: Fatal crashes by Primary Distraction Factors of controllers aged 16-24, 2001-2010

	Reporting Year										
Distraction factor (primary)	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Asleep or drowsy	8	7	3	3	1	3	2	2	1	0	30
Chronic illness	0	0	0	0	0	0	0	0	1	0	1
Distracted by passengers	0	1	0	1	0	0	0	0	0	0	2
Distracted inside	2	1	0	0	0	0	0	0	0	0	3
Distracted outside	7	6	2	4	4	4	3	3	1	1	35
Emergency vehicle war	1	0	0	0	0	0	0	0	0	0	1
Hand-held phone	2	0	0	0	0	0	0	0	0	0	2
None	147	123	157	153	133	143	107	107	106	107	1,283
Other distraction factors	0	1	0	0	0	0	0	0	0	1	2
Pursued by police	1	4	1	1	1	0	1	2	3	1	15
Sudden illness	2	0	0	0	0	0	0	0	0	0	2
Total	170	143	163	162	139	150	113	114	112	110	1,376

Table 3: Injury crashes by Primary Distraction Factors of controllers aged 16-24, 2001-2010

	Reporting Year										
Distraction factor (primary)	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
Asleep or drowsy	187	123	80	83	78	79	70	92	77	128	997
Chronic illness	2	1	0	0	0	0	1	0	0	0	4
Distracted by passengers	28	23	13	14	12	9	18	4	4	25	150
Distracted inside	240	119	99	81	71	90	83	87	84	154	1,108
Distracted outside	542	485	374	363	291	287	296	229	296	431	3,594
Emergency vehicle war	6	4	0	1	3	0	3	7	6	5	35
Hand-held phone	11	1	2	3	1	3	5	4	2	10	42
None	8,038	7,818	7,705	7,224	7,041	6,963	6,792	6,200	6,176	6,120	70,077
Other distraction factors	39	31	8	15	5	15	13	12	18	30	186
Pursued by police	34	24	21	12	16	11	15	19	11	14	177
Sudden illness	63	28	28	35	29	35	36	30	30	52	366
Total	9,190	8,657	8,330	7,831	7,547	7,492	7,332	6,684	6,704	6,969	76,736

Table 4: Crashes where hand held phone is primary distraction factor for all controllers aged 16-24, 2001-2010

	Reporting Year										
Age	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
16	0	0	0	0	0	0	0	1	1	0	2
17	1	1	0	1	0	1	1	0	1	3	9
18	2	1	2	5	1	1	0	2	1	3	18
19	4	2	0	2	0	0	2	2	3	1	16
20	4	1	2	2	0	1	2	0	1	1	14
21	6	1	2	1	0	0	1	2	1	3	17
22	1	0	1	0	0	2	1	2	0	2	9
23	1	0	2	2	0	1	1	2	2	5	16
24	3	1	1	0	1	0	2	1	2	4	15
Total	22	7	10	13	2	6	10	12	12	22	116

Table 5: Crashes where hand held phone is primary distraction factor for controllers with P1 licence aged 16-24, 2001-2010

	Reporting year										
Age	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
16	0	0	0	0	0	0	0	0	0	0	0
17	1	1	0	1	0	1	1	0	0	2	7
18	1	1	1	3	0	1	0	1	0	0	8
19	1	0	0	1	0	0	2	0	0	1	5
20	0	0	0	0	0	0	0	0	1	0	1
21	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	1	0	0	1
23	0	0	0	0	0	1	0	1	0	1	3
24	0	0	0	0	0	0	0	0	0	1	1
Total	**3**	**2**	**1**	**5**	**0**	**3**	**3**	**3**	**1**	**5**	**26**

Table 6: Crashes where hand held phone is primary distraction factor for controllers with P1 licence aged 16-24, 2001-2010

	Reporting year										
Age	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
16	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0
18	0	0	1	1	0	0	0	0	1	1	4
19	0	0	0	1	0	0	0	2	2	0	5
20	0	0	1	0	0	1	1	0	0	0	3
21	0	0	1	0	0	0	0	0	1	2	4
22	0	0	0	0	0	0	0	0	0	2	2
23	0	0	0	1	0	0	0	0	0	1	2
24	0	0	0	0	0	0	0	0	0	1	1
Total	**0**	**0**	**3**	**3**	**0**	**1**	**1**	**2**	**4**	**7**	**21**

Table 7: Crashes where passenger is primary distraction factor for controllers aged 16-24, 2001-2010

	Reporting Year										
Age	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
16	3	2	2	1	0	2	0	0	0	2	12
17	18	12	6	5	6	5	7	3	10	7	79
18	9	4	4	4	6	3	6	6	4	10	56
19	12	8	4	9	3	4	4	1	4	11	60
20	9	7	3	2	6	2	5	3	2	7	46
21	6	3	3	4	1	2	7	3	1	5	35
22	6	3	2	2	1	2	1	2	2	6	27
23	4	6	1	1	4	1	3	0	0	7	27
24	7	3	1	4	3	3	3	7	3	7	41
Total	**74**	**48**	**26**	**32**	**30**	**24**	**36**	**25**	**26**	**62**	**383**

Table 8: Crashes where passenger is primary distraction factor for controllers with a P1 Licence aged 16-24, 2001-2010

	Reporting Year										
Age	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
16	0	0	0	0	0	0	0	0	0	0	0
17	17	10	6	4	5	5	7	3	8	6	71
18	4	1	4	2	5	2	5	5	3	5	36
19	3	0	1	3	2	1	1	0	3	2	16
20	1	2	1	0	1	0	4	0	0	2	11
21	0	0	2	1	1	2	0	0	0	1	7
22	0	1	1	0	0	1	1	0	0	1	5
23	1	0	0	0	0	0	1	0	0	0	2
24	1	0	1	0	1	0	0	2	0	1	6
Total	**27**	**14**	**16**	**10**	**15**	**11**	**19**	**10**	**14**	**18**	**154**

Table 9: Crashes where passenger is primary distraction factor for controllers with a P2 Licence aged 16-24, 2001-2010

	Reporting Year										
Age	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
16	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	1	1	1	0	1	1	5	10
19	0	1	1	5	1	2	2	1	1	6	20
20	0	0	1	1	5	1	0	2	1	3	14
21	0	0	0	0	0	0	2	1	1	0	4
22	0	0	0	0	0	1	0	1	0	2	4
23	0	0	0	0	2	0	2	0	0	4	8
24	0	0	0	0	0	0	0	1	0	1	2
Total	**0**	**1**	**2**	**7**	**9**	**5**	**6**	**7**	**4**	**21**	**62**

Table 10: Crashes where distraction outside vehicle is primary distraction factor for all controllers aged 16-24, 2001-2010

	Reporting year										
Age	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
16	15	9	9	10	4	3	6	5	11	13	85
17	187	164	140	128	122	109	109	82	80	121	1,242
18	210	161	144	133	111	110	114	97	96	129	1,305
19	188	174	130	119	120	126	125	84	88	136	1,290
20	189	151	138	111	109	92	103	80	94	135	1,202
21	160	135	114	107	90	107	102	81	102	134	1,132
22	152	116	118	119	91	86	81	69	89	132	1,053
23	157	124	109	90	99	85	81	74	81	139	1,039
24	128	111	91	81	71	76	109	71	72	128	938
Total	**1,386**	**1,145**	**993**	**898**	**817**	**794**	**830**	**643**	**713**	**1,067**	**9,286**

Table 11: Crashes where other distraction factor is primary distraction factor for all controllers aged 16-24, 2001-2010

	Reporting year										
Age	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
16	1	1	0	0	1	0	0	0	0	1	4
17	15	14	4	5	4	3	8	3	11	8	75
18	11	8	7	6	9	6	4	10	9	8	78
19	13	18	3	2	1	8	6	8	9	14	82
20	15	12	1	5	4	4	5	5	10	20	81
21	9	5	0	3	3	3	7	5	6	5	46
22	10	5	3	4	3	5	7	8	8	5	58
23	10	7	0	3	3	4	4	5	4	7	47
24	7	3	2	4	0	4	4	3	3	9	39
Total	**91**	**73**	**20**	**32**	**28**	**37**	**45**	**47**	**60**	**77**	**510**

Table 12: Crashes where distraction inside vehicle is primary distraction factor for all controllers aged 16-24, 2001-2010

	Reporting Year										
Age	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Total**
16	2	4	0	3	2	3	1	3	2	4	24
17	103	58	49	38	41	57	38	50	44	53	531
18	105	58	44	39	57	45	53	50	49	80	580
19	92	44	44	35	44	43	35	41	51	58	487
20	75	43	39	33	35	36	36	33	26	55	411
21	55	35	28	25	23	36	18	34	35	49	338
22	44	28	23	34	19	21	12	19	17	38	255
23	49	22	17	23	26	18	20	12	22	50	259
24	49	21	19	17	18	24	19	19	24	29	239
Total	**574**	**313**	**263**	**247**	**265**	**283**	**232**	**261**	**270**	**416**	**3,124**