Queensland
Family & Child
Commission

Policy Submission

e-Mobility Safety and Use

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Contents

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Background

The Queensland Family and Child Commission (the Commission) is a statutory authority committed to promoting and protecting the safety, wellbeing, and best interests of Queensland children and young people. A fundamental part of our role is monitoring emerging social, environmental, and technological developments to ensure they do not compromise young people's safety or inclusion. The rapid growth in the use of e-mobility devices; including e-scooters, e-skateboards, and electrically assisted bicycles, offers new opportunities for independence, mobility and environmental sustainability. For many children and young people, especially those in urban locations or in regional areas with limited traditional transport options, these devices offer new options to access education, employment, and community connection.

As these devices gain popularity, especially among teenagers and adolescents, there is a need for renewed understanding of how young people use e-mobility devices, and intentional regulation and community awareness specific to these devices to address associated safety risks such as injuries, and potential hazards in both public and private spaces. Young people are over-represented in e-mobility injury data. The Commission is especially concerned by the rising incidence of injuries and hospitalisations related to e-mobility, including head injuries often worsened by inconsistent helmet use and gaps in safety education. Additionally, risks connected to lithium-ion battery fires, improper charging, and disposal present further dangers in family homes and multi-residential settings. These risks are heightened by young people's developmental vulnerability physically, cognitively, and socially, and limited access to clear, age-appropriate information.

In June 2025, the Commission finalised the Insights Paper, *Improving safety when young people ride e-scooters and e-bikes*.[1] This paper was developed following concerning trends observed in serious incidents, injuries, and fatalities for young people using e-scooters and e-bikes on Queensland roads. Drawing on national data which reflects similar trends in other states, the paper highlights the risks that these devices present for all road users and the need for contemporary regulation which adequately responds to the concerns for users and is balanced by the benefits and advantages that accessible personal mobility devices provide. With children under the age of 18 years old represented across incidents involving e-scooters and e-bikes, and the growing increase in shared-use devices particularly in metropolitan regions, it is imperative that education and community awareness campaigns messaging safe usage are informed by adolescents and young people and are adaptable to society.

Through our ongoing engagement with young people, families, and communities, the Commission hears from a diverse range of stakeholder voices. We recognise the role of community consultation in shaping a safe, equitable, and inclusive transport future. This inquiry into e-mobility safety presents an opportunity to embed these principles into policy and practice, ensuring Queensland's transport evolution aligns with the statutory obligations and core values of the Commission to protect the safety, wellbeing, and rights of its youngest citizens.

This inquiry presents an opportunity to develop a balanced, evidence-based regulatory framework that adequately protects young people and supports their full and safe participation in Queensland's evolving transport environment. We advocate for coordinated safety strategies aligned with international best practices which centre on education and safety awareness and are informed by the lived experiences and perspectives of young people.

[1] Queensland Family and Child Commission (2025). *Improving safety when young people ride e-scooters and e-bikes*. https://www.qfcc.qld.gov.au/sector/insights/topical

Terms of Reference

The Inquiry before the State Development, Infrastructure and Works Committee will respond to the terms of reference:[2]

1. Benefits of e-mobility (including both Personal Mobility Devices (PMDs), such as e-scooters and e-skateboards, as well as e-bikes) for Queensland.
2. Safety issues associated with e-mobility use, including increasing crashes, injuries, fatalities, and community concerns.
3. Issues associated with e-mobility ownership, such as risk of fire, storage and disposal of lithium batteries used in e-mobility, and any consideration of mitigants or controls.
4. Suitability of current regulatory frameworks for PMDs and e-bikes, informed by approaches in Australia and internationally.
5. Effectiveness of current enforcement approaches and powers to address dangerous riding behaviours and the use of illegal devices.
6. Gaps between Commonwealth and Queensland laws that allow illegal devices to be imported and used.
7. Communication and education about device requirements, rules, and consequences for unsafe use; and
8. Broad stakeholder perspectives, including from community members, road user groups, disability advocates, health and trauma experts, academia, the e-mobility industry, and all levels of government.

The Commission's submission aligns most strongly with points 1, 2, 4, 5, and particularly 7 of the Committee's Terms of Reference. This emphasis reflects the Commission's statutory focus on promoting the safety and wellbeing of children and young people, as well as its commitment to evidence-informed advocacy and community-level engagement. While the submission does not address every term of reference in detail, this targeted contribution is appropriate given the Commission's research, expertise, and role in advising government on systemic issues affecting child safety across Queensland.

[2] Queensland Parliament (2025). *State Development, Infrastructure and Works Committee. Inquiry into the e-mobility safety use in Queensland.* https://www.parliament.qld.gov.au/Work-of-Committees/Committees/Committee-Details?cid=272&id=4522

Terms of Reference One: Benefits of e-mobility

Summary

- **Sustainable transport opportunity:** E-mobility devices offer a low-emission alternative to car travel, supporting environmental goals and reducing congestion across Queensland roads.
- **Affordability and accessibility:** Particularly for young people, or those living in areas with limited public transport, e-mobility devices like scooters provide an alternative, affordable transport option.

The growing use of e-mobility devices, including e-scooters, e-skateboards, and e-bikes, presents a valuable opportunity to enhance transport accessibility, environmental sustainability, and public health outcomes in Queensland. As part of a modern, multimodal transport system, PMDs can help address congestion, reduce transport-related emissions, and improve connectivity, particularly in urban and suburban environments. These benefits are especially relevant as Queensland continues to experience population growth and rising demand for flexible, low-cost transport options.

E-mobility devices are generally more affordable and accessible than private motor vehicles, offering increased independence and mobility for a diverse range of users, including young people, low-income households, and individuals with limited access to public transport. Their popularity among adolescents and young adults reflects both their ease of use and their appeal as a socially and environmentally conscious transport choice. For children and young people in particular, these devices can support increased participation in community life, access to education and employment opportunities, and social connection; factors that contribute to overall wellbeing and development. From a public health perspective, the promotion of active and sustainable transport alternatives is critical to reducing the burden of preventable injury and chronic disease. E-mobility devices, particularly e-bikes, can encourage physical activity, reduce sedentary behaviour, and facilitate more time spent outdoors. In addition, by lowering reliance on cars for short trips, these devices help reduce air pollution and greenhouse gas emissions supporting broader climate and health goals.

Reducing traffic volumes through greater uptake of PMDs and e-bikes also has the potential to lessen the strain on emergency services, hospitals, and road infrastructure. However, realising these public health and environmental benefits depends on the safe integration of e-mobility into the transport network. This requires a collective effort across government, regulators, the private sector, and communities to ensure appropriate policies, infrastructure, education, and enforcement mechanisms are in place.

Terms of Reference Two: Safety Issues and Fatalities

Summary

- **Risks and challenges:** E-scooters and e-bikes pose emerging road safety challenges**,** particularly for children, with risk factors including lack of supervision, helmet non-use, high-speed environments, and limited regulation of device capabilities.[3]
- **Data limitations**: Hinder effective safety planning**,** as current reporting frameworks do not consistently differentiate between electric, non-electric, shared, or personal devices, making it difficult to track and respond to incident trends.
- **Collective effort:** Action must be undertaken in a holistic manner with involvement from multiple sectors including government, regulators, the private sector, communities, families and individuals.[4]

The rapid uptake of e-mobility devices in Queensland has raised pressing safety concerns. While these devices offer practical and sustainable alternatives to traditional transport, their increasing use (particularly by children and young people) has coincided with a rise in injuries, fatalities, and public concern. Integrating e-mobility into Queensland's road safety framework is essential to meet state and national targets to reduce road trauma, including the vision of zero road deaths by 2050.[5]

In the past twenty years, there have been six deaths recorded in Queensland relating to e-scooters and e-bikes; five of those deaths occurred in 2024.[6,7] Most children were aged 14 to 15 years and were involved in high-risk behaviours such as riding without helmets or adult supervision, operating at unsafe speeds, and riding on roads with speed limits above 50 km/h. These incidents frequently occurred during school travel hours and resulted primarily in fatal head injuries. In 2024 alone, children accounted for 25% of all road crash deaths involving personal mobility devices and bicycles in Queensland.

Road incident and injury data further confirm the growing prevalence and severity of these events. Children under the legal age continue to be overrepresented in serious injury statistics, including infants under one year of age. These injuries result from falls or collisions and commonly involve high-severity trauma to the head, neck, spine, and internal organs, with a notable proportion triaged as emergencies or requiring resuscitation.[8] The Queensland Ambulance Service recorded 341 e-scooter incidents involving children aged 0–17 years in 2023–24, with a significant number of riders below the legal riding age. Emergency department data from the Queensland Injury Surveillance Unit indicates that 66% of injuries in children aged 0–11 and 92% of injuries in children aged 12–15 involved e-scooters. Most of these injuries were caused by falls and collisions, and many were classified as urgent or emergency presentations. In several cases, children required immediate resuscitation.[9] These incidents

[3] Department of Transport and Main Roads (TMR) (December 2023) *Strategy and action plans*, Queensland Government, www.tmr.qld.gov.au/Safety/Road-safety/Road-safety-strategy-and-action-plans/Strategy-and-action-plans

[4] World Health Organization (December 2023) *Road traffic injuries*, www.who.int/news-room/fact-sheets/detail/road-traffic-injuries/

[5] Queensland Government (2022). *Queensland Road Safety Research and Evaluation Framework.* https://www.publications.qld.gov.au/dataset/queensland-road-safety-strategy/resource/99285bbd-afbc-4d6b-9f48-60f153270da4#:~:text=The%20purpose%20of%20the%20framework%20is%20to%20ensure,vision%20of%20zero%20serious%20road%20trauma%20by%202050.

[6] [6] Queensland Family and Child Commission (2025). *Improving safety when young people ride e-scooters and e-bikes*. https://www.qfcc.qld.gov.au/sector/insights/topical

[7] Centre for Accident Research and Road Safety- Queensland (CARRS-Q) (April 2020) 'e-Scooter safety', *State of the road fact sheets*, Queensland University of Technology, https://research.qut.edu.au/carrsq/wp-content/uploads/sites/296/2021/12/e-scooter-safety.pdf.

[8] Queensland Injury Surveillance Unit (2025). Personal Mobility Device Injury. https://metronorth.health.qld.gov.au/qisu/

[9] Data request 1880 (2025), Queensland Injury Surveillance Unit (QISU).

are not isolated; national and interstate data reflect similar trends, with increasing hospital presentations, especially among younger users.

Device design and infrastructure shortcomings also contribute to injury risk. E-scooters in particular are prone to instability due to small wheels and top-heavy frames, making them susceptible to sudden tipping when encountering minor surface irregularities. This design vulnerability is particularly hazardous in environments where riders must navigate roads and shared pathways in close proximity to vehicles and pedestrians. The growing body of clinical and surveillance data consistently identifies injuries to the head, neck, spine, and limbs as common outcomes, including fractures, dislocations, internal injuries, and, in some cases, multiple trauma regions.[10]

Lack of adult supervision, non-use of helmets, and unsafe riding environments are recurring features across fatal and non-fatal incidents and efforts to fully understand these patterns are hampered by gaps in how incidents are recorded. [11,12] Devices are often categorised under broad labels, such as bicycles or PMDs, limiting the ability to distinguish between electric and non-electric, or private versus shared devices. This lack of specificity impedes efforts to accurately track trends and evaluate the effectiveness of safety interventions.

As e-mobility continues to expand, the associated safety risks must be addressed with urgency and clarity. The rising toll of preventable injuries and fatalities, particularly among children, signals a need for immediate system-wide improvements. This includes better enforcement of existing laws, improved data collection, and a commitment to embedding safety considerations into the regulation, design, and integration of e-mobility into Queensland's transport landscape. Without these measures, the expanding use of e-scooters and e-bikes may continue to outpace the safety responses required to protect all road users.

[10] Berecki-Gisolf, J., Hayman, J. (2024) *Injuries associated with e-scooters, e-bikes and other e-micromobility devices: analysis of Emergency Department presentations and deaths in Victoria, 2016 to 2023* (Hazard Edition 93), page 11, Monash University, https://doi.org/10.26180/27710193.v2.
[11] Vallmuur, K., Mitchell, G., McCreanor, V. et al (2023) 'Electric personal mobility devices surveillance (E-MODES) study: Injury presentations to emergency departments in Brisbane, Queensland', *Injury*, Volume 54, Issue 6, https://doi.org/10.1016/j.injury.2023.04.036.
[12] TMR (January 2025) *2024 Weekly road fatality report* (1404b), Queensland Government, https://www.publications.qld.gov.au/dataset/road-safety-statistics/resource/bc9fa652-5ca2-4490-9bcb-2dd0a1e4b016 and response to QFCC (RQC43104).

Terms of Reference Four: Suitability and effectiveness of current regulatory frameworks

Summary

- **Regulation struggling to keep up:** Current regulatory frameworks for PMD's and e-bikes in Queensland are not effectively preventing unsafe use by children, with high rates of serious injuries despite existing age and safety restrictions.
- **High injury rates**: Data shows a significant number of injuries occur during school travel hours, on high-speed roads and in shared environments, highlighting gaps in both regulation and urban infrastructure.

The swift rise in the popularity of PMDs has significantly outpaced the development and enforcement of appropriate regulatory frameworks. Across Queensland and other Australian jurisdictions, this regulatory lag is increasingly visible in hospital and injury surveillance data, with a disproportionate number of incidents involving children and adolescents. This indicates not only a growing usage rate but also an alarming incidence of unsafe riding practices among minors.[13]

This pattern of harm is consistent with interstate and international data. A Victorian paediatric injury study identified 210 emergency department presentations for e-scooter-related injuries in children under 14, again reflecting poor compliance with existing age restrictions.[14] Studies conducted in Queensland following the introduction of shared scooter schemes in Brisbane similarly show that serious injuries, fractures, dislocations, and head trauma continue to affect child riders despite a narrow legal allowance for their use. The recurring emergence of severe cases involving illegal use indicates that regulatory frameworks, while legally sound on paper, have not translated into safe behavioural norms or systemic deterrence.

Compounding the regulatory mismatch are design vulnerabilities inherent to e-scooters, such as top-heavy structures, small wheels, and instability on uneven terrain, which increase the likelihood of high-impact injuries. Minor obstacles can cause the front wheel to lock, abruptly ejecting riders over the handlebars. The shared-use environment in which these devices operate, navigating footpaths, bike lanes, and roads with speed limits of 60 km/h or more further amplifies the exposure of young riders to potentially life-threatening hazards.

[13] Queensland Ambulance Service (2025). *Public Performance Indicator reports.* https://www.ambulance.qld.gov.au/about/performance-data/public-performance-indicators

[14] Berecki-Gisolf, J., Hayman, J. (2024) *Injuries associated with e-scooters, e-bikes and other e-micromobility devices: analysis of Emergency Department presentations and deaths in Victoria, 2016 to 2023* (Hazard Edition 93), Monash University, https://doi.org/10.26180/27710193.v2.

Terms of Reference Five: Effectiveness of current enforcement approaches and powers to address dangerous riding behaviours and the use of illegal devices

Summary

- **Active but ineffective enforcement**: Enforcement efforts have been active, with over 8,000 infringements issues since 2022, but penalties alone are note deterring dangerous behaviours, particularly among underage and unsupervised riders.
- **Opportunities from International models:** Comprehensive approaches - combining legislation, infrastructure design, education and vendor accountability - are more effective in reducing child injuries and improving safety outcomes.

Current road rules impose clear boundaries: children under 12 must not ride PMDs, and those aged 12 to 15 require adult supervision. While Queensland has taken notable steps to refine its legal framework for PMDs and e-bikes, including the 2022 reforms and the introduction of new penalties set to increase in 2025, the effectiveness of these measures hinge on sustained and adaptive enforcement. Speed limits vary by location, and helmet use is compulsory. Despite this, enforcement outcomes suggest these provisions are not deterring risky behaviour at scale.[15]

Since 2022, Queensland Police have issued over 8,000 infringements to PMD riders. The most common violations include failure to wear a helmet, unsafe road conduct, and carrying passengers.[16] Notably, Operation Zappo Stoppie; a targeted police operation in Noosa uncovered systemic issues, such as young riders regularly transitioning to higher-powered, non-compliant or road-registerable vehicles after receiving fines. These findings illustrate a troubling cycle: enforcement responses may be temporarily punitive but are not always preventative, and without corresponding education or infrastructure changes, young riders continue to engage in escalating risky behaviours.

Current enforcement powers, though active, are also limited by resourcing constraints and reactive strategies. Most penalties are financial in nature, ranging from $161 to over $1,200, yet fines alone have proven insufficient in modifying behaviours among young users, who are typically less financially accountable and less responsive to monetary deterrents. Furthermore, enforcement agencies report that illegal riding often occurs during high-traffic school travel periods and in locations that are difficult to police consistently, such as suburban footpaths or informal bike trails.

Internationally, jurisdictions such as Singapore and Germany offer instructive counterpoints. Singapore's Active Mobility Act combines mandatory training, registration, and vendor accountability with strong enforcement powers, leading to more effective regulation of PMDs in public spaces[17]. In Germany, treating e-scooters like bicycles with insurance requirements, technical standards, and enforced age limits, has created a more coherent

[15] RACQ (19 December 2023) 'Data shows e-scooter riders still not taking safety seriously', Queensland, www.racq.com.au/latest-news/news/2023/12/ns191223-data-shows-e-scooter-riders-still-not-taking-safety-seriously

[16] ABCNews (26 September 2023) *Parents urged to change mindset on e-scooters as accidents involving children surge*, www.abc.net.au/news/2023-09-26/escooter-accidents-with-children-increase-in-hospital-admissions/102820648

[17] Parliament of Singapore (2025). *Active Mobility (Amendment No.2) Bill 2020.* https://www.parliament.gov.sg/docs/default-source/default-document-library/active-mobility-(amendment-no-2)-bill-22-2020.pdf

and safer use environment. Young people are neurologically predisposed to underestimate danger, overestimate their capabilities, and be influenced by peer behaviour. Without embedding these considerations into enforcement models, penalties risk becoming symbolic rather than transformative. Queensland's framework, while increasingly aligned in principle, has yet to achieve the same operational coherence or behavioural impact.[18]

The current regulatory frameworks governing PMDs and e-bikes in Queensland and other Australian jurisdictions are increasingly misaligned with usage trends and risk profiles, particularly among children and adolescents. While legal rules and penalties are in place, their effectiveness is undercut by enforcement limitations, design vulnerabilities, and developmental factors that make young riders uniquely susceptible to harm. A high incidence of severe injuries, often involving illegal or unsafe use, underscores the inadequacy of current deterrence strategies. To meet this challenge, a reimagined approach is needed, one that shifts from punitive enforcement alone to a layered strategy combining education, infrastructure redesign, device regulation, and child-centred safety campaigns. International experiences make clear that effective regulation must be comprehensive, enforceable, and supported by a public safety culture.

Terms of Reference Seven: Communication and Education

Summary

- **Tailored and age-appropriate:** Communication and education efforts must be tailored to young riders' developmental needs, with clear, ongoing messaging about legal requirements, safe behaviours, and the risks of unsafe e-mobility use.
- **Parent and carer involvement**: Parents and carers play a vital role in modelling lawful and responsible riding, while community-led, culturally relevant campaigns can increase engagement and effectiveness.
- **Clarity and persistence in messaging**: A balanced approach that combines visible enforcement with widespread public education is essential to fostering a culture of safety, accountability, and shared responsibility on roads and paths.

Communication and education about device requirements, legal rules, and the consequences of unsafe use are central to ensuring the safe integration of e-scooters and e-bikes into Queensland's transport landscape. Despite the existence of a clear legal framework governing personal mobility devices, high rates of unsafe use, particularly among children and adolescents, suggest that knowledge gaps and developmental vulnerabilities remain significant barriers to compliance. As outlined in the 2023 Road Safety Education Blueprint, a whole-of-life approach to safety education is essential, beginning in early childhood and continuing through adolescence to support cognitive development and build road literacy.[19] Young people, due to their stage of brain development, are more likely to misjudge risk and act impulsively, which heightens their susceptibility to injury in complex traffic environments.[20] These factors underscore the importance of communication strategies that are tailored, developmentally appropriate, and supported by caregivers and communities.

[18] European Consumer Centre Germany (2025). *Country overview: E-scooter regulations in Europe.* https://www.evz.de/en/travelling-motor-vehicles/e-mobility/two-wheelers/e-scooter-regulations.html

[19] Queensland Government, Department of Transport and Main Roads (2025). *Queensland Road Safety Education Blueprint: Guiding Queensland's Approach to Road Safety Education from Birth to Young Adulthood.* https://www.tmr.qld.gov.au/Safety/Road-safety/Road-safety-strategy-and-action-plans/Road-safety-blueprint

[20] Developmental Cognitive Neuroscience (2017). *Beyond stereotypes of adolescent risk taking: Placing the adolescent brain in developmental context.* https://www.sciencedirect.com/science/article/pii/S1878929317301020

In addition to formal education settings, parents and carers must be equipped to model and reinforce safe e-mobility behaviours. Public campaigns that clearly explain the risks associated with unsafe use, including injury and legal penalties, are necessary to shift social norms and strengthen community expectations. This is particularly important considering evidence showing a rise in unsafe practices among adults who use e-scooters to transport children illegally or without safety gear. Such behaviour not only places children at serious risk but also undermines broader efforts to instil responsible riding practices. The visibility of enforcement, through police operations and penalties must be matched with equally strong educational messaging to ensure that the rules are understood not just as punitive measures, but as protections grounded in safety science and public wellbeing.

The concept of social licence also plays a key role in education and communication efforts. Riders of all ages must earn the trust of the wider community by demonstrating responsible conduct and respecting the rights of others in shared spaces.[21] Campaigns that highlight this social responsibility, while promoting empathy and mutual respect between riders, pedestrians, and motorists, help to foster safer public spaces and reduce conflict. Community-led and culturally tailored education, especially within First Nations and culturally and linguistically diverse communities, can further improve relevance and uptake. Co-designed messages delivered through trusted local figures or health and education services provide a pathway to address specific needs, dispel misconceptions, and support sustained behavioural change.

While penalties and enforcement will continue to play a role in deterring illegal or dangerous behaviour, they are not a substitute for deep, ongoing investment in public education and awareness. Campaigns such as StreetSmarts and school-based programs like Journi provide valuable platforms but must be scaled and embedded across systems to achieve a broader cultural shift.[22] Effective communication around legal requirements, technical standards of devices, and the consequences of unsafe use must be persistent, coordinated, and evidence informed. Only through such an approach can Queensland ensure that all riders—especially children and families, are supported to make safe choices in an increasingly complex e-mobility environment.

[21] Queensland Government (February 2024) StreetSmarts. *Rules for personal mobility devices*, Queensland, www.qld.gov.au/transport/safety/rules/wheeled-devices/personal-mobility-devices#carrypeople

[22] Queensland Government (February 2024) StreetSmarts. *Rules for personal mobility devices*, Queensland, www.qld.gov.au/transport/safety/rules/wheeled-devices/personal-mobility-devices#carrypeople