


Inquiry into e-mobility safety and use in Queensland

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Submission to Inquiry into e-mobility safety and use in Queensland

Submission type: Individual

I make this submission as an individual, not in the capacity of any role I currently hold. That said, I have extensive experience as a behavioural scientist, researcher and policy advisor in both academia and state government, with expertise across a wide range of road safety topics, mostly speed management. In addition, I have been a user of e-mobility for over 5 years, including a number of years riding an e-scooter and more recently an e-MTB (mountain bike). I believe my background as a road safety practitioner, along with my direct experience as a user of e-mobility, provides a unique perspective on the issues being considered by this committee.

1. Benefits of e-mobility for Queensland

There are obvious benefits to individuals and the community associated with the use on Personal Mobility Devices (PMDs), such as e-scooters, e-bikes, and e-skateboards. However, we should exercise caution in not overstating these benefits and assess them against the current clear public health problems associated with their use.

The primary benefits of e-mobility can be categorised as:

- Environmental benefits:
 - Reduced emissions and noise pollution associated with fewer individuals relying on fossil-fuel vehicles.
- Social benefits:
 - Reduced reliance on fossil fuels.
 - Improved sustainable transportation options.
 - Reduced traffic congestion.
 - Improved accessibility (especially among low-income individuals and in regional/remote areas with less established public transportation options).
- Economic benefits:
 - Lower operating costs compared to fossil-fuel vehicles (such as fuel, maintenance, and registration).
 - Investment and job creation opportunities.
- Public health benefits:
 - Promotion of healthier lifestyles and active transportation.
 - Improved health outcomes and reduced diseases associated with emission and noise pollution.

The primary negatives associated with e-mobility can be categorised as:

- Safety concerns:
 - Injuries and death¹ associated with the higher risk of crash involvement and injury severity in the event of a crash.
 - Risks associated with battery fires, especially in relation to grey-market devices without overcharge functions.
- Accessibility challenges:
 - Impact of perceived and actual safety for other active transportation users (especially pedestrians and those with mobility issues) on footpaths and other shared spaces (especially in relation to illegal, dangerous and irresponsible use of e-mobility devices)

- Impact on free and unobstructed movement (especially for those with mobility and sight issues) associated with shared devices left on, or in the vicinity of, footpaths and other shared spaces.
- Environmental impact:
 - Associated with battery production, battery disposal and charging source.

Decisions regarding the widespread adoption of e-mobility needs to balance the benefits and challenges they pose to the community.

2. Safety issues associated with e-mobility use

It is clear from recent research and data, that e-mobility device injuries are on the rise in Queensland, with significant increases in hospital presentations and fatalities². Fractures and head and facial injuries are among the most common injuries of e-mobility riders presenting to hospitals.

While these risks are an issue across all e-mobility devices, e-scooter represent a particular concern, with reports indicating a near doubling of presentations at emergency departments within a two-year period. Moreover, private e-scooter riders are now more at risk than those using hired devices³. The greater risk associated with e-scooters is perhaps not surprising, given their typically smaller wheel size and subsequent reduced turning circle, which increases the likelihood of loss of control when encountering hazards.

This data must be taken seriously, and while it already suggests a critical problem that needs to be addressed, this should be considered in light of the likely underreporting of injuries, given not all emergency departments provide data and not everyone injured seeks medical help⁴.

It is also critical to understand injuries associated with e-mobility crashes inflicted upon pedestrians, cyclists and other road users, as well as the risks posed to other road users.

That said, more specific data is needed to fully understand the complexity of the problem, given the wide range of device characteristics. Understanding the differences in crash involvement and injury outcomes between private and shared devices is important, however should be considered within the context of whether there are confounding variables that contribute to these differences, such as experience levels, rates of helmet use, driving under the influence, and engagement in other risky behaviours (such as doubling or riding one-handed).

The varying characteristics of devices is especially relevant among private users. For example, it is important to get a better understanding of the differences in crash involvement of riders on devices that are geo-coded and speed limited versus grey-market devices which readily allow users to exceed speed limits. It may be that the responsible choices made at point of purchase are associated with more responsible riding, highlighting the importance of greater regulation and enforcement of grey-market devices.

I will address the issue of regulatory changes in Section 6, however briefly, regulations should seek to limit the characteristics of e-mobility devices that can be sold and bought in Australia, with a focus on geo-coded devices that do not allow for speeds in excess of set levels. Such an approach would go a long way towards encouraging greater compliance with speed limits for e-mobility devices. A buy-back scheme of previously purchased devices that do not adhere to the regulations should also be considered.

Experts in this field should be consulted to advise on other device characteristics to be considered, which may include, but not necessarily be limited to, capabilities to override device protocols.

3. Issues associated with e-mobility ownership

As noted in the Section 2, there are varying characteristics of e-mobility devices, particularly among private users, and these can have important implications for the risk of fire associated with battery charging and device storage.

While I will address the issue of regulatory changes in Section 6, briefly, in my opinion, one of the most important changes that is required is stricter regulation of what devices can be sold and bought in the Australian market, with this regulation likely to be necessary at a federal, rather than state, level to ensure consistency and compliance. Approved devices should be equipped with, at a minimum, overcharge functions that reduce the likelihood of user error leading to fire risks.

Experts in this field should be consulted to advise on the necessary standards associated with battery quality, as well as issues related to storage and disposal of batteries used in e-mobility devices.

As noted previously, a buy-back scheme of previously purchased devices that do not adhere to the regulations should also be considered.

4. Suitability of current regulatory frameworks for PMDs and e-bikes

In my opinion, Queensland has already made excellent progress on establishing laws associated with the use of e-mobility to enhance their safe use.

Requirements I have no issues with include:

- Always wearing a helmet
- Not riding under the influence
- 25 km/h speed limits on bike paths and roads
- Restrictions on roads 50 km/h or above (unless unmarked or appropriate bike lanes)
- Not using a mobile phone while riding
- Not doubling other passengers
- Being visible at night (working front and rear lights)
- Being fitted with a working bell (to be able to warn pedestrians as you approach)
- Having to safely park devices
- Having to adhere to general road rules
- Staying at the scene of a crash and providing information
- Having to ride with due care and attention.

That said, there are a number of current laws, which I believe, while largely being positive, do not fully capture the reality of what is needed for safe and accessible use of e-mobility devices. These include:

- 12 km/h speed limits on footpaths and shared paths
- Riders must be at least 16 years of age, or 12-15 years with adult supervision.

With regards to speed limits on footpaths and shared paths, the issue is associated with the blanket nature of this rule, the confusion regarding what constitutes a bike path versus a shared path, and the very apparent lack of signage from local councils along common south-

east Queensland active transportation commuting routes. For example, shared paths have a default speed limit of 12 km/h, unless signed otherwise.

There is likely to be a number of serious issues arising from these laws:

- More e-mobility riders will choose to ride on roads whenever faced with a choice between riding on a footpath at 12 km/h or riding on the road at 25km/h, which increases risk exposure and is obviously detrimental to their safety.
- E-mobility may lose its feasibility as an alternative transportation option among those with longer commutes which involve many shared paths.
- There will be a flagrant disregard for the speed limits in many instances, as criminologists have known for some time that laws that are not seen at logical are widely ignored – and this may have a negative impact on the overall perception of the legitimacy of other laws.

Notwithstanding the important differences between e-mobility devices and pedal powered bicycles, there is a glaring issue associated with the former being penalised for riding along a shared path at 25km/h, while a bicycle riding along the same footpath at 40 km/h would not committing an offence. In addition, the absence or low volume of pedestrian activity on many footpaths creates an unnecessarily restrictive speed limit for e-mobility riders.

It should be understood that I am in complete agreeance of a 25 km/h speed limit cap on e-scooters, and a 25 km/h speed assistance cap of e-bikes. I also wholeheartedly agree with reduced speeds on footpaths where pedestrians are present, particularly in the CBD, footpaths near retail frontage, and so on. I also acknowledge that this is a complex space to develop laws. However, to ensure the feasibility of e-mobility as an active transportation option, and to reduce the likelihood of punishing users who are committed to safety of all road users, I feel at least one of the following two approaches is needed:

- 12 km/h speed limits associated with footpaths need to be more explicitly associated with pedestrian activity. I would suggest:
 - Blanket application of 12 km/h speed limits in high-use pedestrian areas, such as CBDs, or locations with street-level commercial/residential access (e.g., shop fronts, residential buildings with entries located on the footpath)
 - On suburban and urban footpaths, 25 km/h speed limits apply, with a requirement to reduce to 12 km/h within a pre-determined distance of pedestrians (e.g., 50 metres).
- 25 km/h speed limits on shared paths need greater support from local councils, through appropriate signage – currently many of the key northside commuting routes do not have such signage.

With regards to rider age restrictions, I believe health professionals and experts should be consulted to assess whether the current laws are appropriate. One major consideration should be whether such laws, in the absence of considerable enforcement, make it too easy for young riders to ride without adult supervision.

Finally, as noted in previous sections, I perceive one of the most important changes that is required as being stricter regulation of what devices can be sold and bought in the Australian market. Experts in the relevant fields should be consulted to advise on the necessary characteristics to be regulated. I address these concerns more in Section 6.

5. Effectiveness of current enforcement approaches

In my opinion, the current enforcement capacity and capabilities are very clearly inadequate. This is not intended to be a criticism of the Queensland Police Service per se, but rather a reflection of capabilities to address dangerous riding behaviours and the use of illegal devices. As noted in Section 4, the lack of effective regulation of what devices can be bought and sold in Australia greatly contributes to the prevalence of devices being used that can allow users to readily engage in illegal and high-risk behaviours, such as speeding.

A range of out-of-the-box sanctioning approaches should be considered to deter and enforce illegal behaviours, such as:

- Greater ability to confiscate and destroy devices associated with high-range and repeat offending (consideration should be given to potential impacts of such an approach on the likelihood of offenders attempting to evade police when detected).
- Working with shared device operators (e.g., Lime) to allow bans or suspensions of accounts following certain offences committed on shared devices (ensuring protocols are in place to reduce the ability of users to set-up new accounts).
- Greater reliance on the public to inform the Queensland Police Service of locations of problematic behaviour in order to better allocate resources through targeted operations.
- Ensuring a range of offending types are addressed, from highly dangerous speeds and riding on restricted roads, through to admittedly less severe offending on shared paths and footpaths, but where the cumulative risk associated with greater prevalence and exposure of other users means it is still a problem.

6. Gaps between Commonwealth and Queensland laws

As noted in Section 4, I believe the most important change that is required is stricter regulation of what devices can be sold and bought in the Australian market. I believe this regulation needs to occur at a federal, rather than state, level to ensure consistency and compliance. Experts in the relevant fields should be consulted to advise on the necessary characteristics to be regulated, but I imagine the following would be among the considerations:

- Approved devices should be equipped with, at a minimum, overcharge functions that reduce the likelihood of user error leading to fire risks.
- Approved devices should meet minimum strict standards associated with battery quality, including consideration of storage and disposal.
- Approved devices should be geo-coded and not allow speeds in excess of set levels.
- Approved devices should have limited capabilities for users to override device protocols (such as speed limiting functions).

Such an approach would go a long way towards encouraging greater compliance with speed limits for e-mobility devices and would also likely greatly reduce the incidence of battery fires associated with e-mobility devices.

A buy-back scheme of previously purchased devices that do not adhere to the regulations should also be considered, paving the way for strict and severe sanctions such as device confiscation and destruction.

7. Communication and education

As should be clear, the development of effective regulations and laws associated with e-mobility is nuanced and complex, and as such, there should be an expectation of some confusion among the public – both for e-mobility users and non-users alike.

Therefore, regulations and laws need to be communicated succinctly and in plain language, to ensure wide comprehension. I believe the Queensland Government's Streetsmarts page does a very good job on this.

A major challenge will be communicating the information effectively to rider cohorts with less personal investment in their own safety and/or the safety of others. Experts in communications and marketing should be consulted to identify the best approach to communicating to various groups, with consideration not only of message content, but delivery approach.

In addition, I believe a broader campaign is required that targets all active transportation groups – pedestrians, cyclists and e-mobility users – and focuses on respectful and considerate use and interactions of public spaces.

8. Broad stakeholder perspectives

Obviously, and as alluded to on many occasions throughout this document, I support consultation with a wide range of stakeholders and experts to identify best-practice in this space. While the perspectives of community members are important to consider, experts should be most heavily relied upon – including road safety practitioners, disability advocates, health and trauma experts, academia, the e-mobility industry, and all levels of government.

9. References

1. Niemann, M., Braun, K.F., Otto, E., Tiefenbrunner, M., Wüster, J., Stöckle, U., Ahmad, S.S., Märdian, S. & Graef, F. (2023). Dangers of e-mobility: A systematic review and meta-analysis of sustained injury patterns and injury severity. *Safety Science*, 167. <https://doi.org/10.1016/j.ssci.2023.106283>
2. McKay, J. & Drinnan, E. (15 July 2025). *Reported e-scooter injuries on the rise at Queensland emergency departments*. ABC News Online. <https://www.abc.net.au/news/2024-07-15/e-scooter-injuries-at-qld-emergency-departments/104090966>
3. RBWH Foundation (26 November 2024). *JTI research finds private eScooter riders now most at risk*. <https://www.rbwhfoundation.com.au/blog/jti-research-finds-private-escooter-riders-now-most-at-risk>
4. Queensland Government (accessed 8 June 2025). Streetsmarts: Get the facts – Personal mobility devices. <https://streetsmarts.initiatives.qld.gov.au/pmd/get-the-facts/>