



# Blind Citizens Australia

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## **Response to the National Transport Commission's Proposed Automated Vehicle Safety Reforms**

Lodged via: <https://www.ntc.gov.au/transport-reform/ntc-projects/av-safety-reform>

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11th June 2024

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# 1. Introduction

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## 1.1 About Blind Citizens Australia

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 per cent of vision loss in Australia is caused by conditions that become more common as people age.<sup>1</sup>

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 – including those who are blind or vision impaired.

## 2. Submission Context

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BCA has taken an active interest in matters relating to automated vehicles (AVs). In 2023, we provided feedback on the National Road Transport Technology Strategy.<sup>2</sup> This built on our response to the Consultation Impact Analysis for Acoustic Vehicle Alerting Systems (AVAS) on electric vehicles (EVs).<sup>3</sup>

This submission is based on the following policy frameworks:

- National Transport Commission’s Automated Vehicle Safety Reforms – Consultation Paper.
- Draft National Road Transport Technology Strategy.
- Draft 2024–27 National Connected and Automated Vehicle (CAV) Action Plan.
- Consultation Impact Analysis for Improving Pedestrian Safety – Acoustic Vehicle Alerting Systems for Electric Vehicles.
- National Electric Vehicle Strategy.
- Disability Standards for Accessible Public Transport 2002 (Transport Standards).
- Australia’s Disability Strategy 2021–2031.
- United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

This submission welcomes the environmental, economic and social benefits offered by emerging transport technologies. At the same time, BCA reiterates our concerns about the potential exclusion and endangerment of people who are blind or vision impaired.

As a signatory to the UNCRPD, governments in Australia have an obligation to monitor and eliminate safety hazards to ensure the wellbeing of people with disability.

Australia’s Disability Strategy, through which the UNCRPD is operationalised in Australia, requires governments to ensure that ‘the built and natural environment is accessible.’

BCA's submission 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**

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### **3.1 Opportunities for safer and more inclusive transport**

As recognised by the National Transport Commission's Consultation Paper, people with disability potentially have much to gain from AVs. Indeed, a recent systematic review by American researchers found that over 40 per cent of people with disability rely on others for transportation, and over 70 per cent limit their travel.<sup>4</sup>

In October 2015, Steve Mahan, who is legally blind, became the first non-Google employee to ride alone in the company's gumdrop-shaped AV in Austin, Texas. He reflected on the significance of this technology:

'This is a hope of independence. These cars will change the life prospects of people such as myself.'<sup>5</sup>

BCA's submission to the 2022 Review of the Disability Standards for Accessible Public Transport 2002 (Transport Standards) detailed the discrimination frequently experienced by people who are blind or vision impaired when using public transport. One of the most chilling statistics from that submission is that disability experts believe at best only half of the nation's public transport infrastructure is accessible today.<sup>6</sup>

AVs could revolutionise the lives of people who are blind or vision impaired. It would allow them to travel independently and eliminate the worry of potentially falling onto the train tracks, having a bus close its doors on them or drop them at the wrong location, or being denied access to a taxi or rideshare when travelling with their dog guide.

## 3.2 Protections for people who are blind or vision impaired

### Building on the recent AVAS reforms

BCA welcomed the Commonwealth government's April 2024 announcement of a new Australian Design Rule (ADR) that 'will require new electric, hybrid and hydrogen fuel cell cars, trucks and buses to be fitted with an AVAS from November 2025.'<sup>7</sup>

This announcement came after many years of dedicated advocacy work by BCA and our partners in the blindness and vision impaired community. We hope that governments will continue to listen to our concerns and constructive feedback.

### Protections for taxi, rideshare and public transport passengers with disability

The draft National Road Transport Technology Strategy recognises that the accessibility of AV taxi and rideshare services for people with disability will 'depend on the design and operation of these future services, including the human-machine interface.'

Australia's dependence on foreign vehicle manufacturers may mean that the unique needs of Australian consumers are not met. It may mean that some AVs are simply incompatible with Australian driving conditions. Zoox, a self-driving car company owned by Amazon, could be an example of this.

Zoox robotaxis are designed without a steering wheel, pedals or other manual controls. They travel bi-directionally and have seats that face each other (picture a horse-drawn carriage without the horse).<sup>8</sup> Such vehicles will need sensors to determine where passengers are seated and how they can most safely exit in Australian conditions.

Imagine that a Zoox passenger's destination is a building on the righthand side of a busy road. In California, where Zoox robotaxis are currently being trialled, opening the door on the righthand side of the vehicle would be safe for a person who is blind or vision impaired as they would be close to the curb. Exiting to the right in Australia, however, would imperil a person who is blind or vision impaired by exposing them to traffic from both directions.

As outlined in 'Australia's Disability Standards for Accessible Public Transport and Connected and Automated Vehicles – Main Report' from August 2021, people with disability have many other practical considerations that must be addressed before AV taxi, rideshare and public transport services can safely commence operations in Australia.<sup>9</sup>

The Commonwealth government must amend the Transport Standards to provide appropriate regulation of AV taxi, rideshare and public transport services. These amendments must be co-designed with people with disability and disability representative organisations.

**Recommendation:**

1. Amend the Transport Standards to provide appropriate regulation of AV taxi, rideshare and public transport services. These amendments must be co-designed with people with disability and disability representative organisations.

**Protections for passengers who are blind or vision impaired when travelling in private vehicles**

If and when vehicles like Zoox are made available to purchase, lease or rent in Australia, it is important that passengers who are blind or vision impaired can use them for independent travel.

BCA is thus encouraged by the following provision in the Consultation Paper:

'If manual controls are not accessible (for example, if they are locked out or behind a physical barrier), and so there is no risk of takeover, there would not be a requirement to have a person in the driving position.'

People who are blind or vision impaired should be excluded from liability for any collisions that may occur when travelling in the passenger seat(s) of a registered and roadworthy AV that does not have accessible manual driving controls.

**Recommendations:**

2. Allow people who are blind or vision impaired to travel independently in the passenger seat(s) of AVs that do not have accessible manual driving controls.

3. Protect people who are blind or vision impaired from any liability for collisions that may occur when travelling in the passenger seat(s) of a registered and roadworthy AV that has no accessible manual driving controls.

### Protections for pedestrians with disability

There is currently a lack of disability representation in the datasets used to train and test AVs. People with disability are treated as 'edge cases', meaning that they are not seen as typical people and so may require special handling in AV program algorithms.

International researchers have found that people who are blind or vision impaired do not turn their heads as often as fully sighted pedestrians before crossing the road. This poses a problem for pedestrians who are blind or vision impaired because AVs use head movements to predict pedestrians' intentions to cross the road.<sup>10</sup>

Another researcher travelling in an AV realised it was unable to recognise a friend crossing the road in a wheelchair. Were it not for the researcher's manual intervention, the vehicle would have proceeded through the intersection and collided with the individual in the wheelchair.<sup>11</sup>

The Commonwealth government must ensure that people with disability are included in the datasets used to train and test AVs. It must include such a provision in the Australian Design Rule (ADR 90/01), the mechanism that provides an initial pathway to supply AVs to the Australian market.

#### **Recommendation:**

4. Include in the Australian Design Rule (ADR 90/01) a provision that vehicle manufacturers must include people with disability in the datasets used to train and test AVs.

### Protections for all road users

As part of the research for this submission, BCA staff viewed the videos posted to YouTube by John Bernal, formerly an advanced driver assistance systems test operator at Tesla. We encourage all stakeholders and policymakers to do the same.

Bernal lost his job at Tesla for showing how the company's Full Self-Driving (FSD) Beta system worked in different locations around Silicon Valley, California.



In one video, Bernal's 2021 Tesla Model 3 experienced 'phantom braking', drove itself in a 'Bus Only' lane, repeatedly drove along the tracks of an operational light railway, stopped in the middle of an intersection, and drove up and over curbs.<sup>12</sup> In another video, the FSD Beta system prompted the vehicle to run a red light on six separate occasions.<sup>13</sup>

Using a private road, Bernal chose not to intervene when the FSD Beta system allowed the car to crash into the full-body mannequin of a five-year-old child, the mannequin of a black Labrador Retriever (which has particular salience for dog guide users), and both mannequins together. After striking the mannequins, the vehicle usually continued down the road in a hit-and-run fashion. The presence of road closure signs and police caution tape across the road had no effect on the vehicle.<sup>14</sup>

Most troublingly, Bernal demonstrated how easy it is to evade Tesla's Driver Monitoring System. A giant teddy bear, a giant stuffed unicorn, and a giant Champagne balloon were all deemed sufficiently 'human' by the system to sit behind the wheel of a moving Tesla. On each occasion, the vehicle carried out a hit-and-run strike on the child mannequin.<sup>15</sup>

To underscore the system's ineptitude, Bernal left the driver's seat completely empty. His Tesla proceeded to drive through road closure signs and police caution tape and execute a hit-and-run strike on the child and dog mannequins. Tesla's Autopilot software failed to record any 'improper use' of the vehicle during any of these tests.<sup>16</sup>

Approximately 400,000 North American Tesla drivers have access to the FSD Beta system.<sup>17</sup> In May 2023, it was reported that the software had been made available for purchase in Australia for the first time.<sup>18</sup>

The Dawn Project has recorded 1,188 crashes and 34 fatalities brought about by Tesla's self-driving software. This includes 16 separate crashes into emergency vehicles and trucks with warning signs, causing 15 injuries and one fatality.<sup>19</sup>

Even the Dawn Project's founder, Dan O'Dowd, was very nearly killed when the FSD Beta system swerved his Tesla into the path of an oncoming vehicle, giving him less than a second to react.<sup>20</sup>

Tesla has acknowledged some of its technical deficiencies. In December 2023, the company recalled more than two million cars in the United States to fix the vehicles' Autopilot software.<sup>21</sup> A few weeks later, Tesla recalled 1.6 million cars in China for the same reason.<sup>22</sup>

In its present state, Tesla's FSD Beta system is not fit for purpose. The system failures described above could result in horrific accidental collisions, or even be used to carry out terrorist attacks and hit-and-run homicides.

The Commonwealth government cannot allow this system onto Australian roads until Tesla completely fixes the software. This must be reflected in the Australian Design Rule (ADR 90/01).

#### **Recommendations:**

5. Recognise that some vehicles with self-driving capabilities already pose a significant danger to Australian road users and pedestrians.
6. Include in the Australian Design Rule (ADR 90/01) a provision that all vehicles with driver monitoring systems are rigorously tested for pedestrian and other road users' safety before being allowed onto Australian roads.

### **3.4 Additional safety and ethical considerations**

#### **The problem of puffery**

The Australian Competition and Consumer Commission (ACCC) defines puffery as 'wildly exaggerated and vague claims about a product or service that no one could treat seriously. For example, a restaurant claims they have the "best steaks on earth."<sup>23</sup>

Elon Musk, the chief executive officer of Tesla, often makes exaggerated claims about the safety features of his company's vehicles.<sup>24</sup> In trumpeting Tesla's advanced airbags, Musk said:

'I think we might have come full circle and no longer need seat belts if you have advanced airbags... Unbelted child sitting in a bad position – probably still fine. The seat belt is like – if you wear the seat belt – that's nice. The airbag is doing the work. Airbag technology is crazy good.'<sup>25</sup>

Similarly, advertisements for General Motors' Super Cruise system have focused on the technology's hands-free capabilities.<sup>26</sup>

Many people view these claims and advertisements as a genuine representation of the products and not as mere puffery. For example, a recent survey of 1,008 people by the sleep website Sleep Junkie found that 12.7 per cent of respondents were willing to sleep behind the wheel of a moving semi-autonomous vehicle.<sup>27</sup>

Australian governments must recognise that many customers take these claims and advertisements seriously, and are likely to use their EVs and AVs in inappropriate and dangerous ways.

The Consultation Paper indicates that 'misleading marketing' from vehicle manufacturers 'could be partly addressed by introducing restrictions on the way vehicles could be marketed and advertised.'

Such advertising and marketing restrictions should be accompanied by an extensive public awareness campaign which clearly articulates the legal responsibilities of EV and AV drivers, regardless of the previous implications and claims made by vehicle manufacturers.

The public awareness campaign must be co-designed with people with disability and disability representative organisations.

**Recommendations:**

7. Recognise that many customers take the advertisements and claims made by vehicle manufacturers literally. This causes them to use their EVs and AVs in inappropriate and dangerous ways.
8. Accompany advertising and marketing restrictions with an extensive public awareness campaign which clearly articulates the legal responsibilities of EV and AV drivers, regardless of previous claims made by vehicle manufacturers.
9. Co-design the public awareness campaign with people with disability and disability representative organisations.

## 4. Summary of Recommendations

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In this submission to the National Transport Commission on the proposed Automated Vehicle Safety Reforms, BCA makes the following recommendations:

1. Amend the Transport Standards to provide appropriate regulation of AV taxi, rideshare and public transport services. These amendments must be co-designed with people with disability and disability representative organisations.
2. Allow people who are blind or vision impaired to travel independently in the passenger seat(s) of AVs that do not have accessible manual driving controls.
3. Protect people who are blind or vision impaired from any liability for collisions that may occur when travelling in the passenger seat(s) of a registered and roadworthy AV that has no accessible manual driving controls.
4. Include in the Australian Design Rule (ADR 90/01) a provision that vehicle manufacturers must include people with disability in the datasets used to train and test AVs.
5. Recognise that some vehicles with self-driving capabilities already pose a significant danger to Australian road users and pedestrians.
6. Include in the Australian Design Rule (ADR 90/01) a provision that all vehicles with driver monitoring systems are rigorously tested for pedestrian and other road users' safety before being allowed onto Australian roads.
7. Recognise that many customers take the advertisements and claims made by vehicle manufacturers literally. This causes them to use their EVs and AVs in inappropriate and dangerous ways.
8. Accompany advertising and marketing restrictions with an extensive public awareness campaign which clearly articulates the legal responsibilities of EV and AV drivers, regardless of previous claims made by vehicle manufacturers.
9. Co-design the public awareness campaign with people with disability and disability representative organisations.

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<sup>1</sup> Vision 2020 Australia, "Eye Health in Australia," accessed 23 November 2023, <http://www.visioninitiative.org.au/common-eye-conditions/eye-health-in-australia>

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<sup>3</sup> Blind Citizens Australia, “Response to the Consultation Impact Analysis for Improving Pedestrian Safety – Acoustic Vehicle Alerting Systems for Electric Vehicles,” 16 May 2023, <https://www.bca.org.au/wp-content/uploads/2023/06/BCA-Response-to-Consultation-Impact-Analysis-for-Improving-Pedestrian-Safety-v0.3.docx>

<sup>4</sup> Brad E. Dicianno et al., “Systematic Review: Automated Vehicles and Services for People with Disabilities,” *Neuroscience Letters*, September 2021, <https://www.sciencedirect.com/science/article/abs/pii/S030439402100481X>

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<sup>10</sup> Mirjam Lanzer and Martin Baumann, “It Matters Who is Crossing: Users’ Trust When the Automated Vehicle Stops for Children and Blind Pedestrians,” *Transport Research Part F: Traffic Psychology and Behaviour*, July 2023, <https://www.sciencedirect.com/science/article/abs/pii/S1369847823001316>

<sup>11</sup> Disability Rights Education and Defense Fund, “Addressing Disability and Ableist Bias in Autonomous Vehicles: Ensuring Safety, Equity and Accessibility in Detection, Collision Algorithms and Data Collection,” 7 November 2022, <https://dredf.org/2023/03/09/addressing-disability-and-ableist-bias-in-autonomous-vehicles-ensuring-safety-equity-and-accessibility-in-detection-collision-algorithms-and-data-collection/>

<sup>12</sup> AI Addict, “New Tesla Update Drives on Sidewalks,” 6 February 2023, <https://www.youtube.com/watch?v=Sr-gs807-rs>

<sup>13</sup> AI Addict, “Watch a Tesla Run a Red Light on FSD Beta,” 30 September 2023, <https://www.youtube.com/watch?v=2bJaVcaFPkc>

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