

Ph 1800 033 660 | E [bca@bca.org.au](mailto:bca@bca.org.au) | W [bca.org.au](http://www.bca.org.au/) | ABN 90 006 985 226

**Response to the Inquiry Into the Impact of Road Safety Behaviours on Vulnerable Road Users**

Lodged via: [roadsafetybehaviours@parliament.vic.gov.au](mailto:roadsafetybehaviours@parliament.vic.gov.au)

Author: Corey Crawford, National Policy Officer

[corey.crawford@bca.org.au](mailto:corey.crawford@bca.org.au)

19th May 2023

**Contents**[\_Toc135232791](#_Toc135232791)

[1. Introduction 2](#_Toc135232793)

[1.1 About Blind Citizens Australia (BCA) 2](#_Toc135232794)

[1.2 About people who are blind or vision impaired 2](#_Toc135232795)

[2. Submission Context 3](#_Toc135232796)

[3. Blind Citizens Australia’s Submission 5](#_Toc135232797)

[3.1 The growing dangers posed by EVs 5](#_Toc135232798)

[3.2 The necessity of AVAS for heavy vehicles 7](#_Toc135232799)

[3.3 The growing dangers posed by PMDs 8](#_Toc135232800)

[4. Recommendations 10](#_Toc135232801)

**1. Introduction**

**1.1 About Blind Citizens Australia (BCA)**

Blind Citizens Australia (BCA) is the peak national representative organisation of and for the over 500,000 people in Australia who are blind or vision impaired. For nearly 50 years, BCA has built a strong reputation for empowering Australians who are blind or vision impaired to lead full and active lives and to make meaningful contributions to our communities. BCA provides peer support and individual advocacy to people who are blind or vision impaired across Australia. Through our campaign work, we address systemic barriers by promoting the full and equal participation in society of people who are blind or vision impaired. Through our policy work, we provide advice to community and governments on issues of importance to people who are blind or vision impaired. As a disability-led organisation, our work is directly informed by lived experience. All directors are full members of BCA and the majority of our volunteers and staff are blind or vision impaired. They are of diverse backgrounds and identities.   
**1.2 About people who are blind or vision impaired**

There are currently more than 500,000 people who are blind or vision impaired in Australia with estimates that this will rise to 564,000 by 2030. According to Vision Initiative, around 80% of vision loss in Australia is caused by conditions that become more common as people age.[[1]](#endnote-2)

Australians who are blind or vision impaired can live rich and active lives and make meaningful contributions to their communities: working, volunteering, raising families and engaging in sports and other recreational activities. The extent to which people can actively and independently participate in community life does, however, rely on facilities, services and systems that are available to the public being designed in a way that makes them inclusive of the needs of all citizens – including those who are blind or vision impaired.   
**2. Submission Context**

BCA welcomes the opportunity to make a submission to the Victorian Legislative Assembly Economy and Infrastructure Committee’s Inquiry into the impact of road safety behaviours on vulnerable road users since the onset of the COVID-19 pandemic.

BCA’s submission is based on existing legislation and frameworks:

* Victorian Road Safety Strategy 2021–2030 (the Strategy)
* Road Safety Action Plan 2021–2023 (Vic) (the Action Plan)
* Climate Change Act 2017 (Vic)
* Victoria’s Zero Emissions Vehicle Roadmap
* The National Electric Vehicle Strategy
* Australia’s Disability Strategy 2021–2031
* United Nations Convention on the Rights of Persons with Disabilities (UNCRPD)

The Victorian Road Safety Strategy 2021–2030 (the Strategy) aims to halve deaths by 2030 and put the state on a strong path to eliminate all road deaths by 2050. The Victorian Road Safety Action Plan 2021–2023 (the Action Plan) is the first in a series of action plans implementing the Strategy. The Action Plan is aims to protect people who are at high risk of being injured, especially vulnerable road users and those travelling in older vehicles.

Much work is needed to meet these outcomes, with statistics from the Transport Accident Commission (TAC) revealing that 120 lives have been lost on Victorian roads already this year. This is 33 per cent higher than the 90 lives lost during the equivalent period in 2022.[[2]](#endnote-3)

In addition to this submission, BCA has produced a detailed response to the federal Department of Infrastructure, Transport, Regional Development, Communications and the Arts’ proposal to mandate Acoustic Vehicle Alerting Systems (AVAS) for new electric, hydrogen fuel cell and hybrid vehicles in Australia.

The federal government’s AVAS proposal accords with the National Electric Vehicle Strategy, unveiled in April 2023, which aims to accelerate the transition from petrol- and diesel-powered internal combustion engines (ICEs) to electric vehicles (EVs).

Whilst BCA welcomes measures that will help address concerns about fuel scarcity and the environmental impact of carbon emissions from ICEs, we have already expressed our serious concerns around the potential of EVs to severely compromise the safety of all pedestrians – especially people who are blind or vision impaired.[[3]](#endnote-4)

Decision-makers are aware of these concerns, as noted in the National Electric Vehicle Strategy:

The [federal] Government is consulting to consider the case for mandatory Acoustic Vehicle Alerting Systems for light electric vehicles in Australia, to reduce potential pedestrian collisions. Adopting international standards setting minimum sound requirements for EVs could help ensure pedestrians who are blind or low vision can travel with relative safety and independence when crossing roads and using footpaths.[[4]](#endnote-5)

Furthermore, as a signatory to the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), governments in Australia have an obligation to monitor and eliminate safety hazards to ensure the wellbeing of people with disability. In particular, ‘Article 9 – Accessibility’ requires State Parties to take appropriate measures to ensure that people with disability have equal access to the physical environment in both urban and rural areas, and mandates the ‘identification and elimination of obstacles and barriers to accessibility.’

The UNCRPD is operationalised in Australia through Australia’s Disability Strategy 2021–2031, which rightly acknowledges the importance of having a community that is accessible and inclusive, noting that areas that are not accessible ‘exclude people with disability from participation in work, education, and social and cultural life.’ Australia’s Disability Strategy commits to ensuring that ‘the built and natural environment is accessible.’

This submission focuses on the uptake of EVs and electric scooters and other personal mobility devices (PMDs). BCA’s response is based on extensive consultations with members and other people who are blind or vision impaired, and our ongoing advocacy work in the disability sector.

**3. Blind Citizens Australia’s Submission**

**3.1 The growing dangers posed by EVs**

One of the most significant changes to road safety behaviours since 2020 has been the uptake of EVs. According to the National Electric Vehicle Strategy, EVs accounted for 3.8 per cent of new car sales in Australia in 2022, an 86 per cent increase from 2021.

As outlined in Victoria’s Zero Emissions Vehicle Roadmap, 400 vehicles in the Victorian Government Fleet (VicFleet) are to be replaced by zero emissions vehicles (ZEVs) by 2023. EV charging stations are to be installed across regional Victoria by 2024.

Furthermore, 50 per cent of all light vehicles sales in Victoria are to be ZEVs by 2030.[[5]](#endnote-6) Experts expect EVs to constitute 90 per cent of Australia’s entire vehicle fleet by 2050.[[6]](#endnote-7)

As EVs and hybrid vehicles – known collectively as Quiet Road Transport Vehicles (QRTVs) – form a greater proportion of traffic, the risks of serious injury or death for people who are blind or vision impaired will rise.

Historically, the sounds emitted by road traffic has enabled pedestrians who are blind or vision impaired to travel with relative safety and independence when crossing roads and using footpaths. As a study on the built environment from Western Michigan University explains:

Traffic flow can tell a person whether a street is one way or two way, how wide a street is, how close a person is to an intersection, and how close a person is to the street. All of these bits of information, combined with knowledge of how a city is laid out, allows a person to determine approximately where they are and perhaps even what direction they are walking.[[7]](#endnote-8)

This information has been used by people who are blind or vision impaired for decades, with specific knowledge, techniques and skills being developed and taught by orientation and mobility specialists to help take advantage of that traffic flow information.

Research conducted in 2018 with people who are blind or vision impaired, by Monash University Accident Research Centre (MUARC) in conjunction with Vision Australia, detailed how QRTVs were upending road safety behaviours. The research revealed:

* 75 per cent of participants regularly walk, daily or almost daily. Of these participants, 42 per cent walk outside unassisted and 58 per cent walk outside assisted. Most of those walking outside assisted do so by using a white cane.
* 35 per cent of participants experienced a collision or near collision with QRTVs.
* 74 per cent of participants reduced confidence due to the introduction of QRTVs.[[8]](#endnote-9)

For those with partial hearing loss, the issue of hybrid and electric cars being silent is particularly pertinent, and a natural consequence of an ageing population will also be increased prevalence of hearing loss in addition to vision impairment.

QRTVs also pose a significant danger to people who are not disabled. In 2011, the National Highway Traffic Safety Administration in the United States revealed that EVs and hybrids had a 35 per cent greater likelihood of accidents with pedestrians, and a 50 per cent greater likelihood of accidents with cyclists. The majority of these incidents occurred in carparks and driveways, when a driver was reversing or turning at low speed.[[9]](#endnote-10)

The batteries that power QRTVs make for much heavier – and therefore dangerous – vehicles. The Ford Mustang Mach-E Electric SUV and the Volvo XC40 EV, for example, are both 33 per cent heavier than their petrol-powered equivalents.

In 2011, the National Bureau of Economic Research in the United States published a paper which indicated that being struck by a vehicle with an added 1,000 pounds (454 kilograms) increased the likelihood of death by 47 per cent.[[10]](#endnote-11)

The weight problem is compounded by the fact that EVs are quicker off the mark than traditional ICE vehicles. EVs generate much more torque than diesel- or petrol-powered vehicles. EV motors also eliminate the need for a traditional transmission, allowing the power to go straight to the wheels. Ultimately, this means that EV drivers, who have not been trained to handle such power, can accelerate quickly even in crowded urban areas.[[11]](#endnote-12)

In recognition of the dangers posed by QRTVs, most major vehicle markets – including the European Union, the United Kingdom, the United States, Japan, South Korea and China – already mandate AVAS systems for such vehicles.

**Recommendations:**

1. All electric, hydrogen fuel cell and hybrid vehicles registered in Victoria must be installed with an Acoustic Vehicle Altering System (AVAS), without a pause function or off-switch.

**3.2 The necessity of AVAS for heavy vehicles**

Despite making up just four per cent of the national vehicle fleet, heavy vehicles are responsible for 25 per cent of all vehicle emissions in Australia.[[12]](#endnote-13) Electrifying heavy vehicle fleets is thus a priority for the Australian government, the Victorian government and industry.

As outlined in Victoria’s Zero Emissions Vehicle Roadmap, all public transport bus purchases are to be ZEVs from 2025. The Victorian government has budgeted $20 million for a three-year trial of 50 electric and two hydrogen fuel cell buses, involving six operators across Melbourne, Traralgon and Seymour.

The first three electric buses were reported to have hit the roads in Sunbury, a suburb in Melbourne’s north-west, in October 2022.[[13]](#endnote-14) Seymour will be the first regional town to be fully serviced by electric buses.[[14]](#endnote-15)

The Public Transport Victoria (PTV) website boasts that the new fleet of ‘fully electric buses will improve air quality and reduce noise pollution in the areas they service.’[[15]](#endnote-16) BCA reminds the Victorian government of how important it is for all electric trucks and buses to be fitted with AVAS.

It is possible for heavy vehicles to be fitted with AVAS and still reduce noise pollution. To meet the Europeans Union’s AVAS regulations, for example, Volvo Trucks developed a unique set of sounds for its electric truck models.

The Volvo Trucks’ AVAS uses four different sounds to inform people close by about what the truck is doing: idling, moving forward, reversing, etc. The sounds vary in intensity based on travelling speed, and shift in frequency during acceleration and deceleration. Importantly, these sounds are designed to not penetrate through walls, allowing Volvo Trucks to be used for quiet night-time deliveries and contribute to better working conditions.[[16]](#endnote-17)

**Recommendation:**

1. All electric, hydrogen fuel cell and hybrid trucks and buses registered in Victoria must be installed with an AVAS, without a pause function or off-switch.

**3.3 The growing dangers posed by PMDs**

Since 2020, there has been rapid and significant growth in the popularity and availability of e-scooters and other Personal Mobility Devices (PMDs), whilst legislation and regulation has struggled to keep up. PMDs or ‘e-ridables’ are broad terms that can refer to a wide range of electric powered devices, including   
e-scooters, electric unicycles, electric skateboards, ‘hoverboards’ and Segways.

BCA recognises the ongoing role PMDs are likely to play as a way of providing a practical, ecological and economical alternative to city traffic, and as ‘last-mile’ transportation to help bridge connections within public transport networks.

However, these devices can pose significant risks to people who are blind or vision impaired. The foremost of those concerns is the difficulty detecting e-scooters approaching as they run almost silently and are capable of speeds of at least   
25 km/h, with some on the market reportedly reaching speeds of up to 90 km/h.

International research has indicated that e-scooters could be three times more dangerous than cycling, with riders engaging in anti-social behaviour including using devices on footpaths, travelling too fast, racing other riders and performing dangerous stunts.[[17]](#endnote-18)

Additionally, use of scooters under the influence of alcohol has increased safety concerns given the dangers to both pedestrians and riders themselves.[[18]](#endnote-19) We believe steps must be taken to reduce the risk of the near silent operation of PMDs by extending the mandatory installation of AVAS to all PMDs.

In Melbourne, e-scooters have become increasingly common since 1,500 hit the streets of the Melbourne, Port Phillip and Yarra municipalities in February 2022 as part of a one-year scheme trial with operators Neuron and Lime. Tragically, an e-scooter rider died that very month when they collided with a car in Narre Warren. Another person died in September when they lost control of their e-scooter on a speed hump in Pascoe Vale.

By November 2022, data from Monash University’s Injury Surveillance Unit indicated that injuries to people riding e-scooters in Victoria had increased by 234 per cent in the past year, leading to at least 427 hospital admissions, mainly due to broken bones. With only 28 e-scooter hospitalisations in 2019–20 and 128 in 2020–21, this represented a steep rise.

Of those injured, 80.6 per cent fell from their e-scooter, 7 per cent collided with a car or van, 1.2 per cent collided with a bicycle, and 1.2 per cent were pedestrians who had been struck by an e-scooter.[[19]](#endnote-20)

In Victoria, e-scooters are permitted only on roads, bike paths and shared-use paths. Footpath riding is prohibited, but non-compliance is known to be widespread. Injuries and near-misses to pedestrians induce anxiety and discourage people who are blind or vision impaired from using footpaths and crossing roads.

E-scooter-related deaths, injuries and near-misses are set to increase, with the Victorian government having extended the trial for another six months from 5 April 2023 to further assess the incorporation of e-scooters into the transport network. Despite the first phase of the trial only allowing the use of ‘hire and ride’ e-scooters, and prohibiting the use of privately owned devices, there are already approximately 100,000 privately owned e-scooters in Victoria.[[20]](#endnote-21) The expansion of the trial covers all of Victoria and allows people to use a privately owned e-scooter so long as it cannot exceed 25 km/h.[[21]](#endnote-22) BCA believes this is a step backwards in safety. Under the previous iteration of the trial, there was a level of accountability from the two hire and ride companies (Lime and Neuron), who were able to track bad rider behaviour, and issue suspensions and even bans on repeat offenders. No such protection exists for private ownership, and relies on the already very lax enforcement by Victoria Police.

**Recommendation:**

1. All e-scooters and other Personal Mobility Devices (PMDs) used in Victoria must be installed with an AVAS, without a pause function or off-switch.
2. At the conclusion of the second phase of the trial, private use of PMDs should be prohibited, with only the use of hire and ride PMDs allowed.

**4. Recommendations**

In order to ensure the safety of people who are blind or vision impaired and other vulnerable road users in Victoria, BCA strongly recommends that:

1. All electric, hydrogen fuel cell and hybrid vehicles registered in Victoria be installed with an Acoustic Vehicle Altering System (AVAS), without a pause function or off-switch.
2. All electric, hydrogen fuel cell and hybrid trucks and buses registered in Victoria be installed with an AVAS, without a pause function or off-switch.
3. All e-scooters and other Personal Mobility Devices (PMDs) sold in Victoria be installed with an AVAS, without a pause function or off-switch.
4. At the conclusion of the second phase of the trial, private use of PMDs should be prohibited, with only the use of hire and ride PMDs allowed.

1. Vision 2020 Australia, “Eye Health in Australia,” accessed 31 January 2023,  
   <http://www.visioninitiative.org.au/common-eye-conditions/eye-health-in-australia> [↑](#endnote-ref-2)
2. Transport Accident Commission, “Lives Lost – Year to Date,” accessed 17 May 2023, <https://www.tac.vic.gov.au/road-safety/statistics/lives-lost-year-to-date> [↑](#endnote-ref-3)
3. Blind Citizens Australia, “Response to the National Electric Vehicle Strategy: Consultation Paper,” 7 November 2022, <https://consult.dcceew.gov.au/national-electric-vehicle-strategy/download/fil22ea7579c96c2212c331c> [↑](#endnote-ref-4)
4. Department of Climate Change, Energy, the Environment and Water, “National Electric Vehicle Strategy: Increasing the Uptake of EVs to Reduce Our Emissions and Improve the Wellbeing of Australians,” April 2023, [https://www.dcceew.gov.au/  
   sites/default/files/documents/national-electric-vehicle-strategy.pdf](https://www.dcceew.gov.au/sites/default/files/documents/national-electric-vehicle-strategy.pdf) [↑](#endnote-ref-5)
5. Department of Environment, Land, Water and Planning, “Victoria’s Zero Emissions Vehicle Roadmap,” April 2017, [https://www.energy.vic.gov.au/\_\_data/assets/  
   pdf\_file/0031/583726/Zero-emission-vehicle-roadmap.pdf](https://www.energy.vic.gov.au/__data/assets/pdf_file/0031/583726/Zero-emission-vehicle-roadmap.pdf) [↑](#endnote-ref-6)
6. CarExpert, “Blind People Want Louder Electric Vehicles,” 29 March 2023, <https://www.carexpert.com.au/car-news/blind-people-want-louder-electric-cars> [↑](#endnote-ref-7)
7. Robert Wall Emerson, “Outdoor Wayfinding and Navigation for People Who Are Blind: Accessing the Built Environment,” 17 May 2017, [https://www.researchgate.net/  
   publication/317235871\_Outdoor\_Wayfinding\_and\_Navigation\_for\_People\_Who\_Are\_Blind\_Accessing\_the\_Built\_Environment](https://www.researchgate.net/publication/317235871_Outdoor_Wayfinding_and_Navigation_for_People_Who_Are_Blind_Accessing_the_Built_Environment) [↑](#endnote-ref-8)
8. Monash University Accident Research Centre and Vision Australia, “The Impact of Electric/Hybrid Vehicles and Bicycles on Pedestrians Who are Blind or Have Low Vision,” October 2018, <https://apo.org.au/sites/default/files/resource-files/2018-10/apo-nid197121_0.pdf> [↑](#endnote-ref-9)
9. The New Yorker, “What Should a Nine-Thousand-Pound Electric Vehicle Sound Like?” 1 August 2022, <https://www.newyorker.com/magazine/2022/08/08/what-should-a-nine-thousand-pound-electric-vehicle-sound-like> [↑](#endnote-ref-10)
10. AP News, “US Official Warns of Risks Posed By Heavy Electric Vehicles,” 12 January 2023, <https://apnews.com/article/technology-road-safety-national-transportation-board-automotive-accidents-dd5c4260f68e9f5dcb430a02cc939f6b> [↑](#endnote-ref-11)
11. Fortune, “Tesla Veteran Explains How Electric Motors Crush Gas Engines,” 18 November 2015, <https://fortune.com/2015/11/17/electric-motors-crush-gas-engines/> [↑](#endnote-ref-12)
12. The Driven, “Hyundai to Offer Mid-Sized Electric Trucks in Australia This Year,” 9 February 2023, <https://thedriven.io/2023/02/09/hyundai-to-offer-mid-sized-electric-trucks-in-australia-this-year/> [↑](#endnote-ref-13)
13. The Driven, “First Three Electric Buses Hit the Road in Victorian Government Trial,” 10 October 2022, <https://thedriven.io/2022/10/10/first-three-electric-buses-hit-the-road-in-victoria-government-trial/> [↑](#endnote-ref-14)
14. Department of Transport and Planning, “Electric Buses En Route to Regional Victoria,” accessed 17 May 2023, <https://dtp.vic.gov.au/about/transport-news/news-archive/electric-buses-en-route-to-regional-victoria> [↑](#endnote-ref-15)
15. Public Transport Victoria, “Zero Emissions Buses Design Poll,” accessed 17 May 2023, <https://www.ptv.vic.gov.au/footer/about-ptv/improvements-and-projects/bus-and-coach/zero-emission-buses/> [↑](#endnote-ref-16)
16. Volvo Trucks, “Volvo Trucks Adds Unique Sounds to Its Electric Trucks,” 27 May 2021, [https://www.volvotrucks.com/en-en/news-stories/press-releases/2021/  
    may/volvo-trucks-adds-unique-sounds-to-its-electric-trucks.html](https://www.volvotrucks.com/en-en/news-stories/press-releases/2021/may/volvo-trucks-adds-unique-sounds-to-its-electric-trucks.html) [↑](#endnote-ref-17)
17. Independent, “E-Scooters Could Be Three Times More Dangerous than Cycling, Study Finds,” 16 December 2022, <https://www.independent.co.uk/news/uk/home-news/electric-scooters-escooters-danger-cycling-uk-b2246548.html> [↑](#endnote-ref-18)
18. Holger Kleinertz, Annabelle Volk, Dimitris Dalos, Rico Rutkowski, Karl-Heinz Frosch & Darius M. Thiesen, “Risk Factors and Injury Patterns of E-Scooter Associated Injuries in Germany,” 13 January 2023, [https://www.nature.com/  
    articles/s41598-022-25448-z#:~:text=Of%20the%20278%20e%2Dscooter,  
    scooters1%2C3%2C13](https://www.nature.com/articles/s41598-022-25448-z#:~:text=Of%20the%20278%20e%2Dscooter,scooters1%2C3%2C13) [↑](#endnote-ref-19)
19. The Age, “Hospitalisations Involving E-Scooter Riders Up 234 Per Cent in One Year,” 27 November 2022, [https://www.theage.com.au/national/victoria/  
    hospitalisations-involving-e-scooter-riders-up-234-per-cent-in-a-year-  
    20221121-p5c02s.html](https://www.theage.com.au/national/victoria/hospitalisations-involving-e-scooter-riders-up-234-per-cent-in-a-year-20221121-p5c02s.html) [↑](#endnote-ref-20)
20. VicRoads, “E-Scooters in Victoria,” accessed 17 May 2023, <https://www.vicroads.vic.gov.au/safety-and-road-rules/e-scooters-in-victoria> [↑](#endnote-ref-21)
21. Transport Accident Commission, “E-Scooter Trial,” accessed 17 May 2023, <https://www.tac.vic.gov.au/road-safety/road-users/e-scooters>   
     [↑](#endnote-ref-22)