The Senate

Economics References Committee

Personal choice and community impacts

Interim report: bicycle helmet laws (term of reference d)

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Senate Economics References Committee

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TABLE OF CONTENTS

Chapter 1

Referral and conduct of the inquiry

1.1 On 25 June 2015, the Senate referred an inquiry into personal choice and community impacts to the Senate Economics References Committee (committee) for inquiry and report by 13 June 2016.[1]

1.2 The committee's terms of reference require it to report on:

> The economic and social impact of legislation, policies or Commonwealth guidelines, with particular reference to:
>
> a. the sale and use of tobacco, tobacco products, nicotine products, and e-cigarettes, including any impact on the health, enjoyment and finances of users and non-users;
>
> b. the sale and service of alcohol, including any impact on crime and the health, enjoyment and finances of drinkers and non-drinkers;
>
> c. the sale and use of marijuana and associated products, including any impact on the health, enjoyment and finances of users and non-users;
>
> d. bicycle helmet laws, including any impact on the health, enjoyment and finances of cyclists and non-cyclists;
>
> e. the classification of publications, films and computer games; and
>
> f. any other measures introduced to restrict personal choice 'for the individual's own good'.

1.3 In accordance with usual process, the committee advertised the inquiry on its website and wrote to relevant persons and organisations inviting submissions to the inquiry.

1.4 To date, the committee has received 485 public submissions and two confidential submissions. The public submissions can be found on the committee webpage.

1.5 The committee has held seven public hearings. At its first public hearing, on 11 September 2015 in Canberra, the committee heard evidence on decision making generally. At its second public hearing, on 3 November 2015, in Parramatta, the committee heard evidence on proposed restrictions on the activities of fans of the Western Sydney Wanderers Football Club. At its third public hearing, on 16 November 2015, in Melbourne, the committee heard evidence on mandatory bicycle helmet laws, and at its fourth public hearing, on 20 November 2015, in Sydney, the committee heard evidence relating to the sale and service of alcohol, with particular reference to NSW's 'lockout' laws. A fifth public hearing in Sydney on 9 March 2016 focused on the sale and use of tobacco and nicotine and e-cigarettes. The committee's sixth public hearing considered the sale and use of marijuana on 11 March 2016 in

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1 *Journals of the Senate* No. 102, 25 June 2015, p. 2832.

Sydney. At its seventh public hearing on 22 April 2016, in Canberra, the committee heard evidence regarding the classification of publications, films and computer games.

1.6 This report focuses on the evidence in relation to the third public hearing and respective term of reference (d) concerning bicycle helmet laws. The witnesses who appeared at the bicycle helmet public hearing on 16 November 2015 are listed at Appendix 1. Additional information in relation to term of reference (d) including questions taken on notice is at Appendix 2.

1.7 The committee thanks all those who have participated in the inquiry so far.

Bicycle helmets and the 'nanny' state

1.8 Mandatory bicycle helmet laws (MHL) were viewed by a considerable number of submitters to the inquiry as a primary example of hard paternalism.[2] They argued that, while the individual should be able to manage the risks involved in a bike ride, the personal choice of the individual to make such judgements is constrained because their assessment of such risk is overridden by the state.[3] These views were expressed by submitters such as Mr Ben Triefus who questioned why Australia can't 'trust its citizens to assess their circumstances and make that choice for themselves'.[4] Similarly, the view was expressed that:

> If we need the law to protect us from ourselves, then what does that say about ourselves? The helmet law is an insult to our civil liberty.[5]

1.9 It was also suggested that the state can only justify interference in the conduct of individual citizens when it is clear that doing so will prevent a greater harm to others.[6] That is, the loss of individual freedom is justified on the grounds of improved outcomes for society generally.[7] The argument was made that MHL breach a fundamental liberty to ride a bicycle without prosecution because an 'individual's head poses no plausible threat to the safety and wellbeing of others'.[8]

1.10 For these reasons, MHL were recognised as an example of overregulation in the name of safety at the cost of personal freedom.[9] Indeed, it was suggested to the committee that MHL are a 'text book example of where the State overreaches itself in

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2 According to the Institute of Public Affairs, hard paternalism 'actively constrains choices, by regulating the circumstance in which a choice may be made, the availability of those choices, and the legality of the choices'. Institute of Public Affairs, *Submission 160*, p. 3.

3 Mr Marcos Pougy, *Submission 9*; Dr Jim Lemon, *Submission 84*, p. 8; Luke Turner, 'Australia's helmet law disaster', *IPA Review*, Volume 64, p. 29.

4 Mr Ben Triefus, *Submission 8*.

5 Freestyle Cyclists Inc., *Supplementary Submission 95*, p. 74. This submission was made in the form of a transcript of comments made by signatories to an on-line petition.

6 Mr Peter Twigg, *Submission 125*, p. 5.

7 Australian Cyclists Party, *Submission 222*, p. [1].

8 Mr Chris Gillham, *Submission 60*, p. 7. See also Mr Marcos Pougy, *Submission 9*.

9 Dr Andreas Schwander, *Submission 18*, p. 1; Mr James Ramsey, *Submission 21*.

imposing norms of behaviour (in this case a dress code) where the matter should be left to the individual'.[10]

1.11 These views were reflected in many submissions to the inquiry. For example, the Bicycle Transport Alliance argued that:

> Compulsory helmet laws have not improved the safety of cyclists. They are simply a continuation of the trend by Australian governments, to get involved in the minutiae of citizens lives, progressively eroding any sense of individual responsibility.
>
> It is time to repeal the legislation and return the decision to wear a helmet back to the person most affected, the cyclist.[11]

1.12 Other related arguments included the view that the individual and societal benefits of cycling (and cycling more often) outweigh the risks of not wearing a helmet and, therefore, the health and social costs.[12] In this regard, the view was put that mandatory helmet laws have had a negative impact on cycling participation rates in Australia as they deter people from cycling.[13] Furthermore, the evidence that MHL has achieved any meaningful reduction in the rate of brain or head injury was questioned.[14] To this end, a considerable number of submitters to the inquiry questioned the efficacy of bicycle helmets, arguing that they serve as a restraint on personal choice and generate no tangible community benefit. These views were encapsulated by Mr Chris Gillham who said:

> The helmet laws are an acknowledged failure for personal freedom and also a total failure for public health and from road safety after 25 years.[15]

1.13 However, in opposition, submitters in favour of MHL argued that the advantages associated with helmets completely outweighed any disadvantages. These views were expressed by Mr David Healy, Co Vice-President of the Australasian College of Road Safety who considered MHL a population-based intervention:

> Essentially that means that for a particular population, for a minor inconvenience to many, you really save lives and reduce serious injuries for a significant minority. It is for these reasons that we have shown such progress. Random breath testing and compulsory seatbelt wearing are

10 Freestyle Cyclists Inc., *Submission 95*, p. [4].

11 Bicycle Transport Alliance, *Submission 82*, pp [2–3].

12 It was argued that this not only includes the net benefit to health and wellbeing, but also to congestion, pollution, carbon emissions, fossil fuel depletion and road safety. Australian Cyclists Party, *Submission 222*, p. [1].

13 Professor Chris Rissel, *Submission 133*, p. 1; Mr Chris Gillham, *Submission 60*, p. 1; Freestyle Cyclists In, *Submission 95*, p. [1].

14 Professor Chris Rissel, *Submission 133*, p. 2.

15 Mr Chris Gillham, Private capacity, *Committee Hansard*, 16 November 2015, p. 3.

examples, and, of course, mandatory wearing of bicycle helmets by cyclists is an excellent example.[16]

1.14 The following chapters consider the arguments for and against MHL.

Legislative framework

1.15 In 1985, the House of Representatives Standing Committee on Road Safety expressed the belief that bicycle helmets would 'considerably reduce the occurrence and severity of head injuries to cyclists'.[17] It noted that the mandatory use of helmets was the objective of several state and territory governments.[18] In its final report, the committee recommended that the cooperation of the states and territories be sought to 'review the benefits of bicycle helmet wearing' and, unless there were persuasive arguments to the contrary, 'introduce compulsory wearing of helmets by cyclists on roads and other public places'.[19]

1.16 In 1989, compulsory helmet wearing was introduced as federal policy. A mandatory standard was introduced under the *Trade Practices Act 1974* that defined the helmets to be worn. Victoria was the first state in Australia and first jurisdiction in the world to introduce bicycle helmet laws on 1 July 1990.[20] The purpose of the legislation was the reduction of both the number and severity of head injuries through the increased use of bicycle helmets by all age groups.[21]

1.17 New South Wales (NSW) introduced legislation on 1 January 1991 for cyclists 16 years and over and for all cyclists on 1 July 1991.[22] The NSW legislation had three primary aims: to increase helmet wearing; to decrease bicyclist fatality and

16 Mr David Healy, Australasian College of Road Safety, *Committee Hansard*, 16 November 2015, p. 29.

17 House of Representatives Standing Committee on Transport Safety, *Bicycle Helmet Safety: Final Report on the Motorcycle and Bicycle Helmet Safety Inquiry*, November 1985, p. 48.

18 House of Representatives Standing Committee on Transport Safety, *Bicycle Helmet Safety: Final Report on the Motorcycle and Bicycle Helmet Safety Inquiry*, November 1985, p. 49.

19 House of Representatives Standing Committee on Transport Safety, *Bicycle Helmet Safety: Final Report on the Motorcycle and Bicycle Helmet Safety Inquiry*, November 1985, p. 50.

20 Australian Transport Safety Bureau, *Road Safety in Australia*: *A Publication Commemorating World Health Day 2004*, 2004, p. 29, https://infrastructure.gov.au/roads/safety/publications/2004/pdf/Safety_Aust.pdf (accessed 27 October 2015).

21 Monash University Accident Research Centre, *Evaluation of the bicycle helmet wearing law in Victoria during its first four years*, August 1995, p. vii, http://monash.edu.au/miri/research/reports/muarc076.pdf (accessed 19 October 2015).

22 Meredyth-Ann Williams, Research Note 17/94, *Evaluation of the NSW Introduction of Compulsory Bicycle Helmet Legislation, Road Safety Bureau*, Roads and Traffic Authority, May 1995, p. i, www.rms.nsw.gov.au/documents/roads/using-roads/bicycles-law-compliance-helmet-use-nsw-1994.pdf (accessed 16 October 2015).

serious injury; and to decrease head trauma.[23] Helmet laws in South Australia and Tasmania came into effect the same year.[24] By 1992, when Western Australia, Northern Territory (NT)[25] and the Australian Capital Territory (ACT) introduced equivalent legislation, bicycle helmets had become compulsory nationwide.[26]

1.18 A number of submitters noted that the states and territories introduced MHL in order to comply with a Commonwealth 10 point road safety program which included bicycle helmets, and thereby secure Commonwealth funding under the black spot road program.[27] Legislation to make bicycle helmets compulsory in the ACT was recognised as an 'essential part of the Prime Minister's 10 point package of road safety initiatives to be implemented in return for funding to eradicate accident black spots'.[28]

1.19 The requirement for use of bicycle helmets is included in the Australian Road Rules (ARR), a national model legislation which is adopted (with variations) by the individual states and territories. The ARRs are developed and maintained cooperatively by the states and territories as a means of encouraging nationally consistent traffic regulation. The maintenance process is managed by the National Transport Commission. While they form the basis of the road rules in each jurisdiction, amendments to the ARRs and their adoption as law continue to be dependent on state and territory decisions.[29]

1.20 Australia became the first country to enact mandatory bicycle helmets with New Zealand and the United Arab Emirates the only other countries to enforce adult helmet use.[30] A number of countries enforce a helmet requirement for children.[31]

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23 Meredyth-Ann Williams, Research Note 17/94, *Evaluation of the NSW Introduction of Compulsory Bicycle Helmet Legislation, Road Safety Bureau*, Roads and Traffic Authority, May 1995, p. iii, www.rms.nsw.gov.au/documents/roads/using-roads/bicycles-law-compliance-helmet-use-nsw-1994.pdf (accessed 16 October 2015).

24 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 5.

25 In 1994, the NT amended the law to permit cyclists over the age of 17 years to ride without a helmet along footpaths or on cycle paths. Mr Chris Gillham, *Submission 60*, p. 7.

26 Cyclists' Rights Action Group, *Submission 159*, p. 1. Mr Colin Clarke, *Submission 4*, Attachment 1, p. 5.

27 See as an example, Mr Chris Gillham, *Submission 60*, p. 7; Freestyle Cyclists Inc., *Submission 95*, p. [1].

28 Minister for Urban Services, Mr Terrence Connolly MLA, *ACT Legislative Assembly Hansard*, 9 April 1992, pp 144–145, http://crag.asn.au/compulsory-helmets-debate-in-the-act-legislative-assembly/ (accessed 27 October 2015).

29 Department of Infrastructure and Regional Development, *Submission 394*, p. 5.

30 New Zealand Transport Agency, 'Cycles. Road rules and equipment'. Factsheet 1, February 2014, www.footballaustralia.com.au/article/wanderers-ceos-statement-on-active-support/h4r9a62ro4dk178evugbu1eup (accessed 21 October 2015); Professor Chris Rissel, *Submission 133*, p. 6.

Recent reviews and recommendations

1.21 In November 2013, the Queensland Parliament Transport, Housing and Local Government Committee tabled its inquiry report on cycling in Queensland. The committee recommended (Recommendation 15) that the Queensland Minister for Transport and Main Roads:

- introduce a 24 month trial which exempts cyclists aged 16 years and over from the mandatory helmet road rule when riding in parks, on footpaths and shared/cycle paths and on roads with a speed limit of 60 km/hr or less; and
- develop an evaluation strategy for the trial which includes baseline measurements and data collection (for example through the CityCycle Scheme) so that an assessment can be made which measures the effect and proves any benefits.[32]

1.22 The Queensland Government did not support the recommendation, noting that the 'weight of evidence confirms the importance of wearing a bicycle helmet while riding'.[33]

1.23 The Queensland Parliamentary Committee had also recommended the enforcement of a minimum overtaking distance as a means of improving the safety of cyclists on the road. Recommendation 8 specified that cars and trucks would have to keep at least a metre away from a cyclist when overtaking in a 60 km/hour zone and 1.5 metres in higher-speed zones. The Queensland Government adopted the recommendation and introduced a two-year trial to take effect from 7 April 2014.[34]

1.24 In 2010, the NSW Parliament's Joint Standing Committee on Road Safety conducted an inquiry into motorcycle and bicycle safety. In its report, the committee

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31 In 2011, the Israeli Parliament amended the country's bike helmet legislation to exempt adults in urban areas while mandatory cycle helmet laws (introduced in 2009) were repealed in Mexico City. Bicycle Helmet Research Foundation, 'Helmet laws repealed or reduced in scope', www.cyclehelmets.org/1214.html (accessed 27 October 2015). Helmets are compulsory for children under 15 years of age in countries such as Sweden, Slovenia and the Czech Republic. European Commission, *Mobility and Transport. Road Safety. Traffic rules and regulations for cyclists and their vehicles*, March 2015, ec.europa.eu/transport/road_safety/specialist/knowledge/pedestrians/special_regulations_for_pedestrians_and_cyclists/traffic_rules_and_regulations_for_cyclists_and_their_vehicles_en.htm (accessed 27 October 2015).

32 Transport, Housing and Local Government Committee, *A new direction for cycling in Queensland*, Report No. 39 – Inquiry into Cycling Issues, Recommendation 15, p. 47, www.parliament.qld.gov.au/documents/committees/thlgc/2013/inq-cyc/rp-39-29nov13.pdf (accessed 16 October 2015).

33 Queensland Government, Response to the Transport, Housing and Local Government Committee's Report No. 39 – *Inquiry into Cycling Issues: A new Direction for Cycling in Queensland*, p. 11, www.parliament.qld.gov.au/documents/committees/THLGC/2014/INQ-CYC/gr-28May2014.pdf (accessed 19 October 2015).

34 Department of Transport and Main Roads, *New cycling rules*, Queensland Government, 20 August 2015, /www.qld.gov.au/transport/safety/rules/other/cyclists/ (accessed 19 October 2015.

acknowledged the contention regarding MHL as it had had taken evidence from witnesses with strong views on both sides of the argument. While recognising the divergent positions on the issue, the committee noted that the 'majority of submissions and the bulk of evidence received' by it 'support the current mandatory use of helmets for bicycle riders'.[35]

35 Joint Standing Committee on Road Safety, *Vulnerable Road Users: Inquiry into motorcycle and bicycle safety*, Parliament of NSW, Report No. 5/54, December 2010, p. 41, https://www.parliament.nsw.gov.au/prod/parlment/committee.nsf/0/9e5130abdfd436a3ca2577ed0002ded3/$FILE/Chair's%20Final%20VRU%20Report%20(Colour).pdf (accessed 27 October 2015).

Chapter 2

Evidence in support of repealing bicycle helmet legislation

2.1 The view that the state should not intervene in a matter of personal choice was reflected in the evidence of a substantial number of individual submitters who argued that MHL had reduced their enjoyment of cycling or had stopped their cycling altogether for reasons of discomfort or inconvenience.[1]

2.2 However, the arguments supporting repeal of MHL varied considerably and ranged from personal preference to consideration of the net societal benefits. These submitters suggested that the compulsory requirement discourages people from riding (thereby forgoing health benefits and contributing to obesity);[2] contributes to the image of cycling as a dangerous activity;[3] and redirects focus away from unsafe infrastructure and poor driver attitudes.[4] Some questioned the evidence that helmet legislation has achieved any meaningful reduction in the rate of brain or head injuries while others contended that there was a potential increase in the risk of brain trauma associated with helmets.[5] These views are further explored in this chapter.

Efficacy of bicycle helmets

2.3 The Bicycle Transport Alliance argued that the introduction of the MHL was a 'political decision taken to create a good image, without any proper research or consideration of the consequences'.[6] Further, the view was put to the committee that 25 years on, there is 'still a lack of international consensus on the effectiveness of a helmet *in the event of an accident*, with the protective effects frequently overstated'.[7] Freestyle Cyclists Inc. continued:

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1 Reasons given included that: helmets cause hair to become messy and create a messed up appearance, especially in relation to cycling to work; the rider's head becomes sweaty; in hot climates, wearing a helmet is very hot and uncomfortable; helmets are inconvenient as cyclists have to carry a helmet with them at all times; a rider is unable to wear a hat underneath, exposing sun to the face and neck; and skin allergies and irritation. Ms Yvonne Poon, *Submission 218*, p. 2; Mr Paul Oborn, *Submission 128*, p. 1; Mr Chris Wright, *Submission 392*, p. 1; Mr Troy Parsons, *Submission 212*, p. 4; Mr Brian Davis, *Submission 269*, p. 1; Mr Edward Stratton-Smith, *Submission 14*; Mr Sam Arman, *Submission 24*.

2 Mr Colin Clarke, Submission 4, Attachment 1, p. 1; Professor Chris Rissel, *Submission 133*, p. 2; CycleSafe, *Submission 4*, p. [3]; Dr Andreas Schwander, *Submission 18*, p. 1; Mr Andrei Chalnev, *Submission 19*.

3 Professor Chris Rissel, *Submission 133*, p. 2; Cyclists' Rights Action Group, *Submission 159*, pp 1–2; Mr Chris Gillham, private capacity, *Committee Hansard*, 16 November 2015, p. 9; Ms Eveliene Ward, *Submission 13*; Mr Richard Oddy, *Submission 22*.

4 Professor Chris Rissel, *Submission 133*, p. 2.

5 Professor Chris Rissel, *Submission 133*, p. 2; Cyclists' Rights Action Group, *Submission 159*, p. 3; Mr Chris Gillham, private capacity, *Committee Hansard*, 16 November 2015, p. 7.

6 Bicycle Transport Alliance, *Submission 82*, p. [2].

7 Freestyle Cyclists Inc., *Submission 95*, p. [1].

> The positive effects of mandatory helmet legislation were assumed to be a reduction in the extent and severity of head injuries to cyclists, including mortality. Whilst there is some evidence that there is a benefit to wearing a helmet *in the event of an accident* (emphasis crucial), the effect on a whole population of mandating helmet wearing would appear to have been that it makes cycling, per unit distance travelled, slightly less safe overall, with no significant improvement in head injury rates or severity.[8]

2.4 Others questioned the efficacy of helmets in protecting cyclists.[9] The key arguments in regard to efficacy included the view that:

- there was no substantive decline in head injury rates following the introduction of MHL;
- helmets only provide protection to the brain when the cyclist is travelling at slow speed; and that
- helmets may actually increase the risk of brain injury.

2.5 In relation to the first point, CycleSafe stated that if helmets had been successful, there would have been a large reduction in head injuries. Similarly, Dr Dorothy Robinson explained that:

> [d]espite the large increases in the percentages of cyclists wearing helmets as a result of the mandatory helmet laws, the proportions of cyclists with head injuries admitted or treated at hospital declined by an average of only 13 [per cent].[10]

2.6 The point was made that if helmet legislation had been effective in preventing head injuries, there would be a fall in head injury incidents but no other injuries.[11] Yet, the committee was informed that a 1996 study in NSW and Victoria found that the decline in cycling was at least as substantial as the decline in head injuries.[12] Further, CycleSafe noted that the data on hospital admissions in Victoria revealed a clear fall in non-head injuries as well as in head injuries.[13]

2.7 Freestyle Cyclists Inc. suggested that the effectiveness of a helmet in the event of an accident has been overstated.[14] It was put to the committee that a soft-shell bicycle helmet only provides brain protection at impact speeds of up to approximately 18 kilometres (km) per hour.[15] At the same time, it was argued that helmets only

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8 Freestyle Cyclists Inc., *Submission 95*, p. [1].

9 Professor Chris Rissel, *Submission 133*, p. 2.

10 D. L. Robinson, 'Head injuries and bicycle helmet laws', *Accident Analysis and Prevention Journal*, Vol. 28, no. 4, p. 473.

11 CycleSafe, *Submission 411*, p. [3].

12 Cyclists' Rights Action Group, *Submission 159*, p. 2.

13 CycleSafe, *Submission 411*, p. [3].

14 Freestyle Cyclists, *Submission 95*, p. [1].

15 Mr Chris Gillham, *Submission 60*, p. 7.

protect against 10 to 15 per cent of head injuries. According to Professor Chris Rissel, MHL have had little impact on head and brain injuries, because the actual risk of such injuries is very low per time or km exposure.[16]

2.8 It was suggested that the average person would not be likely to experience a serious head injury in a lifetime of cycling.[17] Mr Colin Clarke put to the committee that a person cycling two hours per week for 50 years would cycle for a total of 5200 hours and, over that time, only have a one per cent risk of hospital admission for serious head injury.[18]

2.9 The view was also put that helmets may actually increase the risk of brain injury. Mr Bill Curnow, President of the Cyclists' Rights Action Group argued:

> Protecting the brain from injury that results in death or chronic disablement provides the main motivation for wearing helmets. Their design has been driven by the development of synthetic polystyrene foams which can reduce the linear acceleration resulting from direct impact to the head, but scientific research shows that angular acceleration from oblique impulse is a more important cause of brain injury. Helmets are not tested for capacity to reduce it and, as Australian research first showed, they may increase it.[19]

2.10 Mr Curnow further suggested that the most serious brain injury is caused by rapid rotation of the head and not from a direct blow. As helmets have holes for ventilation, he argued that if any of those holes hit a rough surface, such as bitumen, they would grip and twist, with the twisting action causing serious brain injury.[20]

Perceptions of risk

2.11 Some evidence to the committee suggested that MHL had in fact increased the total number of cyclist hospital admissions, rather than decrease them.[21] Mr Chris Gillham stated that a primary cause of this was 'risk compensation', where cyclists ride faster or more dangerously because they believe their helmet will prevent serious injury.[22] He drew on a recent UK study which found that people take more risks when they ride a bike with, rather than without, a helmet and that:

> Cyclists as a proportion of all road crash injuries in Australia have increased by about 80 to 90 per cent over the past 20 years, and that surely indicates that something is wrong.[23]

16 Professor Chris Rissel, *Submission 133*, p. 6.

17 Professor Chris Rissel, *Submission 133*, p. 6.

18 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 23.

19 Mr Bill Curnow, cited in Cyclists' Rights Action Group, *Submission 159*, Attachment 1, p. 1.

20 Mr Bill Curnow, Cyclists' Rights Action Group, *Committee Hansard*, 16 November 2015, p. 5.

21 Mr Chris Gillham, *Submission 60*, p. 7.

22 Mr Chris Gillham, *Submission 60*, p. 7.

23 Mr Chris Gillham, private capacity, *Committee Hansard*, 16 November 2015, p. 2.

2.12 Further, CycleSafe argued that helmet wearing can increase accidents by changing the attitudes of drivers, with drivers giving less room when overtaking helmeted cyclists.[24] Similarly, Mr Clarke argued that:

> The actual risk of serious head injury when cycling is low and the risk of accident increases with helmet use. Also, the risk of impact to the helmet compared with a non-helmeted head increases. The personal perception of improved safety is likely to increase with more accidents and the impacts but in most cases, actual safety is decreasing with more accidents and impacts.[25]

MHL and cycling participation rates

2.13 Mr Clarke drew on road traffic accident data to demonstrate that there had been a decline in cycling participation rates (including amongst children riding to school and adults cycling to work) since the introduction of helmet legislation in Australia.[26] Similarly, Professor Rissel argued that, based on census data, cycling to work levels had not recovered to the 1986 level, with cycling to work representing only 1.2 per cent of journeys in 2006. He made the point that there were fewer cycling trips in Australia in 2011 than in 1985, despite population increases.[27]

2.14 Submitters cited evidence suggesting that helmet laws were associated with a:

- sustained reduction in cycling as a means of transport from 1986 to 2011, accounting for one per cent of all trips to work;[28]
- decline by 36 per cent in the number of people cycling in Melbourne following the introduction of Victoria's helmet laws;[29]
- decline from an upward trend in bicycle trips to work in regional Queensland, peaking at 3.2 per cent in 1991 (prior to the MHL) and which now stands at 1.1 per cent.[30]
- drop of 90.6 per cent of female secondary students cycling in Sydney, down from 214 in 1991 to 20 in 1993;[31] and
- reduction of cycling levels in regional areas of Victoria by 44.5 per cent in 1991-92 compared to 1988-89.[32]

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24 CycleSafe, *Submission 411*, p. [5].

25 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 23.

26 Mr Colin Clarke, *Submission 4*, Attachment 1, pp 8–11.

27 Professor Chris Rissel, *Submission 133*, p. 2.

28 Freestyle Cyclists Inc., *Submission 95*, p. [3].

29 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 6.

30 Freestyle Cyclists Inc., *Submission 95*, p. [3].

31 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 8.

32 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 7.

2.15 Many submitters held the view that the requirement to wear a helmet was consistently identified as a primary barrier to improving cycling rates in Australia.[33] They suggested that the removal of the mandatory requirement would lead to an increase in cycling participation and improve long-term public health as well as positively impact traffic congestion, road safety and pollution levels.[34]

2.16 Submitters argued that the drop in cycling participation brought about by MHL negatively impacted the safety of cyclists because of the 'safety in numbers' effect. That is, the more people that walk or cycle, the safer it becomes to walk or cycle. By diluting the effect of safety in numbers, MHL have the perverse effect of increasing serious injury rates among those who continue to cycle.[35]

2.17 Mr Clarke explained that when motorists expect to encounter cyclists, the risk of injury per cyclist declines.[36] Mr Aaron Ball stated that preventing crashes through a 'safety in numbers' approach is a more effective road strategy than ensuring people are wearing helmets if they do crash.[37]

2.18 In addition, the point was made that mandating bicycle helmets has encouraged the perception that cycling is inherently dangerous. As a result, submitters argued that many Australians are discouraged from regular or occasional recreational cycling.[38]

2.19 Attention was drawn to cycling rates in the NT where mandatory legislation was amended in 1994 to make it legal for a person over 17 years of age to ride on separated footpaths and cycle paths without a helmet.[39]

2.20 According to the Australian Cyclists Party, the NT has the highest ridership of any state or territory as measured by the Australian Bureau of Statistics census.[40] Further, Professor Rissel submitted that cycling injury rates in the NT are commensurate with the national average.[41] It was suggested, therefore, that the NT

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33 According to Professor Chris Rissell, approximately one in six current cyclists (16.5 per cent) cite helmets as a reason for not cycling more. *Submission 133*, p. 2. See also Mr Colin Clarke, *Submission 4*, Attachment 1, p. 6; Mr Ben Triefus, *Submission 8*.

34 Mr Chris Gillham, *Submission 60*, p. 1; Australian Cyclists Party, *Submission 222*, p. 1.

35 Professor Chris Rissel, *Submission 133*, p. 6; Mr Edward Re, *Submission 6*; Mr Ben Triefus, *Submission 8*.

36 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 30.

37 Mr Aaron Ball, *Submission 100*, p. 5.

38 Mr Chris Gillham, *Submission 60*, p. 7; CycleSafe, *Submission 411*, p. [2].

39 Professor Chris Rissel, *Submission 133*, p. 2; Northern Territory Government, Cycling Safety, http://www.transport.nt.gov.au/__data/assets/pdf_file/0003/25635/cyclingsafety.pdf (accessed 25 November 2015)

40 Australian Cyclists Party, *Submission 222*, p. [2].

41 Professor Chris Rissel, *Submission 133*, p. 2.

exemption demonstrated the point that a relaxation of helmet laws improves cycling participation rates without any corresponding increase in injury rates.[42]

International perspective and the bike share experience

2.21 It was pointed out that while MHL continue to be upheld in Australia, the rest of the world has not been persuaded to follow Australia's example.[43] Further, it was argued that MHL were responsible for the low participation rates in Australia's two public bike share schemes, which have the lowest usage rates in the world.[44]

2.22 There are more than 400 cities operating bike share programs worldwide including London, Paris, Dublin, New York and Barcelona.[45] It was suggested that such schemes serve as a significant part of an integrated transport system and their safety record was excellent.[46]

2.23 Bike share schemes were introduced in Melbourne (*Melbourne Bike Share*) and Brisbane (*CityCycle*) in 2010 with approximately 600 and 1800 bicycles respectively. Reports suggest that Sydney is contemplating the introduction of its own bike share scheme.[47]

2.24 Both operational schemes have experienced low ridership in comparison to schemes operated around the world.[48] As of May 2011, users made about 13,000 trips each month under the Melbourne scheme, which was short of the target of 25,000 trips per month.[49] In comparison:

- the Dublin bike hire scheme—approximately the same size as Melbourne's scheme—has had ten times the daily use with no serious injuries.[50]
- a recently introduced New York bike share system attracted more trips in the first month of operation than the combined total in Melbourne and Brisbane throughout their existence.[51]

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42 Australian Cyclists Party, *Submission 222*, p. [2].

43 Freestyle Cyclists, *Submission 95*, p. [1].

44 Luke Turner, 'Australia's helmet law disaster', *IPA Review*, Volume 64, p. 98.

45 Freestyle Cyclists Inc., *Submission 95*, p. [3].

46 Freestyle Cyclists Inc., *Submission 95*, p. [3].

47 Tim Dick, 'Avoid the mistakes of Melbourne and Brisbane and bike-sharing in Sydney can work', *Sydney Morning Herald*, 18 October 2015, http://www.smh.com.au/comment/avoid-the-mistakes-of-melbourne-and-brisbane-and-bikesharing-in-sydney-can-work-20151018-gkbude.html (accessed 10 November 2015).

48 Elliot Fishman, 2014, *Bikeshare: barriers, facilitators and impacts on care use*, PhD Thesis, Queensland University of Technology, Abstract, http://eprints.qut.edu.au/78009/4/Elliot_Fishman_Thesis.pdf (accessed 11 November 2015).

49 Benjamin Preiss, 'Bike share scheme disappointing', *The Age*, 31 May 2011, http://www.theage.com.au/victoria/bike-share-scheme-disappointing-20110531-1fdto.html (accessed 10 November 2015).

50 Professor Chris Rissel, *Submission 133*, p. 2.

- one million bikes were hired in the first two weeks of the London scheme and one million in the first four months in Montreal compared to 20,600 bikes in the first four months of the Melbourne scheme.[52]

2.25 Freestyle Cyclists Inc. argued that the low uptake of the bike share schemes in Australia was 'almost wholly attributable to mandatory helmet requirements'.[53] In fact, Professor Rissel informed the committee that 61 per cent of respondents in a 2014 survey identified helmet issues as the main barrier to bike share participation in Australia.[54]

Health and social costs of MHL

> We can think of no comparable example from the fields of health or safety, where healthy behaviour (riding a bicycle) is banned in the absence of a safety intervention of so little demonstrated worth. We can think of no worse example of the stubborn intransigence of government in refusing to acknowledge the widespread collateral harm caused by a well intentioned though misguided invention.[55]

2.26 Professor Rissel and a number of other submitters argued that the health and social benefits of cycling far outweigh the health risks from traffic injuries.[56] They suggested that, for this reason, MHL serve as a net public health loss.[57] In this regard, Mr Gillham stated that:

> Data published over the past 25 years has consistently shown a substantial and permanent decline in the proportion of Australians cycling, with consequent damage to public health.
>
> The data show tens and probably hundreds of thousands of Australians are discouraged from regular or occasional recreational exercise and instead mostly use their cars for transport, increasing traffic congestion and the likelihood of road trauma.[58]

2.27 According to CycleSafe, most evaluations suggest that the cost of discouraging a healthy and environmentally friendly form of transport is much greater than any reductions in injuries from increased helmet wearing.[59]

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51 Freestyle Cyclists Inc., *Submission 95*, p. [4].

52 CycleSafe, *Submission 411*, p. [3].

53 Freestyle Cyclists Inc., *Submission 95*, p. [4].

54 Professor Chris Rissel, private capacity, *Committee Hansard*, 16 November 2015, p. 10.

55 Freestyle Cyclists Inc., *Submission 95*, p. [4].

56 Professor Chris Rissel, *Submission 133*, p. 2; Mr Colin Clarke, *Submission 4*, Attachment 1, p. 1; Mr Chris Gillham, private capacity, *Committee Hansard*, 16 November 2015, pp. 2–3; Dr Dorothy Robinson, CycleSafe, *Committee Hansard*, 16 November 2015, p. 13; Professor Piet de Jong, Macquarie University, *Committee Hansard*, 16 November 2015, p. 14.

57 Professor Chris Rissel, private capacity, *Committee Hansard*, 16 November 2015, p. 7.

58 Mr Chris Gillham, *Submission 60*, p. 7.

59 CycleSafe, *Submission 411*, p. [1].

2.28 Mr Clarke went further, citing a UK study which calculated that the life years gained from cycling outweighed the life years lost in accidents by 20 times.[60] Therefore, helmet laws have not delivered a net societal health benefit, with a calculated cost benefit ratio of 109 to 1.[61]

2.29 A similar point was made by Professor Piet de Jong, Professor of Actuarial Studies at Macquarie University who compared the possible beneficial effect of a helmet in an accident involving the head with that of the impact of helmet laws in reducing cycling rates. He continued:

> If you set off those two effects, then the net health impacts of a mandatory helmet law appears to be, under almost every scenario, negative. That is not to say that individuals should not wear helmets nor that parents should not require their kids to wear helmets. It just says that there is a large unintended consequence of mandatory helmet laws that tends to swamp the possibly good effects of people wearing helmets.[62]

2.30 Many individual submitters stated that they would cycle more often, and particularly for short journeys, if there were not required to wear a helmet.[63] Dr Dorothy Robinson, a Researcher with CycleSafe, described these cyclists as the 'safest cyclists' as they are often the most risk adverse. Yet, she noted that it was amongst these safer cyclists, many of whom are in regional areas, that the most substantial decline in cycling rates have occurred.[64]

2.31 Further, the point was made that cycling plays a key role in preventing illnesses. According to Mr Clarke, about 80,000 deaths a year are related to obesity and cardiovascular disease compared to 50 deaths a year from cycling. He suggested that cycling gives a level of fitness equivalent of being ten years younger and a life expectancy two years above the average.[65]

Law enforcement

2.32 Another related concern was that MHL send the wrong signal, as they penalise cyclists for engaging in an activity that provides positive health benefits.[66]

2.33 Evidence to the committee suggested that the introduction of MHL led to a 90 per cent increase in traffic infringement notices issued to cyclists and that, currently, failure to wear a helmet accounts for over two-thirds of infringement notices issued to cyclists.[67]

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60 Dr Mayer Hillman cited in Mr Colin Clarke, *Submission 4*, Attachment 1, p. 1.

61 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 1.

62 Professor Piet de Jong, Macquarie University, *Committee Hansard*, 16 November 2015, p. 17.

63 Mr Chris Younger, *Submission 371*, p. 1.

64 Dr Dorothy Robinson, CycleSafe, *Committee Hansard*, 16 November 2015, p. 17.

65 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 27.

66 Professor Chris Rissel, *Submission 133*, p. 2.

67 Freestyle Cyclists Inc., *Submission 95*, p. [3].

2.34 In Victoria, as an example, 200,000 fines have been issued for not wearing helmets.[68] At the same time, the respective penalty rose from $15 in 1990 (when MHL were introduced in Victoria) to $176 in 2014 and to $185 in 2015.[69]

2.35 As well as increased penalties for not wearing bicycle helmets, submitters argued that the courts have become overloaded with the prosecution of those who have not paid their fines.[70] Further, Ms Katy Francis described to the committee how she had been arrested and held for 24 hours for unpaid bicycle helmet fines:

> Ms Francis: I was taken to the local lockup and strip-searched, is that what you are referring to?
>
> CHAIR: Yes.
>
> Ms Francis: I did not put that in my submission.
>
> CHAIR: Somebody advised me about it. What was the outcome of that? Did you lodge a complaint? Were you convicted?
>
> Ms Francis: I believed it was what they did to everyone who was arrested, that it was part of the punishment for being a criminal.
>
> CHAIR: Were you a criminal?
>
> Ms Francis: I had not paid my fines.
>
> CHAIR: Does not paying fines make you a criminal?
>
> Senator CANAVAN: But you were not convicted of anything. You had been arrested.
>
> Ms Francis: No, I had not been to court. I was arrested for not paying my fines.
>
> CHAIR: Were they on-the-spot fines?
>
> Ms Francis: Yes.
>
> CHAIR: So you had never been to a court?
>
> Ms Francis: No.
>
> CHAIR: For not paying on the spot fines?
>
> Ms Francis: Yes.
>
> CHAIR: You were arrested?
>
> Ms Francis: I was arrested without warning as well.
>
> CHAIR: You were arrested without warning, and you were strip-searched in a police station. Were you held for long?

68 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 29.

69 Ms Robyn Seymour, Director Vehicle and Road Use Policy, VicRoads, *Committee Hansard*, 16 November 2015, p. 55.

70 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 29; Ms Kathy Francis, *Submission 52*, p. 5.

> Ms Francis: I was transferred from Kyneton to Keilor, because the Kyneton jail was not adequate. I was pregnant at the time, and it was not safe enough, so I was transferred to Keilor. I spent 24 hours in Keilor, and I was then released on a community service order. I should add that I was supposed to serve the community service order from the start, but there was confusion over what they were going to do with me, and that never happened. That is why I accidentally ended up in jail.[71]

2.36 Concern was expressed by submitters that issuing 'excessive' fines to persuade or coerce people to wear helmets, discouraged cycling and served no social benefit.[72] The point was argued that an activity that benefits the individual and society had been criminalised by MHL.[73]

2.37 Furthermore, Freestyle Cyclists Inc. suggested that:

> It has been estimated that per unit distance travelled, failure to wear a bicycle helmet is the most heavily enforced of any traffic regulation in Australia. With this focus on one minor behavioural issue, police are failing to focus on the matters that really put cyclists' lives at risk – driver behaviour. It also represents a ludicrous over policing of a choice which is left to individual adult discretion everywhere in the world except Australia, New Zealand and the United Arab Emirates.[74]

71 Ms Kathy Francis, private capacity, *Committee Hansard*, 16 November 2015, pp 22–23.

72 Mr Colin Clarke, *Submission 4*, Attachment 1, p. 29.

73 Ms Kathy Francis, private capacity, *Committee Hansard*, 16 November 2015, p. 23.

74 Freestyle Cyclists Inc., *Submission 95*, p. [3].

Chapter 3

Evidence in support of bicycle helmet legislation

3.1 The central argument of submitters in favour of MHL was that, by reducing the risk of head injuries including traumatic brain injury (TBI), bicycle helmets protect the individual and save the community from the expensive health and social costs associated with TBI.[1]

3.2 Such submitters argued that bicycle helmets are the most effective way to prevent injury and death in the event of a crash.[2] The Department of Infrastructure and Regional Development (department) stated:

> There is clear evidence from research that helmet wearers suffer fewer head injuries and that mandatory bicycle helmet legislation leads to a reduction in reported head injuries (Carroll, Kinnear, Helman, Hynd and Cuerden, 2014). In Australian research, a case-series study by McIntosh, Curtis, Rankin, Cox, Pang, McCrory and Finch 2013 found that in the event of an accident, bicycle helmets significantly reduce the likelihood and severity of head and brain injuries for cyclists by a factor of 79 [per cent]. This study also concluded that if helmet wearing rates increased, head and brain injury reductions would be greater.[3]

3.3 In response to concerns regarding helmets and personal choice, the point was made that:

> Even if a helmet is considered an impost or a reduction of civil liberty, the long term effect of a head and brain injury on a victim's family, carers and society are worse. For the child or adolescent with many fulfilling years ahead of them, the event may be devastating.[4]

3.4 Three key points raised in this regard were that:

- helmets reduce the risk of serious injury by approximately 60 per cent and in the case of death, by 74 per cent;

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1 Professor Jeffry Rosenfeld, Neurosurgical Society of Australasia, *Committee Hansard*, 16 November 2015, p. 28; Professor Rebecca Ivers, Australian Injury Prevention Network, *Committee Hansard*, 16 November 2015, p. 29; The George Institute for Global Health, *Submission 268*, p. 2. Traumatic brain injury (TBI) refers to brain injury acquired through a traumatic event, such as a traffic accident or a blow to the head (AIHW, 2008), as cited in Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*.

2 The George Institute for Global Health, *Submission 268*, p. 2.

3 Department of Infrastructure and Regional Development, *Submission 394*, p. 5.

4 Dr Caroline Acton cited in The George Institute for Global Health, *Submission 268*, p. 2.

- helmet wearers admitted to hospital represent a national health resource burden which is less than half that of non-helmet wearers;[5] and
- there is strong community support for MHL.[6]

3.5 Therefore, in direct contrast to the opponents of MHL, the proponents argued that the health and societal risks associated with traffic injuries far exceed any benefits from cycling without a helmet.

Bicycle helmets and head injuries

3.6 The Neurosurgical Society of Australasia (NSA) argued that scientific evidence, both prior to and after the introduction of MHL, indicated that helmets have been effective in reducing the risk of head injuries, such as TBI to cyclists.[7]

3.7 NSA drew on a study in Queensland which found that the risk of head injury in bicycle accidents was reduced amongst children wearing a helmet by 63 per cent, while the risk of a loss of consciousness was reduced by 86 per cent.[8] Furthermore, it argued that, following the introduction of MHL, hospital admission data in NSW revealed that head injury rates amongst cyclists had declined significantly more than limb injury rates at the time of the legislation. It concluded that, despite numerous data limitations, there was evidence of a positive effect of MHL on cyclist head injuries at a population level such that 'repealing the law cannot be justified'.[9]

3.8 Other evidence presented to the committee to demonstrate the efficacy of helmets in relation to head injuries included:

- a 2001–2009 NSW study which found that helmet use was associated with reduced risk of head injury in bicycle collisions with cars of up to 74 per cent, and the more severe the injury considered, the greater the reduction;[10]
- a crash simulation study in children found that the risk of death from head injury was reduced from 40 per cent to 0.3 per cent, while the risk of death

5 The median hospital costs for non-helmeted cyclists ($47,900) were more than double those for helmeted cyclists ($22,900). Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons Answers to questions on notice from public hearing on 16 November 2015, received 30 November 2015, p. 4.

6 Mr David Healy, Australasian College of Road Safety, *Committee Hansard*, 16 November 2015, p. 29.

7 Neurosurgical Society of Australia, *Submission 187*, p. [1].

8 Neurosurgical Society of Australia, *Submission 187*, p. [1].

9 Neurosurgical Society of Australia, *Submission 187*, p. [1].

10 Bambach, MH, et al, 'The effectiveness of helmets in bicycle collisions with motor vehicles: A case-control study', *Accident Analysis and Prevention*, 2013, cited in Neurosurgical Society of Australia, *Submission 187*; Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, p. 13.

from a neck injury fell from 11 per cent to 1 per cent in those wearing a helmet;[11]

- the Cochrane review, which found that helmets provide a 63–88 per cent reduction in the risk of head, brain or severe brain injury for all ages of bicyclists;[12] and
- a 1994 study in Victoria found that there had been a significant reduction in the rate of cyclists head injury claims since the introduction of MHL and a 40 per cent reduction in head injuries resulting in hospital admissions.[13]

3.9 According to studies cited by The George Institute for Global Health, non-helmeted cyclists were more than three times more likely to sustain intracranial injuries and four times more likely to sustain TBI when compared to helmeted cyclists.[14] Further, it was noted that in each case-control study conducted to assess the association between helmet wearing and head injury, it was found that the 'odds of a head injury were significantly diminished for cyclists wearing helmets versus those that did not'.[15]

3.10 According to the Neuroscience Research Australia (NeuRA) Injury Prevention Research Centre, bicycle helmets reduce the load that is transferred from a head strike with the ground, or another object, 'via the helmet's ability to attenuate energy'.[16] NeuRA continued:

> Specifically, bicycle helmets protect the head by reducing the rate at which the head and brain are decelerated and by dissipating the impact energy over an increased area. The effectiveness of the helmets are therefore governed by the laws of physics, as long as helmets are designed adequately…Furthermore, there is a large body of evidence from both laboratory and real world studies that conclusively show that the use of a bicycle helmet reduces a rider's chance of head injury.[17]

3.11 Professor Raphael Grzebieta, Past President of the Australasian College of Road Safety, informed the committee that the Curnow hypothesis, which argues that on impact, a helmet can grip the road and twist the head, thereby causing serious brain injury, had not been substantiated through appropriate testing. He explained that

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11 McNally and Rosenberg 2013 cited in The George Institute for Global Health, *Submission 268*, p. 2.

12 Thompson, DC et al., Helmets for preventing head and facial injuries in bicyclists. The Cochrane database of Systematic Review, 1999 cited in Neurosurgical Society of Australia, *Submission 187*.

13 Newstead et al, 1994 and Carr et al 1995 cited in Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, p. 13.

14 The George Institute for Global Health, *Submission 268*, p. 2.

15 UNSW Science, *Submission 287*, p. 2.

16 NeuRA Injury Prevention Research Centre, *Submission 223*, p. 2.

17 NeuRA Injury Prevention Research Centre, *Submission 223*, p. 2.

testing conducted at the University of NSW had found that wearing a helmet not only reduced the acceleration that is imparted to the brain but also reduces the rotation of the head.[18] Similarly, the department stated:

> Although some opponents to mandatory bicycle helmet legislation have claimed that bicycle helmets contribute to rotational head injuries, a review by Hynd, Cuerden, Reid and Adams (2009) found no evidence of an increased risk of these injuries with a helmet compared to without a helmet.[19]

Economic, health and social costs of head injuries and road trauma

3.12 The consequences of TBI were highlighted in evidence to the committee. Dr Julie Brown, Senior Research Fellow at the NeuRA Injury Prevention Research Centre emphasised the point that TBI can change the course of someone's life, disrupt their family and reduce opportunities for education and participation in the workforce.[20]

3.13 An Access Economics report on the economic costs of TBI in Australia detailed its impact as follows:

> TBI can cause long-term physical disability and complex neuro-behavioural effects which disrupt quality of life, including neurological impairment (e.g. motor function impairment and sensory loss), medical complications (e.g. spasticity and post-traumatic epilepsy), cognitive impairment (e.g. memory impairment and problems with planning, language and safety awareness), personality and behavioural changes (e.g. impaired social and coping skills) and lifestyle consequences (e.g. unemployment, difficulty maintaining interpersonal relationships and loss of independence).[21]

3.14 NeuRA stated that head injuries can result in long-term or lifelong physical, cognitive, behavioural and emotional consequences, and that:

> In the acute setting, the costs to the healthcare system from traumatic brain injuries and severe injuries are significant, making head injury one of the most expensive diagnoses in the public hospital system.[22]

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18 Professor Raphael Grzebieta, Australasian College of Road Safety, *Committee Hansard*, 16 November 2015, p. 39.

19 Department of Infrastructure and Regional Development, *Submission 394*, p. 5.

20 Dr Julie Brown, NeuRA Injury Prevention Research Centre, *Committee Hansard*, 16 November 2015, p. 28.

21 Access Economics, *The economic cost of spinal cord injury and traumatic brain injury in Australia*, A report by Access Economics Pty Limited for The Victorian Neurotrauma Initiative, June 2009, p. xii, https://www.tac.vic.gov.au/about-the-tac/our-organisation/research/tac-neurotrauma-research/vni/the20economic20cost20of20spinal20cord20injury20and20traumatic20brain20injury20in20australia.pdf (accessed 11 November 2015).

22 NeuRA Injury Prevention Research Centre, *Submission 223*, p. 1.

3.15 The involved costs of TBI to survivors, their families and the community were highlighted in evidence to the committee. In 2009, the estimated lifetime costs per incident of TBI in Australia were $2.5 million and $4.8 million for moderate to severe traumatic brain injury respectively.[23] The overall burden from TBI to Australia was estimated to be $8.6 billion annually. According to NeuRA, the majority of these cases are due to transport incidents, including bicycle injuries.[24] Furthermore, this cost extends for the duration of the patient's life as those with severe traumatic TBI have more frequent and longer hospital visits and require ongoing tests, investigations and follow-up.[25]

3.16 As head injuries can result in long-term or lifelong physical, cognitive, behavioural and emotional consequences, unlike some physical consequences of severe injuries, many TBI issues fail to resolve over time.[26] Individuals with TBI may be precluded from obtaining an education, participating in the workforce and in society more broadly.[27]

3.17 Submitters highlighted the stress and financial hardship of providing appropriate levels of care and support to effected families and friends with TBI.[28] Relatives who are carers may have to leave the workforce. Amongst parent carers of children who sustain such injuries, there are higher rates of parental separation and family breakdown along with high rates of anxiety, depression, social withdrawal and isolation, financial difficulties as well as other role changes.[29]

3.18 Witnesses presented evidence arguing that the use of helmets by cyclists presented a significant economic saving to the community. Representing a combined membership of thousands of road safety and injury prevention experts and organisations, the Australasian College of Road Safety (ACRS), Australian Injury Prevention Network (AIPN) and Royal Australasian College of Surgeons (RACS) provided evidence to support this view. They informed the committee that data from the Victorian Injury Surveillance Unit revealed that there are over 500 hospital admissions of cyclists with head and neck injuries in Victoria every year. These are in addition to a further 1000 emergency department presentations for cyclist head, neck and facial injuries.[30] ACRS, AIPN and RACS argued that:

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23 Neurosurgical Society of Australia, *Submission 187,* p. [1]; NeuRA Injury Prevention Research Centre, *Submission 223,* p. 1.

24 NeuRA Injury Prevention Research Centre, *Submission 223*, p. 1.

25 NeuRA Injury Prevention Research Centre, *Submission 223*, p. 1.

26 NeuRA Injury Prevention Research Centre, *Submission 223*, p. 1.

27 NeuRA Injury Prevention Research Centre, *Submission 223*, p. 2.

28 Headwest Brain Injury Association of WA, *Submission 265*, p. 4.

29 NeuRA Injury Prevention Research Centre, *Submission 223*, p. 2.

30 Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, p. 9.

> The natural extrapolation is that cyclists who do not wear helmets are costing Australia's national health system three times as much as those who do wear helmets – in terms of crash costs.[31]

3.19 The point was also made in evidence that the causes and consequences of road trauma can have a serious impact on Australia's national productivity as well as its collective public health.[32] According to evidence, road trauma is arguably the highest ranking public health issue the nation faces today.[33] ACRS, AIPN and RACS stated in this regard:

> By the time we reach the final year of Australia's National Road Safety Strategy 2011–2020, and assuming the 30% target reduction is reached, **road trauma will still have cost the Australian economy a staggering $264 billion dollars over this 10 year period**.[34]

3.20 ACRS, AIPN and RACS argued, therefore, that any evidence-based measures to decrease the rate of road trauma will have a 'positive impact on Australia's collective public health as well as national productivity'.[35] They noted that the impact of road trauma not only left victims incapacitated for life but that communities as a whole are affected by such deaths and injuries – including workplaces, friendships and community networks – not to mention the toll on the mental health of emergency workers and ambulance workers, to name a few.[36]

3.21 The NSA concluded that repeal of the MHL would:

> …result in an enduring economic burden on our community and a needless level of personal suffering for families left caring for individuals disabled by traumatic brain injuries that will result from the inevitable accidents involving bicyclists that do not wear helmets.[37]

3.22 Furthermore, Headwest Brain Injury Association of WA noted that rates of obesity are often used as an argument against MHL. However, it stated the view that:

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31 Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, p. 11.

32 Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, p. 1.

33 Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, p. 6.

34 Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, p. 1 (emphasis in original).

35 Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, p. 7.

36 Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, p. 8.

37 Neurosurgical Society of Australia, *Submission 187*, p. [1].

> …if an individual will not cycle purely on the basis of the helmet laws, there are alternative sporting activities available. There are no alternatives to a brain injury.[38]

3.23 Dr Christian Kenfield, Chairman of the Victorian Trauma Committee of the RACS also challenged the argument that Australians at risk of obesity are not riding bicycles because of the MHL. Speaking as an obesity surgeon, Dr Kenfield continued:

> Those patients who are already overweight and obese tend not to want to ride a bike. They do not feel safe on a bike, and I speak to them about this on a regular basis. When they have lost weight after the operations that I perform, many of them do take up cycling and it is one of their great joys. I dispute though that the people in society who are at risk of becoming obese are not riding bicycles because of compulsory bicycle helmet laws.[39]

Deficiencies with cycling infrastructure not helmets

3.24 Some submitters challenged the view that cycling participation rates had not recovered since the introduction of MHL. ACRS, AIPN and RACS drew on evidence from the Monash University Accident Research Centre which found that, while there had been an initial reduction in the number of people cycling in Victoria following the introduction of MHL, within two years, the number or riders had returned to levels similar to that prior to the legislation for both adults and children.[40]

3.25 MHL supporters further argued that MHL did not serve as the barrier to increased cycling participation that other submitters had suggested.[41] The George Institute for Global Health argued that:

> There is no known research which demonstrates a negative population health impact caused by decreased cycling due to the introduction of mandatory helmet laws in Australia.[42]

3.26 Furthermore, the view was put that there is no evidence to uphold the argument that abolishing MHL would result in higher cycling rates.[43] Rather, it was argued that research had indicated that a combination of increased personal safety and

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38 Headwest Brain Injury Association of WA, *Submission 265*, p. 5.

39 Dr Christian Kenfield, Royal Australasian College of Surgeons, *Committee Hansard*, 16 November 2015, p. 39.

40 Finch et al, 1993 cited in Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, p. 14.

41 Professor Rebecca Ivers, Australian Injury Prevention Network, *Committee Hansard*, 16 November 2016, p. 29.

42 The George Institute for Global Health, *Submission 268*, p. 3.

43 Professor Jeffrey Rosenfeld, Neurosurgical Society of Australasia, *Committee Hansard*, 16 November 2015, p. 30.

dedicated bike paths are the most effective way to encourage greater levels of cycling.[44]

3.27 This argument was supported by market research undertaken by VicRoads along with a review of the Victorian road rules. Both sets of data revealed that perceptions of safety and safe infrastructure, rather than MHL, were a greater barrier to improving cycling participation rates.[45]

3.28 According to evidence submitted to the committee, an estimated 94 per cent of Australians support helmets and safe cycling infrastructure, rather than removal of MHL, as the key to increasing cycling participation.[46] In this regard, the George Institute of Global Health stated that cycle participation rates continue to increase in the major cities which have cycle infrastructure that is conducive to personal safety.[47]

3.29 The Cycling Promotion Fund Survey (2011) asked respondents who had ridden a bicycle for transport in the past month what discouraged them from riding for transport more often.[48] Out of the 158 respondents:

> A common theme for not cycling more often was due to road traffic conditions or safety. Respondents were likely to rate unsafe road condition, speed/volume of traffic, lack of bicycle lanes or safety as key reasons for not cycling often.[49]

3.30 Similarly, the Women and Cycling Survey 2013 by the Cycling Promotion Fund, found that, from a random sample of 1007 Australian women aged 18 years and over, the main safety concerns associated with cycling, aside from personal safety, involved traffic and cars; the speed and volume of cars and trucks; and distracted drivers.[50] Sixty per cent of the women surveyed reported they would like to cycle more than they currently do.[51]

3.31 Professor Rebecca Ivers, Member of the Executive Council of AIPN, noted that:

> …where people are asked about whether cycle helmets stop them from cycling—if people cite cycle helmets it is a long way down the list. Even if they cite cycle helmets as being important, it is still a stretch to actually say,

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44 The George Institute for Global Health, *Submission 268*, p. 3.

45 Ms Robyn Seymour, VicRoads, *Committee Hansard*, 16 November 2015, pp 55 and 58.

46 Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, pp 16–17.

47 The George Institute for Global Health, *Submission 268*, p. 3.

48 Cycling Promotion Fund and Heart Foundation, *Riding a Bike for Transport - 2011 Survey Findings*, p. 5.

49 Cycling Promotion Fund and Heart Foundation, *Riding a Bike for Transport - 2011 Survey Findings*, p. 5.

50 Cycling Promotion Fund and Heart Foundation, *Women and Cycling Survey 2013*, p. 15.

51 Cycling Promotion Fund and Heart Foundation, *Women and Cycling Survey 2013*, p. 2.

> 'If we reduce helmet legislation, all of those people would cycle and would become regular transport cyclists.'[52]

3.32 In a submission to the inquiry, Dr David Dolan further argued that:

> …a lack of suitable bicycle infrastructure, a lack of suitable bicycle commuter cycle paths, a few over aggressive cyclists, a few motorists with poor awareness of cyclists and much greater average commuter distances than in many overseas cities can be considered the deterrents to more people not cycling.[53]

3.33 Submitters and witnesses put it to the committee that the lack of safe cycling infrastructure was a major barrier to cycling in Australia, rather than MHL.[54] According to the George Institute of Global Health, the 100 per cent reported increase in the number of people cycling to work in Sydney from 2011 to 2014 can likely be attributed to the 110 km of bicycle lanes constructed in and around the central business district.[55] It argued that designing solutions which make cycling a safer experience would prove to be much more effective than the removal of MHL.[56]

3.34 In regards to questions on MHL deterring bicycle use in the public bike share scheme environment, Associate Professor Jake Olivier, Member of ACRS argued that Australian bike sharing schemes have been poorly set up and are expensive to use. He stated that on the Gold Coast, the bike share scheme costs $99 for three days. Alternatively, the tram costs $5 a day.[57]

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52 Professor Rebecca Ivers, Member Executive Council, Australian Injury Prevention Network, *Committee Hansard*, 16 November 2015, p. 34.

53 Dr David Dolan, *Submission 89*, p. 1.

54 The George Institute for Global Health, *Submission 268*, p. 5.

55 The George Institute for Global Health, *Submission 268*, p. 3.

56 The George Institute for Global Health, *Submission 268*, p. 3.

57 Associate Professor Jake Olivier, Member, Australasian College of Road Safety, *Committee Hansard*, 16 November 2015, p. 37.

Chapter 4

Comprehensive data set

4.1 The committee recognises that the efficacy of bicycle helmets is contentious as demonstrated by the considerable evidence provided to it during the course of this inquiry. The lack of comprehensive data has added to the contention.

4.2 Submitters on both sides of the argument recognised current limitations in the data set which have contributed to varying interpretations of the available data.[1] Associate Professor Olivier informed the committee that there was inadequate data to undertake a cost-benefit assessment of MHL in Australia and that:

> We do not have any idea how often people cycle – how much they cycle. In countries like the Netherlands they collect that data routinely. Australia does not.[2]

4.3 For these reasons, Professor Ivers noted that there were different sources of data, some of which are imperfect, as well as different interpretations of that data. She continued:

> One of the things you have to say is that it is difficult to understand the impact of legislation on cycling participation rates in Australia because we have very poor data. There are studies that have shown that it has had an impact, and there are equal numbers of studies that have shown that it has not had an impact and that cycling participation is increasing.[3]

4.4 Conversely, Mr Curnow noted that the data was insufficient to measure the decline or level of discouragement of cycling in relation to adult cyclists.[4]

4.5 The Queensland parliamentary committee also raised concerns regarding data. In its 2013 report, the committee noted that:

> … while the actual relationship between cycling rates, injury rates and safety risk is largely unknown it appears from the evidence that the severity of injury and risk of fatality substantially increases for on-road bicycle use and/or where a motor vehicle is involved.[5]

4.6 The Queensland parliamentary committee recommendations 3 to 5 addressed the issue of data collection. Recommendation 3 stated:

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1 Mr Chris Gillham, private capacity, *Committee Hansard*, 16 November 2015, p. 11 and 14.

2 Associate Professor Jake Olivier, Australasian College of Road Safety, *Committee Hansard*, 16 November 2015, p. 31.

3 Professor Rebecca Ivers, Australasian Injury Prevention Network, *Committee Hansard*, 16 November 2015, p. 40.

4 Mr Bill Curnow, Cyclists' Rights Action Group, *Committee Hansard*, 16 November 2015, p. 2.

5 Transport, Housing and Local Government Committee, *A new direction for cycling in Queensland*, Report No. 39 – Inquiry into Cycling Issues, p. 16, www.parliament.qld.gov.au/documents/committees/thlgc/2013/inq-cyc/rp-39-29nov13.pdf (accessed 16 October 2015).

> The Committee recommends that the Department of Transport and Main Roads work with other relevant agencies to address the current lack of centralised data collection and reporting for on- and off-road cyclist injuries and fatalities.[6]

4.7 And Recommendation 5:

> The Committee recommends that the Department of Transport and Main Roads develop a strategy to better document the incidence of bicycle-related injuries on roads in order to target appropriate interventions more effectively.[7]

4.8 The Queensland parliamentary committee also noted that the lack of consistent and quality data in regards to injury trends had made the task of improving cycling safety difficult. The small number of cyclist injuries actually reported and the lack of consistency in reporting parameters such as different statistical terminology, reporting timeframes and categories of injury types, made it hard to determine safety issues and solutions.[8] Furthermore, the lack of cycling participation information made it difficult to analyse cycling injuries and fatalities in the context of population size and participation rates.[9]

4.9 In terms of national data, the Department of Infrastructure and Regional Development (department) clarified that there is currently no nationally consistent collection of data on serious injuries from road crashes.[10] While indicating that there is evidence of increases in serious injuries from road crashes among vulnerable road user groups, particularly motorcyclists and cyclists, the department recognised that further investigation was required to fully interpret apparent trends in the hospital data.[11]

4.10 The department also noted that beyond the *Australian Cycling Participation Survey*, there were limited sources of data relating to cycling participation rates and the extent to which people choose to cycle. It recognised the limitations regarding the Australian Bureau of Statistics census data which is usually collected late in winter.[12]

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6 Transport, Housing and Local Government Committee, *A new direction for cycling in Queensland*, Report No. 39 – Inquiry into Cycling Issues, Recommendation 3, p. 17, www.parliament.qld.gov.au/documents/committees/thlgc/2013/inq-cyc/rp-39-29nov13.pdf (accessed 16 October 2015).

7 Transport, Housing and Local Government Committee, *A new direction for cycling in Queensland*, Report No. 39 – Inquiry into Cycling Issues, Recommendation 5, p. 17.

8 Transport, Housing and Local Government Committee, *A new direction for cycling in Queensland*, Report No. 39 – Inquiry into Cycling Issues, p. 16.

9 Transport, Housing and Local Government Committee, *A new direction for cycling in Queensland*, Report No. 39 – Inquiry into Cycling Issues, p. 16.

10 Department of Infrastructure and Regional Development, *Submission 394*, p. 2.

11 Department of Infrastructure and Regional Development, *Submission 394*, footnote 1, p. 2.

12 Department of Infrastructure and Regional Development, *Submission 394*, p. 10.

4.11 ACRS, AIPN and RACS recommended ongoing research be conducted to develop an evidence base for potential road safety countermeasures to reduce cyclist injury and promote increased participation, while maintaining MHL in Australia.[13]

4.12 On the other side of the argument, Mr Gillham suggested that a proper assessment of participation and injury rates be undertaken in a particular jurisdiction to provide hard evidence.[14]

Committee view

4.13 The committee takes the view that a consistent and comprehensive national data set should be established. Such data would inform any evaluation of the outcomes of cycling safety programs and enable a cost-benefit assessment of MHL to be undertaken.

4.14 The committee recognises that the ongoing debate regarding the relationship between MHL, cycling participation rates and road injuries (including the seriousness of injuries) will continue until such time as nationally consistent data is available. While the committee recognises that there is growing public support for a relaxation of MHL, as exemplified by the Northern Territory legislation and recommendations of the Queensland Parliament's Transport, Housing and Local Government Committee, it takes the view that analysis of nationally consistent data should be obtained before any recommendations for reform are made.

Recommendation 1

4.15 The committee recommends that a consistent and comprehensive national data set be established. The data set should provide nationally consistent information on cycling-related injury trends as well as cycling participation rates. The committee recommends that the Department of Health in cooperation with the Department of Infrastructure and Regional Development and state and territory counterparts develop the national data set for application across all states and territories.

4.16 The committee recognises that it is only once such nationally consistent information is gathered and assessed that a national assessment of the impact of mandatory helmet laws can be undertaken.

Recommendation 2

4.17 The committee recommends that the Department of Infrastructure and Regional Development in cooperation with the Department of Health conduct a national assessment of mandatory bicycle helmet laws once a national data set of sufficient quality has been established. The impact of the Northern Territory legislation should form an important part of the overall assessment. In addition to safety concerns, this assessment should consider the relationship between

13 Australasian College of Road Safety, Australian Injury Prevention Network and Royal Australasian College of Surgeons, *Submission 257*, p. 21; Mr David Healy, Co Vice-President, Australian College of Road Safety, *Committee Hansard*, 16 November 2015, p. 29.

14 Mr Chris Gillham, private capacity, *Committee Hansard*, 16 November 2015, p. 11.

bicycle helmets and cycling participation rates, drawing on the experience of bike share schemes and other initiatives directed at improving cycling participation rates.

Senator Chris Ketter

Committee Chair

Additional Comments

Senator David Leyonhjelm – Liberal Democratic Party

1.1 While I endorse the committee view that a consistent and comprehensive national data set should be established and this data would inform any evaluation of the outcomes of cycling safety programs and enable a cost-benefit assessment of MHL to be undertaken, I wish to make some further comments and some concrete recommendations.

1.2 During the course of the hearing, and based on available data, it became clear MHL have undermined cycling participation rates. Attempts to argue to the contrary, especially given evidence from around the world, were not at all persuasive.

1.3 It was also impossible to ignore both the more relaxed approach to MHL taken in the Northern Territory and the recommendations of Queensland's Transport, Housing and Local Government Committee (discussed in the committee's interim report).

1.4 I anticipate a cost benefit study would show the impact of MHL to be negative, given the low prevalence of cyclist head injury (notwithstanding the seriousness of individual TBI cases) and the negative effects of the policy.

1.5 I also maintain, in the absence of compelling evidence demonstrating a substantial social benefit, there should be a bias in favour of individual choice and responsibility. It is especially not the role of government to protect individuals against the consequences of their own choices when the risks are small, foreseeable and borne personally.

1.6 In terms of recommendations, I endorse those from the Queensland inquiry, with minor modifications, as follows:

1. Cyclists aged 16 years and over should be exempted from the mandatory helmet road rule when riding in parks, on footpaths and shared/cycle paths and on roads with a speed limit of 50 km/hr or less.
2. As part of this recommendation (and tied to the collection of a comprehensive data set), this should be accompanied by a 24 month evaluation process that includes baseline measurements and data collection so that a reliable assessment can be made which measures the effect and notes any benefits.
3. At the conclusion of this evaluation, and subject to its findings, I recommend also exempting cyclists under 16 years from an obligation to wear helmets, while making clear to parents that their responsibility to their children should include serious consideration of wearing one.

Senator David Leyonhjelm

Liberal Democratic Party

Dissenting Report

Senator Sean Edwards – Liberal Party of Australia

Recommendation 1

1.1 Senator Edwards notes that the overwhelming proportion of relevant, qualified expert opinion confirms the link between wearing a bicycle helmet and the prevention of serious injury. No rebuttal in respect of such opinion has withstood proper scrutiny and it appears the report calls for the collection of data in order to create one. In response, Senator Edwards notes that managing health and related expenditure is a constant process of prioritisation with difficult decisions necessary about what we can and cannot afford. To that extent the action proposed is considered to be a waste of public money for a purpose whose legitimacy remains unproven.

Recommendation 2

1.2 Senator Edwards' view in relation to Recommendation 1 informs his view in relation to Recommendation 2. In addition he notes that Australia enjoys some of the best cycling injury prevention rates in the world.

Senator Sean Edwards

Liberal Party of Australia

Appendix 1

Tabled documents

1. Document tabled by the Neurosurgical Society of Australasia at a public hearing held in Melbourne on 16 November 2015.

2. Document tabled by the Mr Woodall at a public hearing held in Melbourne on 16 November 2015.

3. Document tabled by the Australian Cyclists Party at a public hearing held in Melbourne on 16 November 2015.

Additional information received

1. Additional information received from Mr Colin Clarke following the public hearing held in Melbourne on 16 November 2015

2. Additional information received from Mr Colin Clarke, received 30 November 2015

3. Additional information received by Mr Alan Todd, Freestyle Cyclists Inc, following the public hearing held in Melbourne on 16 November 2015

Answers to questions on notice

1. Answers to questions on notice from a public hearing held in Melbourne on 16 November 2015, received from the Australasian College of Road Safety, the Australian Injury Prevention Network and the Royal Australasian College of Surgeons on 30 November 2015

2. Answers to questions on notice from a public hearing held in Melbourne on 16 November 2015, received from Dr Dorothy Robinson on 30 November 2015.

3. Answers to questions on notice from a public hearing held in Melbourne on 16 November 2015, received from the Transport Accident Commission on 2 December 2015.

4. Answers to questions on notice from a public hearing held in Melbourne on 16 November 2015, received from VicRoads on 7 December 2015.

Appendix 2

Public hearings and witnesses

EAST MELBOURNE, 16 NOVEMBER 2015

BROWN, Dr Julie, Senior Research Fellow, NeuRA Injury Prevention Research Centre

CLARKE, Mr Colin

COOPER, Mr Jai

CURNOW, Mr Bill, President, Cyclists' Rights Action Group

DE JONG, Professor Piet, Professor of Actuarial Studies, Macquarie University

DOW, Mr Nicholas, National Committee, Australian Cyclists Party

FRANCIS, Ms Katherine

GILLHAM, Mr Christopher

GRZEBIETA, Professor Raphael, Past President, Australasian College of Road Safety

HEALY, Mr David, Co Vice-President, Australasian College of Road Safety

IVERS, Professor Rebecca, Member Executive Council, Australian Injury Prevention Network

KENFIELD, Dr Christian, Chairman, Victorian Trauma Committee, Royal Australasian College of Surgeons

OLIVIER, Associate Professor Jake, Member, Australasian College of Road Safety

PARKER, Mr Stephen, Lawyer, VicRoads

RISSEL, Professor Chris, Private Capacity

ROBINSON, Dr Dorothy L, Researcher, CycleSafe

ROSENFELD, Professor Jeffrey Victor AM, OBE, Member, Neurosurgical Society of Australasia

SEYMOUR, Ms Robyn, Director Vehicle and Road Use Policy, VicRoads

TODD, Mr Alan Stewart, President, Freestyle Cyclists Inc

WOODALL, Mr Daniel