

FURTHER INFORMATION ON THE PROPOSAL TO LOWER THE ADULT DRINK DRIVE LIMIT TO BAC 0.05

MARCH 2010



Executive Summary

This paper provides further information on the proposal to lower the legal adult Blood Alcohol Content or Concentration¹ (BAC) from BAC 0.08 to BAC 0.05. The proposal is one of the first actions that Cabinet will consider as part of the *Safer Journeys* strategy. The key decision that will be made is whether the adult drink drive limit should be lowered to BAC 0.05 or whether further research is required.

The key points that emerge from the available evidence are that:

- there are nearly 300 studies that look at the impairment effects of alcohol at different levels of BAC. This research concludes that impairment starts at very low BACs and the vast majority of drivers are affected or impaired at BAC of 0.05 with significant impairment at BAC 0.08
- each year adult drivers with a BAC between 0.05 and 0.08 are responsible for at least 7 deaths, 45 serious injuries, and 102 minor injuries. This is a social cost of \$56.5 million
- Australian and Danish experience suggests that one of the key strengths of a limit of BAC 0.05 is its ability to reduce the number of drivers with very high blood alcohol levels (e.g. BAC 0.1 and above). This is important, as if we could reduce the number of drivers with very high blood alcohol levels, we would make a substantial impact on the number of alcohol related deaths and serious injuries
- a limit of BAC 0.05 requires people to make responsible decisions (ie to either stop drinking before they reach the limit, or to not drive) when they are still able to. People close to the higher BAC 0.08 limit are less able to do this
- a limit of BAC 0.08 is out of line with the level of risk most New Zealanders would consider to be acceptable among drivers. When New Zealanders are asked what limit should be placed on the number of standard drinks before driving 85 percent of people favour a limit equivalent to BAC 0.05 or lower. Only 2 percent favour a limit equivalent to BAC 0.08
- lowering the adult limit to BAC 0.05 is estimated to save between 15 and 33 lives and prevent 320 to 686 injuries every year. This corresponds to an estimated annual social cost saving of between \$111 million and \$238 million.

Background

The *Safer Journeys* strategy was released on 3 March 2010. The strategy is designed to guide New Zealand's efforts to improve road safety for the next 10 years. The first actions will be implemented from 2010 and will focus on introducing a package of initiatives that will have the greatest impact on road safety. Addressing alcohol impaired driving is one of the top priorities for action in the strategy.

¹ The Blood Alcohol Content (BAC) is the amount of alcohol in the bloodstream. A BAC of 0.05 means you have 0.05 grams of alcohol in every 100ml of your blood.

Within this area one of the first initiatives to be considered by Cabinet, and one of the key decisions to be made, is whether the adult drink drive limit should be lowered to BAC 0.05 or whether further research is required.

This paper outlines what is currently known about this issue, and gives consideration to some of the main arguments against lowering the adult drink drive limit.

Main arguments raised for not lowering the adult limit

As a way of presenting the information, this paper explores the six main arguments raised in the Safer Journeys submissions for not lowering the adult BAC from 0.08 to 0.05. These objections are:

- there is insufficient evidence that driving between BAC 0.05 – BAC 0.08 is unsafe
- the main problem is repeat offenders
- the majority of drivers killed have blood alcohol levels higher than the existing limit of BAC 0.08 and lowering the limit will not have an impact on this
- a limit of BAC 0.05 would target and penalise responsible drivers
- drink driving is a youth issue so lowering the adult limit is unnecessary
- lowering the BAC will result in a reduction in mobility and social connectedness for members of rural communities.

Objection 1 - There is insufficient evidence that driving with a BAC between 0.05 – 0.08 is unsafe

The first objection was expressed in the submissions as either:

“The benefit of a lower BAC has not been demonstrated... (and) existing analyses ‘cherry pick’ the international data”; or

“Comparatively few New Zealanders are killed in alcohol related transport incidents where drivers record a BAC in the 0.05–0.08 range”

Research on the effect of alcohol on driving performance and behaviour, coupled with the gains realised in virtually all jurisdictions that have lowered the adult limit, strongly support the argument for change. A BAC of 0.05 is standard in the great majority of developed countries, and some countries have lowered their adult limits even further (e.g. Sweden and Norway).

Research on the effects of alcohol and driving performance

The effect of alcohol on driving has been comprehensively researched over the last 50 years. The Ministry is aware of reviews examining the findings of nearly 300 studies that look at the impairment effects of alcohol at different levels of BAC while driving.

The findings from this extensive body of research are very consistent. It concludes that critical driving abilities such as vision, steering and braking are among the most sensitive to alcohol, and a driver with a BAC of 0.08 is significantly impaired. Evidence also shows that driving performance begins to become significantly impaired at BAC 0.05 and that the vast majority of drinking drivers are affected by alcohol at this level.

After drinking the brain works less efficiently, taking longer to receive messages from the eyes; processing information becomes more difficult, and instructions to the muscles are delayed. In driving, alcohol results in decreased visual ability, poor judgement, increased risk-taking behaviour, lower vigilance, and increased reaction time. A summary of the effects of different levels of alcohol on the abilities needed for safe driving is given in Table 1 below. The table shows the BAC level at which the effect is first observed.

Table 1 - Effects of different levels of alcohol on driving performance

BAC level	Effects on driving ability
0.02-0.04	<p>There is no evidence of a threshold level for alcohol. Whatever the level of BAC examined at least some driving skills can be demonstrated to be impaired</p> <p>Vision Begins to be affected at BAC 0.02 eg peripheral vision is reduced by 6 percent. At BAC 0.03 the ability to judge the vehicle's position on the road and focus on and track the movement of other vehicles, are affected.</p> <p>At 0.04 'tunnel vision' becomes an issue. The eye spends longer fixed on an object trying to perceive its nature. This means fewer objects can be seen in any given time. Drivers are literally 'looking less'. This is because a driver's ability to focus is impaired by alcohol's relaxing effect on the muscles that control the shape of the eye's lens.</p> <p>Alertness Reduction in ability to remain alert at BAC 0.03 (e.g. the ability to monitor and adjust speed to match the flow of traffic).</p> <p>Divided attention Decline in ability to perform two tasks at the same time begins (e.g. drivers start focusing more on steering and miss out what is happening around them).</p> <p>Perception Decline in ability to judge time and distances begins (e.g. ability to estimate how far away another vehicle is in order to safely proceed through an intersection or change lanes).</p> <p>Psychomotor skills Steering errors are noticed at 0.03 and collision frequencies rise. A recent study found that braking ability decreased by about 30 percent at 0.03.</p> <p>Reaction time Reaction time begins to be affected (e.g. the time to decide whether to brake or swerve to avoid an oncoming vehicle).</p>
0.05	<p>Vision and perception Ability to focus on and track the movement of other vehicles, or to maintain lane position as the direction of the road changes, is impaired. These tracking errors can contribute to run-off road crashes and head-on crashes.</p> <p>Ability to judge time and distances is impaired eg drivers will have difficulty changing lanes, passing other cars, or determining whether a vehicle is moving towards or away from them.</p> <p>Psychomotor skills eg steering, braking, changing gears Steering accuracy is impaired (e.g. studies show that drivers will hit substantially more cones in an evasive manoeuvre at 50 km/hr). Inaccurate cornering and braking can result in crashes at 0.05.</p> <p>Reaction time Reaction time is impaired eg it takes significantly longer to respond to road hazards, road signs and traffic signals and stopping distances are significantly increased. The combination of</p>

	<p>perceiving objects later and then taking longer to react to them means an increase in 'thinking time' so that it takes significantly longer to slow or stop the vehicle to avoid a collision.</p> <p>The increases in stopping distances are typically 2.8 metres travelling at 50 km/h, 3.9 metres travelling at 70 km/h, and 5.6 metres travelling at 100 km/h.</p>
0.08	<p>Vision, perception and divided attention Vision, perception and divided attention skills will all be significantly impaired (e.g. some drivers will suffer from double vision).</p> <p>The reduction in peripheral vision will have increased to 20% so drivers are less likely to see vehicles and objects outside of their central field of vision.</p> <p>Drivers will deviate from their lane, be unable to control speed, there will be incorrect responses to traffic signals. Drivers have significantly reduced ability to recognise and respond to potential hazards, road layout changes and emergency situations.</p> <p>Psychomotor skills (e.g. steering, braking, changing gears) Steering and braking ability are significantly impaired.</p> <p>Judgement and risk taking Impairment in judgement, decision making, decrease in patience and self-control. A driver is more likely to take risks eg the decision to drive or take risks while driving. People will begin to overestimate their driving abilities and underestimate the level of alcohol they have consumed.</p>

Recent research has demonstrated that impairment is magnified when alcohol consumption and fatigue are combined. In New Zealand, the peak drink-driving times of late evening and early morning coincide with fatigue risk periods. This suggests that lowering the adult drink drive limit could have the added benefit of being an effective way to reduce the level of risk over this key time period for alcohol/fatigue related crashes.

What is the current level of injury caused by drivers between BAC 0.05 and 0.08?

We do not know the exact extent of the harm caused by drivers with a BAC between 0.05 and 0.08. From 2004 to 2008, 18,729 drivers were involved in fatal or serious injury crashes and of these, 2,063 had a BAC level recorded in the crash analysis system. However, a further 1,329 drivers were suspected of being impaired by alcohol but a BAC was not recorded.

There are several reasons why the data is incomplete, including that:

- if a BAC reading is obtained, but it is lower than the legal limit of 0.08 for adults then it is not required to be recorded
- some medical interventions (eg insertion of drips) make it impracticable to obtain a blood sample for testing
- in some cases long time delays between the crash and the police request for a blood alcohol sample from hospital staff mean a relevant BAC cannot be obtained.

However based on the alcohol related crashes that occurred over 2004–2008, we estimate that adult drivers with a BAC of between 0.05 and 0.08 are responsible annually for at least 7 deaths, 45 serious injuries and 102 minor injuries. These figures are based on the number of casualties where the blood alcohol levels are known, combined with an estimate for those where the blood alcohol levels are unknown. We assumed that the 'unknowns' were split in the same way as the 'knowns'.

Based on our estimate, the annual social cost of crashes caused by drivers with a BAC between 0.05 and 0.08 is \$56.5 million. ACC estimate the cost to the ACC scheme of the claims arising from these road crashes to be \$28.5 million.

Another way to consider the level of harm from drivers between BAC 0.05–0.08 is to compare it to the number of people killed annually in other transport modes (see Table 2).

Table 2 - Annual number of deaths across other transport modes

	2006	2007	2008
BAC 0.05 to BAC 0.08 related deaths	7	7	7
Pedal-cyclists	9	12	10
Pedestrians	44	45	31
Rail	18	11	13
Maritime	15	9	25
Aviation	12	4	14
<i>Estimated lives saved from lowering the limit to BAC 0.05</i>	15–33	15–33	15–33

The number of deaths caused by drivers between BAC 0.05–0.08 is roughly half the number that occurs in the rail industry, and over two-thirds of the number of cyclists killed every year.

Also shown in the table, is the number of lives that we estimate could be saved from lowering the adult limit. The number is greater than seven lives because of the likely effectiveness of a lower limit in reducing the level of alcohol consumption across all drivers. In countries where the adult limit has been lowered, a key gain has been the reduction in the number of drivers with very high BAC levels. This is discussed further in the paragraphs on the experience in other jurisdictions.

Relative risk of being killed in New Zealand at different BAC levels

The risk of being killed in New Zealand while driving at different BAC levels was estimated using our data on drivers involved in fatal crashes². The relative risks are shown in Table 3.

Table 3 – Relative risk of fatal crash by blood alcohol level and age

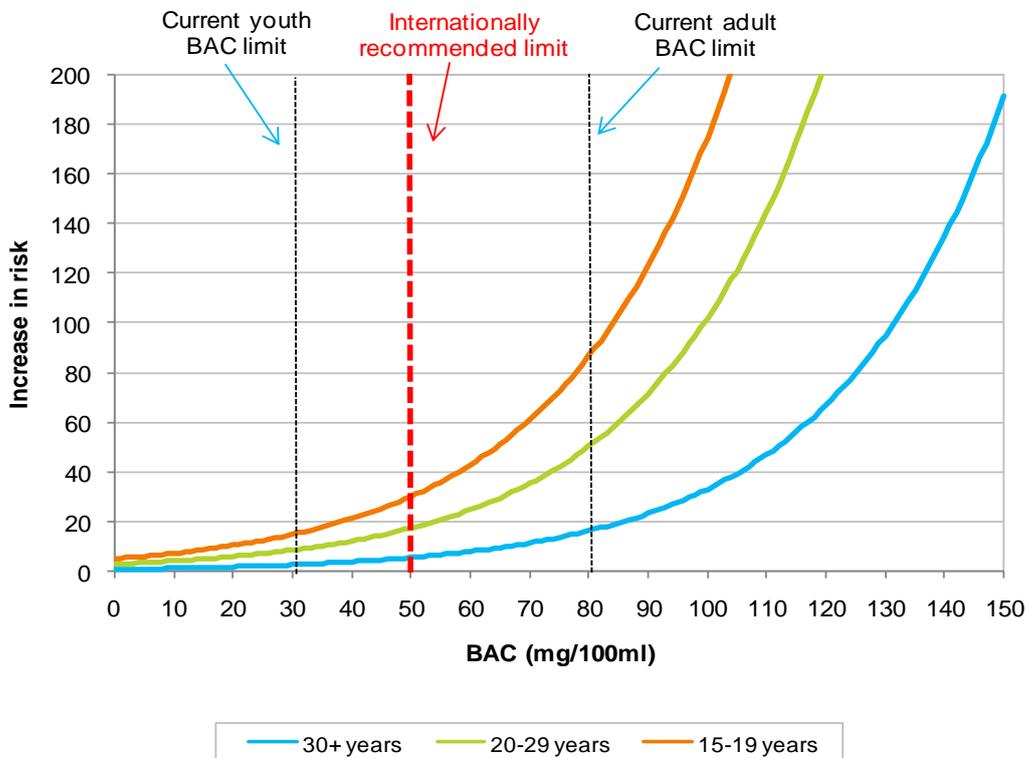
BAC	30+ years	20-29 years	15-19 years
0	1	3	5.3
0.03	2.9	8.7	15
0.05	5.8	17.5	30.3
0.08	16.5	50.2	86.6

The table shows that at BAC 0.08, adult drivers over 30 years are about sixteen times more likely to be involved in a fatal crash than if they were sober. Adults aged between 20–29 years are about 50 times as likely. These same results are shown graphically in Figure 1. As can be seen from the graph, at BAC levels greater than 0.08 the rate of exponential increase in risk is greater.

² Keall, M.D, Frith, W.J and Patterson, T.L. (2004) The influence of alcohol, age and the number of passengers on the night-time risk of driver injury in New Zealand. *Accident Analysis and Prevention*, 36(1), 49-61.

Figure 1

Relative risk of fatal crash by blood alcohol level



What limits apply internationally?

Internationally, the great majority of developed countries with legal blood alcohol limits set a limit of BAC 0.05 or lower. The United Kingdom, Ireland, the United States and four of Canada's 13 provinces and territories are the only western nations that do not. Of these jurisdictions, Scotland is looking to move the United Kingdom to a BAC limit of 0.05. If Scotland does not achieve a consensus with the rest of the United Kingdom it will seek to set its own BAC limit of 0.05. Ireland is currently consulting on lowering its adult limit for driving to BAC 0.05.

Some countries such as Sweden, Norway and Poland have an adult drink drive limit of BAC 0.02 and some countries have a zero limit (e.g. Slovakia, Hungary and the Czech Republic).

Has a lowered limit been effective in other jurisdictions?

To the Ministry's knowledge 10 evaluations have been done on the effects of lowering the limit from BAC 0.08 to 0.05. These studies cover eight jurisdictions. Positive road safety results were reported for six of the jurisdictions, while for the other two the results were mixed. A summary of the evaluations is in Appendix 1.

There are also four studies that examine the effect of lowering the adult limit to BAC 0.03 or 0.02. All four studies report positive reductions in crash statistics associated with the lower limit.³

In Australia, Queensland reported an 18 percent reduction in fatal crashes and a 14 percent reduction in serious crashes associated with the lowering of the BAC limit. New South Wales

³ Source: Fell and Voas (2009), Reducing illegal blood alcohol limits for driving: effects on traffic safety; in Drugs, Driving and Traffic Safety.

reported an 8 percent reduction in fatal crashes, a 7 percent reduction in serious crashes and an 11 percent reduction in night-time single vehicle crashes associated with the lowering of the BAC limit.

In Denmark, results were mixed. The first year of the law change was associated with a decrease in alcohol-related injury crashes, but an increase in alcohol-related fatal crashes. However, the evaluators commented that a longer time series was needed to determine whether this was a result of year-to-year variability, or a trend. This study also found evidence of a significant reduction in the level of drivers with very high BAC levels.

The results for South Australia were also mixed (see Table 4 below). Evaluators commented that they found it difficult to separate out the effect of the introduction of random breath testing from the effect of the change in the BAC limit.

Nevertheless, when all the international evidence on lowering BAC limits is considered lowering the BAC limit to 0.05 appears to be an effective strategy in reducing alcohol impaired driving⁴. Experience also highlights that the strength of the road safety gains from a lowered limit is dependent on having effective enforcement and advertising campaigns.

The Australian experience

Possibly the experience of most relevance to New Zealand is the Australian experience. All Australian states and territories have a general BAC limit of 0.05, with a lower limit of zero, or BAC 0.02, for young novice drivers, and drivers of heavy vehicles and public passenger vehicles. The limit of BAC 0.05 was agreed nationally by Transport Ministers in the late 1980's, but was in force in New South Wales in 1980, Queensland in 1985 and Victoria in 1986.

Table 4 summarises the results of the Australian experience where evaluations were done.

Table 4 – The Australian experience

Jurisdiction	Date limit lowered	Evaluation of change in BAC limit
New South Wales	1980	A lowered limit achieved a 7 percent reduction in all serious crashes, an 8 percent reduction in fatal crashes and an 11 percent reduction in single-vehicle night time crashes.
Queensland	1985	A lowered limit achieved an 18 percent reduction in fatal crashes and a 14 percent reduction in serious crashes.
Australian Capital Territory	1991	A lower limit achieved a 34 percent reduction in the number of drivers random breath tested with BACs over 0.15 and a 58 percent decrease in those over BAC 0.2. There was also a 90 percent reduction in the incidence of driving with an alcohol level between BAC 0.05 and BAC 0.08.
South Australia	1992	Evaluations show mixed results: Kloeden and McLean (1997) reported that the number of night time drivers who had been drinking was reduced

⁴ Source: Mann et al (2001); Chamberlain and Solomon (2002); Frith and Strachan (2008); Fell and Voas (2006, 2009)

		<p>by 14% following adoption of the law.</p> <p>McLean et al (1995) found that the BAC 0.05 limit did not significantly affect the number of fatally injured drivers who were legally impaired. However, the study found that the proportion of drivers with very high BACs (BAC 0.15 and above) reduced.</p>
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As well, prior to all Australian states moving to a lower limit, an inter-state comparison was done. This comparison found that states with a BAC 0.08 limit had a higher incidence of fatal crashes involving drink-drivers above 0.08 than states with limits of BAC 0.05.

The Australian and Danish experiences show that lowering the adult limit not only reduces alcohol-related crashes, but it can also reduce the number of drivers with very high BACs. In the Australian Capital Territories' case the reduction was substantial.

Australian evaluators suggested that the lowered limit may have reduced the incidence of drink driving through:

- its reinforcement of the anti drink-driving message, and the change in social pressures and expectations that it generated
- an increased perceived risk of apprehension after a lower number of drinks
- its encouragement of drivers to be more conscious of the amount of alcohol they consume
- requiring people to make a responsible decision (ie to either stop drinking before they reach the limit, or to not drive) when they are still able to. People close to the higher BAC 0.08 limit are less able to do this
- the lower limit's additional incentive to make special arrangements to avoid drink driving (eg nominating one member of a social group to be the sober driver).

Drink driving in Australia now and how does New Zealand compare?

The adult limit of BAC 0.05 has been in place in New South Wales for 30 years, in Queensland for 25 years, in Victoria for 24 years, and for the remaining states and territories for 17–18 years. Queensland is currently consulting on a proposal to lower the adult drink drive limit to BAC 0.02.

Comparing our road safety outcomes with Australian outcomes, the lower adult drink drive limit is likely to be part of what makes a positive difference in terms of alcohol related crashes. Based on the Australian results for 2006 (the latest available), around 22 Australians die in alcohol-related road crashes per one million population. This compares with 28 New Zealanders per one million population in 2008. Of the limited state data that is available, in Victoria 16 Australians die per one million population.

Another indicator of the prevalence of drink driving is the results from Police breath testing operations. Nationally about 1 in 150 Australian drivers tested exceed the legal limit of BAC 0.05. In contrast, 1 in 85 New Zealand drivers exceed our limit of BAC 0.08.

However, there is a wide variation between the Australian jurisdictions. For example, the rate in Victoria is 1 in 314 drivers, in Queensland it is 1 in 192 drivers and in the Northern Territory it is 1 in

42 drivers. The Northern Territory is unlike the rest of Australia in terms of its road safety outcomes. It has a rate of road deaths of 34.1 per 100,000 population compared with 6.9 deaths across Australia as a whole.

Objection 2 - The main problem is repeat offenders

Some submitters oppose lowering the drink drive limit because they consider the key problem to be repeat offenders. However, analysis of the crash involvement of drink drive offenders does not support this view.

Table 5 shows the proportions of drivers involved in Police-reported casualty crashes between 2005–2007 by prior offence history.

Table 5
Prior offending history of drivers involved in alcohol related crashes between 2005-2007⁵

Prior offending history period	Number of prior drink-driving offences within prior history period	Proportion of drivers involved in alcohol related crashes between 2005-2007		
		Alcohol involved casualty crashes ⁶	Alcohol involved serious and fatal crashes ⁷	Alcohol involved fatal crashes ⁸
5 years	None	76%	77%	77%
	One	18%	16%	15%
	Two	5%	5%	5%
	Three or more	1%	2%	3%
10 years	None	67%	68%	70%
	One	20%	19%	17%
	Two	8%	8%	7%
	Three or more	5%	5%	6%
Lifetime	None	62%	65%	67%
	One	18%	16%	13%
	Two	9%	8%	7%
	Three or more	11%	11%	13%

As can be seen from the table, 76 percent of the drivers involved in alcohol related casualty crashes between 2005-2007 had no previous drink-driving offences within the 5 years prior to the crash. Eighteen percent of these drivers had one prior drink-driving offence, five percent had two prior drink-driving offences, and one percent had three or more prior drink-driving offences.

The available evidence suggests that the drink drive problem cannot be typified as a problem of repeat offenders. However, repeat offenders are part of the problem. They are involved in about a quarter of casualty crashes.

⁵ The information is limited to those crash-involved drivers with valid licences only when linking the Crash Analysis System and Driver Licence Register information. Approximately 12% of the crash-involved drivers were either missing or had an invalid driver licence number for these analyses.

⁶ Drivers involved in alcohol related casualty crashes comprise 9% of all drivers involved in casualty crashes during 2005-2007.

⁷ Drivers involved in serious or fatal alcohol related casualty crashes comprise 14% of all drivers involved in serious or fatal crashes during 2005-2007

⁸ Drivers involved in fatal alcohol related crashes comprise 18% of all drivers involved in fatal crashes during 2005-2007

The fact that a drink driver is more likely to be a first time offender, than a repeat offender, is consistent with the findings from surveys looking at alcohol use and driving. The Ministry of Health's Alcohol Use in New Zealand 2007/08 survey suggests that around 20 percent of people who have drunk alcohol over the last year have also driven a vehicle while feeling under the influence of alcohol.

Any decision to lower the adult drink drive limit to lower the safety risk across the general driving population as a first step would be supported by measures focused on repeat offenders. Safer Journeys proposes introducing compulsory alcohol interlocks to address the risks posed by repeat offenders. Of the two initiatives, lowering the adult drink drive limit would bring the greatest road safety gains. We estimate the social cost saving to be between \$111 million and \$238 million, compared with a saving of between \$12.3 million and \$48 million⁹ from compulsory alcohol interlocks.

Objection 3 - The majority of drivers killed have blood alcohol levels higher than the existing limit of BAC 0.08

The third objection is that the majority of drivers killed in alcohol crashes have blood alcohol levels significantly above BAC 0.08.

The fact that drivers well above BAC 0.08 are the majority of drivers killed is not surprising. As can be seen from Figure 1, the risk of a fatality above BAC 0.08 is extreme compared to a sober driver. At BAC 0.15 a driver is over 180 times more likely to be involved in a fatal crash. However, drivers at BAC 0.05–BAC 0.08 are still driving with a high crash risk. At BAC 0.08 a driver over 30 years is 16 times more likely to be involved in a fatal crash than if they were sober; and over 50 times more likely if they are aged between 20 and 29 years.

Nevertheless, by reducing the number of drivers with very high blood alcohol levels, we would make a substantial impact on the number of alcohol related deaths and serious injuries.

Some submissions have suggested that the best way to tackle high level drink drivers is to increase penalties. Safer Journeys includes a proposal to review penalties for causing deaths and injuries. However, a lowered adult limit supported by the introduction of alcohol interlocks would be the most effective initiatives in reducing the numbers of road death and injury. This is because, as is mentioned above, international evaluations show that a lowered adult limit is an effective way to reduce higher level drink-driving.

For example, in the Australian Capital Territory following the lowering of the limit to BAC 0.05, drivers stopped in random breath tests recording results between the BAC limits of 0.15 and 0.2 declined by 34 percent, and those above 0.2 declined by 58 percent.

A key part of why a lowered limit is effective is that it encourages drivers to keep a better count of the drinks they consume in order to stay within the limit. As well, at BAC 0.05 people are required to make a responsible decision (to either stop drinking or to not drive) while they are still able to. Once blood alcohol content reaches 0.08, people are less able to make responsible decisions. In this way a lower BAC limit can have a strong preventative effect.

Raising penalties would not necessarily yield the same gains as lowering the adult limit as our penalties are already reasonably high. A comparison of our drink drive penalties with those of the Australian states and territories is given in Appendix 2. It shows that our penalties are broadly in line with those in Australia but our fines tend to be higher and periods of disqualification shorter.

Objection 4 - Lowering the BAC would target and penalise responsible drivers

⁹ The range depends on whether interlocks apply from the first or second offence, whether they are installed for 1 or 2 years and whether a 5 year or a lifetime definition of repeat offender is used.

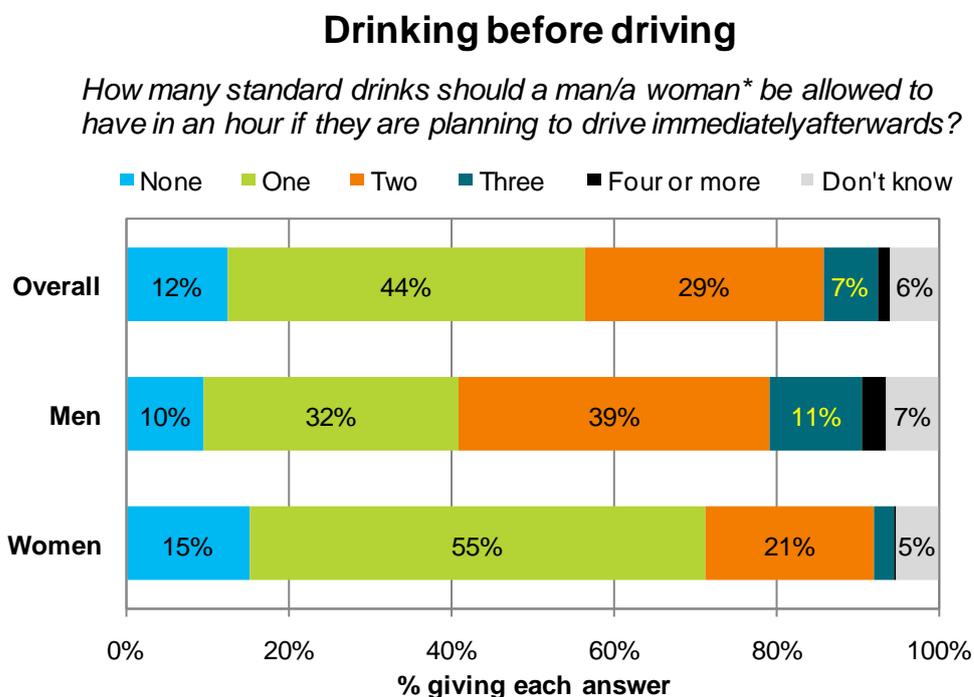
The fourth objection is that a lowered limit would target and penalise responsible drivers. This can be tested by looking at what limit most people would put on drinking before driving, as well as by considering how many additional people are likely to be penalised if the limit was lowered.

To gauge public opinion the following question was asked as part of the Ministry’s Public Attitudes to Road Safety Survey in 2009:

"A ‘standard drink’ is a measure of alcohol equivalent to one can of beer or one small glass of wine. How many standard drinks should a man/a woman (men were asked about men and women were asked about women) be allowed to have in an hour if he/she is planning to drive immediately afterwards?"

The survey sampled 1,650 adults and the responses to the question are summarised in Figure 2 below.

Figure 2



Based on the overall results, 85 percent of people surveyed said drivers should be limited to two or fewer drinks before driving. More than half (56 percent) said drivers should be limited to one drink or no drinks. Two percent said drivers should be permitted four or more drinks in an hour before driving.

Converting these numbers of drinks into BAC levels¹⁰, this survey suggests that only two percent of New Zealanders support the current adult limit of BAC 0.08. Eighty-five percent of people support an adult limit of BAC 0.05 or lower.

¹⁰ The conversion of alcohol consumed into a BAC level can only ever be a guide as gender, body size, empty/full stomach, level of body fat all lead to variations between people. The conversion is based on a person of average height and weight.

These results are consistent with the New Zealand Automobile Association’s survey of members in 2006. This survey found that ‘members were unhappy with the idea of a legal limit allowing more than one or two standard drinks before driving’¹¹.

Public submissions on lowering the adult drink drive limit

Another way to gauge public opinion is to consider the public submissions on the issue. 1,350 people responded to the proposal to lower the adult limit to BAC 0.05 in the Law Commission’s issues paper: *Alcohol in our Lives*. Of the 1,350 submissions, only 27 were opposed to lowering the limit to BAC 0.05 with the remaining 1,323 being in favour.

From the submissions on *Safer Journeys*, three-quarters of the public submitters supported lowering the adult limit and the initiative was ranked the sixth highest preferred initiative out of the 62 suggested initiatives.

How many additional people would be penalised?

Results from the roadside alcohol survey give some indication of the number of people likely to be apprehended if the adult limit were lowered. This survey is now conducted every 2 years, and collects data from compulsory breath testing operations held between the hours of 10pm and 2am on Friday and Saturday nights during February, March, April and May. The survey collects data from all Police districts.

The proportions of adult drivers registering positive alcohol levels over the past eight surveys are shown in Table 6. Based on results from 2004–2008, between 7–12 additional drivers in every 1,000 drivers could be at risk of being apprehended for drink driving if the limit was lowered to BAC 0.05 and they do not subsequently change their behaviour.

However, in practice if the limit were lowered then it is likely to reduce the number of people opting to drink and drive. Australian experience suggests that there would be a short-term increase in the number of offences for about three months.

Table 6 - Proportions of adult drivers registering positive alcohol levels

Year	Number of drivers over 20 years of age tested	0.03-0.05	0.05-0.08	0.08+
1997	19,187	2.7%	2.2%	1.9%
1998	15,209	2.6%	1.7%	1.9%
1999	19,613	2.2%	1.3%	1.4%
2000	19,381	2.1%	1.2%	1.2%
2002	20,884	2.0%	1.3%	1.0%
2004	20,727	1.5%	0.7%	0.5%
2006	20,944	1.7%	1.2%	0.8%
2008	19,608	1.8%	1.0%	0.8%

Based on these numbers, and the surveys of public opinion, it is difficult to find support for the view that a lowered limit would target and penalise responsible drivers.

The wider government effort to reduce alcohol related harm

¹¹ Drink-driving in New Zealand, New Zealand Automobile Association, March 2009.

Another way to consider what constitutes “responsible drink driving”, is to look at the adult drink drive limit from a broader health perspective. The Law Commission’s discussion paper: *Alcohol in our Lives* states that one of New Zealand’s key problems with alcohol is binge drinking. Binge drinking is a problem because of the alcohol-related disease and injury risks it brings.

The Alcohol Advisory Council of New Zealand defines binge drinking to be when a person consumes seven or more standard drinks in a sitting. Based on this definition, a quarter of the adult population are binge drinkers when they drink¹².

The current BAC limit allows a man of average height and weight to consume four drinks per hour or six drinks in 90 minutes. If consumption stops at this point then this is not binge drinking. However seven drinks over two hours would meet the definition of binge drinking, but for some people their BAC may still not be over 0.08.

A BAC of 0.05 is also more consistent with the 2009 National Health and Medical Research Council guidelines for alcohol consumption, published by the Australian government. The key guideline is that for healthy men and women, drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury.

Lowering the adult BAC could contribute to the wider government efforts to reduce alcohol related harm.

Objection 5 – Drink driving is a youth issue

The fifth objection is that drink driving is a youth issue, so lowering the adult limit would be unnecessary. Those objecting appear to be of the view that there is more to gain from lowering the youth drink drive limit to zero and leaving the adult limit unchanged.

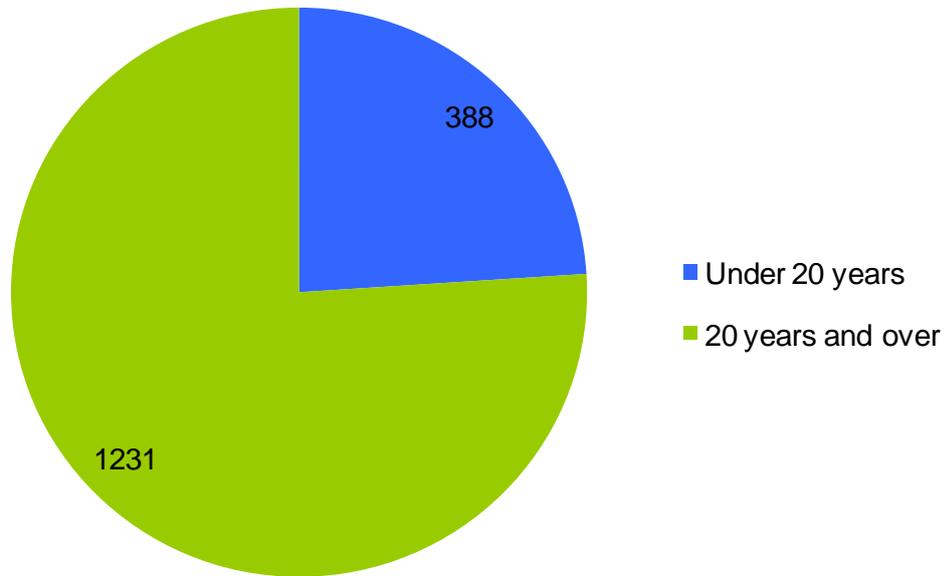
Although 15–19 year olds are more likely to be affected by alcohol than other age groups, young drivers are only a part of the drink drive problem. Figure 3 shows the annual average number of alcohol affected drivers involved in fatal and injury crashes.

The graph shows that while 15-19 year olds feature prominently they only make up 24 percent of alcohol affected drivers involved in crashes. Overall, just over three quarters of all alcohol affected drivers are aged twenty years or older.

¹² ibid

Figure 3

**Annual average numbers of drink drivers involved in crashes,
by age group (2006-2008)**



Teenage drivers have a lower legal limit than those aged twenty and above. Those with blood alcohol levels between BAC 0.03 and 0.08 are over the legal limit and would be shown in the graph. Older drivers with a known level in this range would not be included in the graph.

The fact that young drivers are only a part of the drink drive problem can also be seen in the offender statistics. In 2008, drivers aged 15-19 years were 23 percent of all drink drive offenders.

This helps to explain why lowering the adult drink drive limit would bring an estimated social cost saving of between \$111 million and \$238 million, compared with a saving of \$16.5 million from lowering the youth limit to zero.

Objection 6 - Lowering the BAC will result in a reduction in mobility and social connectedness for members of rural communities

The last objection raised is that lowering the adult drink drive limit will result in a reduction in mobility and social connectedness in rural communities.

However, currently with a drink drive limit of BAC 0.08, more road users are killed or seriously injured through drink drive crashes on rural roads than urban roads. Between 2004 and 2008, 1,863 people died or were seriously injured in alcohol related crashes on rural roads. This makes up about 55 percent of all alcohol related deaths and serious injuries.

Rural road crashes impact greatly on rural communities. If someone is killed or seriously injured this can have a greater impact on the productivity of the community than a similar injury occurring in an urban area. For example, post crash rehabilitation such as follow up GP visits, and/or physiotherapy, can be more difficult to access in rural communities.

Further, a BAC of 0.05 would still allow for responsible social drinking. Australian guidelines suggest that a limit of BAC 0.05 equates to around two standard drinks in the first hour and one standard drink per hour thereafter. For women the limit is one standard drink per hour.

A BAC of 0.08 equates to the consumption of six drinks in 90 minutes. As mentioned earlier this is closer to the definition of binge drinking than to what might typically be considered a 'social drink'. It allows a driver to become significantly impaired and still legally drive. At the legal limit a driver is sixteen times more likely to be involved in a fatal crash than of a sober driver.

Appendix 1

Summary of studies examining the effects of lowering the drink drive limit From BAC 0.08 to BAC0.05

Study	Summary of effects/results
Mercier-Guyon (1988)	France (Haute-Savoie). Alcohol related traffic crash fatalities decreased from 100 before the limit, to 64 in the year after the law change.
Bartl & Esberger (2000)	Austria. Reported a 9.4 percent decrease in alcohol-related crashes relative to the total number of crashes 22 months after the law change. Noted that the reduction was the result of lowering the limit, intense enforcement and media reporting.
Henstridge et al (1997)	<p>Australia. Used time series analysis to analyse effects of random breath testing and BAC laws controlling for factors including seasonal effects, weather, economic trends, road use, alcohol consumption, day of week.</p> <p>Queensland, Australia. Reported an 18 percent reduction in fatal crashes and a 14 percent reduction in serious crashes associated with the lowering of the BAC limit. These results were not confounded with the effects of random breath testing.</p> <p>New South Wales, Australia. Reported an 8 percent reduction in fatal crashes, a 7 percent reduction in serious crashes and an 11 percent reduction in night-time single vehicle crashes associated with the lowering of the BAC limit.</p>
Smith (1988)	Queensland, Australia. Significant 8.2 percent reduction in night-time serious injury crashes and a 5.5 percent reduction in night-time property damage crashes associated with lowering the BAC limit in the first year. Noted that the result was partly the result of increased enforcement.
Deshapriya & Iwase (1998)	Japan. Trend analyses indicated that lowering the BAC limit reduced both alcohol-related traffic crashes and the number of drink drivers.
Bernhoft & Behrensdoerff (2003)	Denmark. Results reported a decrease in alcohol-related injury crashes and an increase in fatal alcohol-related crashes in the first year after the new limit. The authors noted that a longer time series is needed post-law change to determine whether results were a result of year-to-year variability or a trend. Also found evidence that there was a significant change from drivers with higher BAC levels towards lower BAC levels.
Kloeden & McLean (1997)	South Australia. Reported that the number of night-time drivers who had been drinking was reduced by 14.1 percent following the introduction of the law.

Homel (1994)	South Australia. Reported that lowering the limit was associated with a significant 13 percent reduction in fatal crashes on Saturdays.
McLean et al (1995)	South Australia. Found a short-term reduction in the percentage of late night drivers with a BAC at or over 0.08 but it was not sustained. They observed a continued decrease in both drink-driving and the involvement of alcohol crashes over time. The change in limit did not significantly affect the observed trend in the number of fatally injured drivers who were legally impaired.
Brooks & Zaal (1993)	Australian Capital Territory, Australia. Reported an overall significant drop of 26 percent in the incidence of high BAC levels (readings above 0.10) obtained from Roadside Breath Tests in the year after the law change. The decrease in high BAC levels was higher for BAC levels above 0.15. Similar results were also found for the BAC levels of crash involved drivers.

Appendix 2 -Comparison of New Zealand's adult drink drive penalties with those in the Australian states and territories

Jurisdiction		0.05 < 0.08 BAC	0.08 < 0.15 BAC	Over 0.15	Drive Under the Influence (DUI)	Other requirements
New Zealand	First offence		<p>Above 0.08 – first (and second) offence</p> <p>Mandatory minimum disqualification of 6 months. Maximum fine of \$4,500. Maximum prison sentence of 3 months.</p>			<p>Immediate on the spot 28 day licence suspension if a person:</p> <ul style="list-style-type: none"> • drives with more than 130 milligrams of alcohol per 100 millilitres of blood • refuses to take a blood test for excess blood alcohol, or refuses to supply a blood sample • is caught drink-driving and has been convicted of a similar offence within the previous four years
	Subsequent offence		<p>(Third and) subsequent offence</p> <p>Mandatory minimum disqualification of more than one year. Maximum fine of \$6,000. Maximum prison sentence of 2 years.</p>			
Northern Territory	First offence	\$200 infringement or \$550 court imposed fine or 3 months prison for first offence	\$750 or 6 months prison + 6 months disqualification	\$1,000 or 12 months prison + 12 months disqualification	\$1000 or 12 months prison + 6 months disqualification	Must complete Drink Driver Education course to be eligible to reapply for drivers licence

	Subsequent offence	Second offence in 3 years – \$750 court imposed fine or 6 months prison and 3 months court imposed disqualification Third and subsequent offence in 3 years – 6 months court imposed disqualification, \$750 court imposed fine or 6 months prison	\$2,000 or 12 months prison + 12 months disqualification	\$2,000 or 12 months prison + 18 months disqualification (immediate suspension)	\$2,000 or 12 months prison + 12 months disqualification (immediate suspension)	
Australian Capital Territory	First offence	\$500 + 6 months disqualification	\$1,000 or 6 months prison or both + 12 months disqualification	\$1,500 or 9 months prison or both + 3 years disqualification		Court may give offenders the option of attending a drink-drive rehabilitation course which may be taken into account when setting penalties etc, or the Court may refer offenders to rehabilitation programme
	Subsequent offence	\$1,000 + 3-12 months disqualification	\$1,000 or 6 months prison or both + 3 years disqualification	\$2,000 or 12 months prison or both + 5 years disqualification		
New South Wales	First offence	Maximum \$1,100 court imposed fine and 3 to 6 months disqualification for first offence	\$2,200 or 9 months prison + 6 months unlimited disqualification (12 months without court order). Immediate licence suspension	\$3,300 or 18 months prison + 12 months minimum disqualification (3 years without court order). Immediate licence suspension	\$3,300 or 18 months prison + 6 months unlimited disqualification (3 years without court order)	Drivers/riders who accumulate 3 convictions for serious offences within 5 years will be subjected to heavier penalties when declared a “habitual offender” by the court
	Subsequent offence	Maximum \$2,200 fine and 6 months to unlimited disqualification for subsequent offence.	\$3,300 or 12 months prison + 12 months – unlimited disqualification (3 year without court order) Immediate	\$5,500 or 2 years prison + 2 years – unlimited disqualification (5 years without court order) Immediate licence suspension	\$5,500 or 12 months prison + 12 months unlimited disqualification (3 years without court order)	

			licence suspension			
South Australia	First offence	\$438 infringement fine and 4 demerit points (loss of licence if you accumulate 12 or more demerits in a three year period) OR Court penalty up to \$700, 4 demerit points and licence disqualification not less than 3 months.	\$500 – \$900 + 6 months disqualification. Immediate licence suspension	\$700 – \$1,200 + 12 months disqualification. Immediate licence suspension	\$700 – \$1,200 or 3 months prison + 12 months suspension	Mandatory alcohol interlock program for serious alcohol offences ¹³
	Subsequent offence	All subsequent offences - court penalty up to \$700, 4 demerit points and licence disqualification not less than 9 months	\$700 - \$1,200 (2 nd offence) and \$1,100 - \$1,800 (3 rd and subsequent offences) + min 6 months, 12 months and 2 years for subsequent offences within 5 years. Immediate licence suspension.	\$1,200 – \$2,000 (2 nd offence) and \$1,500 – \$2,500 (3 rd and subsequent offences) + 3 years disqualification. Immediate licence suspension	\$1,500 – \$2,500 or 6 months prison + 3 years disqualification	
Tasmania	First offence	\$200 - \$1,000 or 3 months prison + 3 – 12 months disqualification	\$400 - \$2,000 or 6 months prison + 6 – 18 months disqualification	\$500 - \$3,000 or 12 months prison + 12 – 36 months disqualification	\$500 - \$3,000 or 12 months prison + 12 – 36 months disqualification	
	Subsequent offence	\$400 - \$2,000 or 6 months prison + 6 – 24 months disqualification	\$800 - \$4,000 or 12 months prison + 24 – 72 months disqualification	\$1,000 - \$6,000 or 24 months prison + 24 – 72 months disqualification	\$1,000 – \$6,000 or 24 months prison + 24 – 72 months disqualification	

¹³ A serious drink driving offence is defined as: a second or subsequent offence, within a period of 5 years, of driving with a (BAC) at or above 0.08; driving with a BAC at or above 0.15; driving under the influence of an intoxicating liquor; refusing to provide a sample of breath or blood for the purpose of alcohol testing.

Victoria	First offence	\$350.46 fine and 10 demerit points for first offence (3 month loss of licence if you accumulate 12 demerits points).	Cancellation of licence and disqualification from six to 14 months (determined by BAC level) Fine - \$462.50	On-the-spot licence suspension. 15 – 24 months disqualification Fine - \$2753		May be required to complete a driver education program, apply for a Licence Restoration Order, be restricted to zero BAC for 3 years, complete assessments for alcohol problems, or have an alcohol interlock installed.
	Subsequent offence	Traffic infringement notices are not issued for subsequent offences. The matter is dealt with at court and higher penalties apply – fine and minimum cancellation of licence of 6 months.	\$420 + 16 – 28 months disqualification (determined by BAC level)	Up to \$2,556 + 30 – 48 months disqualification. Immediate licence suspension		
Queensland	First offence	\$1,050 or 3 months prison + 3 – 9 months disqualification	\$1,050 or 3 months prison + 3 – 9 months disqualification	As for DUI	\$2,060 or 9 months prison + 6 months disqualification	
	Subsequent offence	\$1,500 or 6 months prison + 3 – 18 months disqualification. 3 rd offence within 5 years – \$2,060 or 9 months prison + 2 years disqualification	\$1,500 or 6 months prison + 3 – 18 months disqualification. 3 rd offence within 5 years – \$2,060 or 9 months prison + 2 years disqualification.	As for DUI	\$45,000 or 18 months prison + 12 months disqualification; 3 rd offence within 3 years, imprisonment and 2 years disqualification.	
Western Australia	First offence	\$100 infringement or \$200 court imposed fine and 3 demerits for BAC 0.05-BAC 0.06 \$100 infringement or \$200 court imposed fine and 4 demerits for BAC 0.06-BAC 0.07 \$100 infringement or	\$200 – \$700 (min) – \$1,500 max + 3 – 6 months disqualification	\$800 – \$2,500 + 6 months disqualification		Introduction of alcohol interlock program, vehicle immobilisation and seizure of keys in conjunction with treatment programs approved by Government.

		\$200 court imposed fine and 5 demerits for BAC 0.07-BAC 0.08				
	Subsequent offence	Court imposed fine \$250 – \$350 (min) \$500 max + 3 months disqualification	\$800 – \$1,200 (min) – \$1,500 max + 6 – 14 months disqualification	\$1,500 – \$3,500 + 6 – 24 months disqualification. Subsequent \$2,000 – 5,000 + 18 months – life disqualification		