

Transport and Other Legislation (Managing E-mobility Use and Protecting Our Communities) Amendment Bill 2026

Submission No: 1608

Submission By: MAIC-QUT ROAD SAFETY RESEARCH COLLABORATION

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**Submission to the Queensland
Legislative Assembly
State Development, Infrastructure
and Works Committee regarding the**

**Transport and Other Legislation
(Managing E-mobility Use and
Protecting Our Communities)
Amendment Bill 2026**

SUBMITTED BY

MAIC-QUT Road Safety Research Collaboration

8 April 2026

1. Background

This submission has been prepared by Professor Narelle Haworth AM, Chair of Road Transport Systems Safety at the MAIC-QUT Road Safety Collaboration (MQ Collab). The MQ Collab (formerly CARRS-Q, the Centre for Accident Research & Road Safety – Queensland) is funded by the Motor Accident Insurance Commission to conduct research focused on advancing Road Transport Psychology and Road Transport Safe Systems. It is one of the leading organisations in Australia in relation to research into the safety of e-scooter use.

The MQ Collab contributed to the Queensland University of Technology submission (No. 954) to the State Development, Infrastructure and Works Committee's (hereafter referred to as "the Committee") *Inquiry into e-mobility safety and use in Queensland*. QUT has chosen not to make a University-wide submission to the Committee's current review of the proposed *Transport and Other Legislation (Managing E-mobility Use and Protecting Our Communities) Amendment Bill 2026*. Instead, the current MQ Collab submission focuses on the potential road safety impacts of the proposed legislative changes.

As CARRS-Q, we undertook a comprehensive evaluation of the Queensland Personal Mobility Device Reforms commissioned by the Department of Transport and Main Roads (TMR). TMR provided a copy of our report to the Committee and it was cited as an unpublished document in the Committee's report. Our submission draws on the findings and recommendations of that evaluation and previous research.

2. Summary of the submission

We support the general intention of the Bill to deter unsafe and illegal behaviours by e-mobility users and to modernise e-mobility definitions. We also support the recommendations made in the Committee's report regarding the need for greater investment in appropriate infrastructure to ensure the safety of users.

However, our submission would like to alert the Committee to the following main points:

1. The safety differences between PMDs and legal e-bikes (termed EPACs in the Bill) and why it is inappropriate to apply the same regulations to both
2. Prohibiting use by riders aged under 16 is justified for PMDs but not for legal e-bikes
3. Limiting PMDs and legal e-bikes to 10 km/h on footpaths and shared paths has potential safety disbenefits
4. Increased penalties may have a limited effect on compliance

In addition, our submission makes comments on the following aspects of the Government response and the proposed legislation:

1. The importance of increasing helmet use and how this may be achieved
2. The requirement for riders of e-mobility devices to hold at least a learner's licence
3. Allowing PMDs access to roads with speed limits up to 60 km/h and removing some other current restrictions
4. The use of the term "prohibited bikes" in the proposed legislation

3. The safety differences between PMDs and legal e-bikes

PMDs and legal e-bikes differ in many ways. PMDs are a new form of transport with significant safety issues arising from vehicle design (instability), rider inexperience and risky riding behaviours (helmet non-use, impaired riding, speeding) as outlined in the earlier QUT submission. In contrast, there is no consistent evidence that riding a legal e-bike is more dangerous than riding a conventional bicycle. Some earlier reports of higher injury rates with legal e-bikes largely reflected the widespread use of e-bikes by elderly Europeans who tended to fall when mounting or dismounting the e-bike. Therefore, we contend that the regulatory approaches to PMDs and legal e-bikes should differ.

Most Australians do not meet the official health targets for physical activity which contributes to the occurrence and cost of chronic diseases. Riding conventional bicycles and legal e-bikes generates much needed physical activity, which is an additional factor contributing to the need to consider each class of vehicle separately. Riding conventional bicycles provides physical and mental health benefits (Celis-Morales et al., 2017; Fraser & Lock, 2011). Riding an e-bike has been shown to provide roughly half the physical activity of riding a conventional bicycle and thus also provides health benefits, albeit at a reduced rate (e.g., Langford et al., 2017).

In contrast, e-scooters are generally considered to provide little or no physical activity. In a recent laboratory environment, riding an e-scooter for 15 minutes was shown to result in significantly less energy expenditure than walking (Payne et al., 2025). Another study on a fixed route (Wen et al., 2025) found that riding an e-scooter provided more physical activity than driving but less than walking. These comparisons with walking are important because studies from around the world (including our own research in Brisbane) have demonstrated that e-scooter trips commonly replace walking and have negative effects on physical activity and, thus, physical health.

Indeed, in the QUT evaluation of the Queensland Personal Mobility Device Reforms for TMR, we recommended that “TMR continue to distinguish in regulation between PMDs and bicycles (including e-bikes) given their different characteristics and consider the implications for bicycles of changes in PMD rules (e.g., incentivising switching from e-bike to PMD use) and their health, as well as safety, implications.” (Recommendation 3)

4. Prohibiting use by riders aged under 16 is justified for PMDs but not legal e-bikes

We support a prohibition on use of PMDs by riders aged under 16 given the safety and health disbenefits associated with PMD use. Such a prohibition is also consistent with the approach taken across Australian jurisdictions of prohibiting on-road use of other solely motor-powered vehicles (e.g., cars and motorcycles) by people aged under 16. The current legislation that allows riders aged from 12 to under 16 years to ride under supervision has been largely ignored by this age group who are seeking independence from parents and whose perceptions of risk are poorly developed. The combination of these developmental factors with the instability and ease of improper use has shown itself in the Queensland injury statistics for young PMD riders.

Unlike PMDs, the data do not support a minimum age of 16 for use of legal e-bikes. Legal e-bikes are no more dangerous than conventional bikes for adolescents. They do not travel any faster than is possible on a conventional bike and do not encourage improper behaviour. Legal e-bikes can provide valued transport for many children, as well older adults and people with disabilities. We strongly support the inclusivity permitted by the existing legislative framework in supporting legal e-bike use for everyone. We do not support the introduction of age restrictions or licensing requirements for legal e-bikes.

5. Limiting PMDs and legal e-bikes to 10 km/h on footpaths or shared paths has potential safety disbenefits

We are concerned that the proposal to limit both PMDs and legal e-bikes to 10 km/h on footpaths and shared paths will result in overall safety disbenefits for the following reasons:

1. Riding a legal e-bike at or under 10 km/h may be unsafe
2. Footpaths and shared paths comprise most of the non-road active travel network
3. Diverting PMDs and legal e-bikes from footpaths or shared paths to roadways may increase the numbers of these riders injured and killed

5.1 Riding a legal e-bike at or under 10 km/h may be unsafe

Bicycles, including e-bikes, are self-stabilising after reaching a speed of approximately 12 km/h. Under that speed, continuous rider action is required to maintain balance (Kooijman et al., 2011; Meijaard et al., 2007; Schwab, 2012). These actions result in the path of the bicycle being no longer straight or predictable. The Australian Guide to Road Design Part 6A Paths for Walking and Cycling (Austroads, 2021) cautions that “not all bicycle riders can steer a straight line and when riding uphill experienced riders work the bicycle from side to side while inexperienced riders may wobble” (p.18). It recommends wider paths in situations where riders may move from side to side or wobble. Given that many footpaths and shared paths are not wide, requiring e-bikes to travel at or under 10 km/h may increase conflicts with pedestrians, thus contributing to the problem the Bill is attempting to solve.

Relatively little is known about how the trajectory of PMDs at low speeds. However, given that the increased stability of bicycles at normal travel speeds arises from the gyroscopic effect associated with movement of their relatively large wheels – a form of stability largely lacking for small-wheeled PMDs – then the control of PMDs may not be as impaired at low speeds. In our evaluation of the PMD reforms, we noted that the stability tests for e-scooters currently required in Germany and the UK are administered at low (between 6 and 10 km/h in the UK, 8 km/h in Germany) as well as high speeds (20 km/h or the maximum design speed in both countries) (The British Government, 2024). We would recommend similar testing in Queensland.

5.2 Footpaths and shared paths comprise most of the active travel network

The proposed legislation is broader than the Committee's Recommendation 14:

That the Queensland Government amend legislation to reduce the speed limits on all **footpaths**, for all e-mobility devices, to maximum 10km/h (our bolding).

The inclusion of shared paths in the scope of the proposed legislation is problematic because shared paths have been built as the primary off-road infrastructure for cyclists and pedestrians in Australia (Grzebieta, McIntosh, & Chong, 2011; Hatfield & Prabhakaran, 2016). Not only does imposing a 10 km/h speed limit deter riders from travelling on a safer, lower-speed network but the legal status of the infrastructure is also poorly understood by the public and riders. Most routes which members of the public and riders refer to as "bike paths" are officially shared paths. Thus, the legislation in its current form will lead to confusion which is likely to result in large and dangerous variations in the speed of travel between those riders knowing and complying with the 10 km/h limit, those riders knowing that the limit applies but not complying, and those who are not complying because they do not know that the limit applies in that location.

We contend that the terms "footpath" and "shared path" will need to be dealt with carefully in legislation so that the scope of the types of locations can be satisfactorily defined.

5.3 Diverting PMDs and legal e-bikes from footpaths or shared paths to roadways may increase the numbers of these riders injured and killed

The Explanatory Notes (p.9) accompanying the Bill state that the proposed 10 km/h speed limit on footpaths and shared paths "is intended to address public safety concerns and improve the safety of pedestrians". We acknowledge the validity of public concerns regarding pedestrian safety and amenity. However, the implications of trading off the safety of PMD and legal e-bike riders for pedestrian safety need to be assessed. In terms of the relative size of these injury problems, in the 26 months after November 2022, there was an average of 125 PMD-related Emergency Department presentations per month, comprising 121 riders and passengers and 4 pedestrians (Queensland Injury Surveillance Unit (QISU) data provided in our Evaluation of the PMD reforms). This data suggests that rider injury is the larger road safety problem.

Diverting PMDs and legal e-bikes from footpaths and shared paths to riding on roads may lead to more riders being injured in collisions with motor vehicles. Currently about four times as many PMD injuries result from falls than from collisions, and only about one-third of those collisions involve motor vehicles (QISU data provided in our Evaluation of the PMD reforms).

Allowing PMDs to be used in a wider range of on-road locations would be expected to result in more riding and thus more injuries on roads. There is evidence that this already occurred when the PMD rules changed in November 2022 to allow PMDs to be ridden in bike lanes. The proportion of riders and passengers injured on the road increased from 3.7% before 1 November 2022 to 21.0% after (higher percentages if unspecified locations are excluded) (QISU data provided in our Evaluation of the PMD reforms).

6. Increased penalties may have a limited effect on compliance

The proposed legislation includes penalties for new offences and increases in the penalties for current offences (e.g., not wearing a helmet).

One of the main functions of penalties is to deter people from committing offences. Classical Deterrence Theory proposes that offences will be deterred to the extent that the punishment is perceived to be certain, severe and swift (Homel, 1986). Research has shown that beyond a certain minimum level, increasing the size of the penalty has relatively little effect on compliance. Increasing the certainty of detection and punishment has a much larger effect.

Given that the penalties associated with current micromobility-related offences are generally above the lower threshold, we would encourage steps to improve the certainty of detection by police training or new technologies, rather than relying on increased penalties to deter offending.

7. Additional comments

7.1 The importance of increasing helmet use and how this may be achieved

Bicycle helmets more than halve the risk of head injury in both falls and collisions. Evidence is mounting that their protective effect for PMD riders is probably similar, at least at legal speeds. In Western Australia, injured e-scooter riders who used helmets had significantly less head injuries (Raubenheimer et al., 2023), confirming the findings from an earlier Brisbane study (Mitchell et al., 2019).

Helmet wearing rates are already very high for legal e-bikes and conventional bikes and private e-scooters but much lower for shared e-scooters (Haworth & Schramm, 2023). Our Evaluation of the PMD Reforms showed that the helmet requirement had the highest levels of knowledge and support of any of the PMD-related road rules. Yet, the video observations of riders around

Brisbane showed that 55% of shared e-scooter riders were not wearing helmets in 2024, up from 24-27% in 2022 and 2023. Steps need to be taken to reverse this alarming trend.

The proposed legislation includes an increase in the financial penalty for not wearing a helmet but this may have limited effect on helmet wearing rates for the reasons outlined in the previous section. We would suggest two alternative approaches to improving helmet wearing rates. The first is rider education regarding the risks of head injury in e-scooter falls and collisions, since research appears to show that PMD riders underestimate these risks and this may lead them to not wear a helmet. Secondly, our Evaluation of the PMD Reforms recommended “that TMR work with local governments and shared e-scooter companies to identify ways of increasing helmet use. Consideration should be given to approaches such as incorporating helmet use targets in contracts with shared e-scooter companies to incentivise activity in this area.” (Recommendation 17). If shared e-scooter companies are given a strong motivation to improve helmet wearing rates, we are confident that they will be able to develop effective technologies to ensure this outcome.

7.2 The requirement for riders of e-mobility devices to hold at least a learner’s licence

The proposed Bill prohibits the operation of PMDs or legal e-bikes on roads and road-related areas unless the rider holds a valid driver’s licence (defined as at least a learner’s licence). The Explanatory Notes explain that the rationale for this requirement is to:

1. provide evidence that they are 16 years old or older to facilitate enforcement
2. demonstrate that they had been required to learn the road rules at some time
3. exclude those who not medically fit to drive or have demonstrated poor driving behaviour as evidenced by their licence being expired, suspended or disqualified.

Given that the evidence shows that legal e-bikes are no more dangerous than conventional bicycles, and users of conventional bicycles are not required to hold a driver's licence, then we do not support this requirement for riders of legal e-bikes.

We acknowledge the need for some form of identification that PMD users are 16 years of age or older. However, we do not believe that the procedures to obtain a driver’s licence (including a learner licence) to date contain sufficient material relevant to safe operation of a PMD to justify it being required. Similarly, we do not know of any evidence that lack of medical fitness to drive or poor behaviour as a motor vehicle driver is contributing to PMD crashes. Therefore, we would submit that alternative forms of photo identification that include age such as an adult proof of age card or a photo identification card (available to those aged 15 and over) or a passport should be accepted.

7.3 Allowing PMDs access to roads with speed limits up to 60 km/h and removing some other current restrictions

The proposed legislation allows PMDs to be ridden on roads with a speed limit up to and including 60 km/h (an increase from the previous limit of 50 km/h) and removes the prohibition for riding on roads with centre lines etc. According to the Explanatory Notes, the rationale for this change is to open up access and be more readily understood by riders.

We do not object to the proposed change but we urge the Government to monitor the crash data and patterns of use of PMDs to assess whether there is a concerning increase in injuries and fatalities on 60 km/h roads. Some 60 km/h roads have relatively high traffic volumes (including significant numbers of heavy vehicles) and may not provide a safe riding environment. International best practice suggests that vulnerable road users should be separated from motor vehicles where speed limits exceed 50 km/h.

7.4 The use of the term “prohibited bikes” in the proposed legislation

Clause 31 s 6 of the proposed legislation defines a prohibited bike as

- a) a noncompliant electrically power-assisted cycle;
- b) a noncompliant personal mobility device;
- c) a 2-wheeled or 3-wheeled vehicle that is capable of being propelled by an electric motor or internal-combustion engine and (i) is not eligible to be registered (e.g., an electric or petrol-powered motorbike that does not comply with the Australian Design Rules under the *Road Vehicle Standards Act 2018* (Cwlth)); or (ii) is eligible to be registered but is not registered.

This wide use of the term “prohibited bike” is likely to confuse members of the public who would not consider a PMD to be a “bike”. Therefore, we would submit that a term which fits better with everyday usage, or at least is less open to misinterpretation, would be more appropriate. Some possibilities could be “prohibited two-wheeler” or “prohibited powered two-wheeler”.

8. References

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