

Council on the Ageing Queensland

Submission to the Inquiry into E-mobility Safety and Use in Queensland

June 2025



Council on the Ageing Queensland

Council on the Ageing Queensland is a for-purpose statewide charitable organisation.

We are the state's Seniors Peak and Seniors Social Isolation Prevention Peak and work with and for older adults, advancing the rights, needs, interests, and futures of people as we age. For more than 60 years, we have worked to influence positive social outcomes for older Queenslanders.

We connect directly with older Queenslanders, their families, carers, and organisations, service providers, consumer advocates, special interest groups, and our federal, state and local governments. We engage with all of these groups to understand needs, aspirations, and priorities for older people in Queensland, and partner to achieve the best outcomes for people as we age.

Our work includes policy analysis, community education, representation, evaluation and research, community engagement, and cross sector collaborations to achieve systemic change. We deliver funded programs directly to older people in need and provide sector support to those organisations who offer aged care and other services to older people.

We seek to eliminate ageism and support healthy ageing and growth of age-friendly communities. There are many areas of policy development needed to achieve this – elder abuse, energy, social isolation and loneliness prevention, climate resilience and disaster preparedness, digital inclusion, health, housing, and transport are just a few.

Our vision is that ageing is a time of possibility, opportunity, and influence.

Council on the Ageing Queensland
Level 6, 10 Market Street Brisbane, QLD 4000
www.cotaqld.org.au
policy@cotaqld.org.au
(07) 3316 2999

Prepared by: Stephanie Power, Senior Policy & Research Officer
Authorised by: Darren Young, Chief Executive Officer

Acknowledgement

*Council on the Ageing Queensland acknowledges Australia's
First Nations Peoples as the original custodians of this land.*



Contents

Executive Summary.....	4
Background	8
Use of electric PMDs in age-friendly communities	18
Insights from communities 2022 - 2024.....	18
Insights from communities 2025.....	19
Community suggestions to improve safety in use of and interaction with PMDs ...	33
1. Infrastructure design and management of shared spaces	33
2. Enhanced signage and prioritisation of pedestrian safety	33
3. Licensing, registration, and insurance	33
4. Speed regulation and enforcement	33
5. Enforcement and penalties	33
6. Training, public education, and community awareness.....	34
7. Warning and safety equipment	34
8. Age restrictions and competency requirements	34
9. Accountability of riders <i>and</i> hire companies	34
10. Cost and feasibility	34
11. Equity considerations.....	35
Recommendations.....	35
a. Regulatory reform and legal integration	35
b. Infrastructure and spatial planning	35
c. Education, training and public awareness.....	36
d. Enforcement and risk mitigation	36
e. Insurance and accountability.....	36
f. Data collection and planning integration	36
Appendices	38
Appendix A. Map of approximate locations where PMDs have been noted as safety concerns by community members	38

Executive Summary

Enhancing safety and equity in the use of electric Personal Mobility Devices (PMDs)

Council on the Ageing Queensland, as the peak body for older Queenslanders, and as the peak body for seniors' social isolation and prevention, is very aware of the enablers to ageing well. Affordable and accessible transport is a hugely enabling factor for an age-friendly Queensland.

We note that there is a positive active transport movement, which carries health and financial benefits for older Queenslanders, and which directly contributes to innovative opportunities for the sustainability of age-friendly communities. However, the transport and infrastructure reforms have not kept up with the rapid change occurring in the electric Personal Mobility Device space.

Queensland's demographic profile is shifting, with the population of older residents projected to double by 2050. *This demographic change presents a timely opportunity to innovate in personal and active transport solutions, while also reimagining the design of public environments. Achieving age-friendly communities means people of all ages and abilities can move freely, confidently, and independently within their neighbourhoods, access essential services with ease and stay connected and within their communities for longer.*

Through gathering insights from community engagements and consultations 2022 – 2024 and through recent surveys delivered in 2025, we have learnt that there is widespread public concern regarding the use of electric Personal Mobility Devices (PMDs) including e-scooters and e-bikes in shared public spaces. While PMDs offer clear benefits in terms of low-cost transport, convenience, and environmental sustainability, the rapid and unregulated integration of these devices has outpaced infrastructure, policy, and public education.

We highlight below the key themes that have come directly from community voices where safety concerns overall have outweighed actual or perceived benefits of use of PMDs.¹

For older Queenslanders to use or share spaces with PMDs, the top three concerns need to be addressed:

1. Safety risks in shared environments

Community members consistently reported unsafe encounters with PMDs on footpaths, in parks, near schools, and in shopping precincts. Specific risks include speeding, silent approach without warning, lack of helmets or lights, and dangerous or unpredictable rider behaviour—particularly among youth and unsupervised riders.

2. Populations at risk of injury

Older adults, children, people with disabilities, and users of mobility aids were frequently identified as disproportionately impacted by unsafe PMD practices. Respondents stressed that existing infrastructure and regulatory frameworks do not sufficiently protect these groups.

¹ We note that there are small cohorts of older Queenslanders who use PMDs semi-regularly or regularly, and these cohorts differ to those older Queenslanders who use mobility aides, ride bicycles for leisure, etc.

3. Gaps in regulation and enforcement

There is strong public perception that PMDs operate in a legal and enforcement vacuum. Many feel that current laws lack clarity, visibility, and accountability—particularly when it comes to rider identification, registration, right-of-way, and speed management.

For all cohorts in age-friendly communities to feel safe as a user of PMDs, and to feel safe navigating shared spaces as a user of a mobility aide, as a cyclist, a pedestrian, etc. the following needs to be considered at the systemic policy and/or advocacy level:

a. Regulatory reform and legal integration

- Noting existing road safety rules and regulations in place, in addition to the work delivered by local councils in Queensland, we further recommend the development of a statewide standard for PMD operation.
- Mandate licensing and registration of PMDs that have capacity for higher speeds to align with other motorised transport systems (e.g., cars, motorbikes), and facilitate increased visible enforcement.
- In the context of shared public spaces, pathways, etc. enforce right-of-way, spatial restrictions, and penalties for non-compliance.

b. Infrastructure and spatial planning

- Fund and prioritise infrastructure upgrades to create physically separated lanes for pedestrians, cyclists, and PMD users.
- Restrict PMD access to shared pedestrian paths in dense or vulnerable areas unless clear signage and safety measures are in place.
- Ensure design principles are inclusive of older people and those with mobility, sensory, or cognitive impairments.

c. Education, training and public awareness

- Introduce mandatory training programs, especially for youth and first-time users, covering road rules, etiquette, and safety practices.
- Fund public education campaigns that raise awareness of rider responsibilities, device safety, and shared space etiquette.
- Integrate mobility safety education into school curricula and community outreach programs.
- Content of education/training/campaigns should include information on minimum age requirements, device power limitations, and mandatory safety equipment.

d. Enforcement and risk mitigation

- Establish clear enforcement mechanisms for breaches of PMD use laws, including fines, device confiscation, and penalties for repeat offences.
- Impose speed restrictions in high-traffic and vulnerable zones (e.g. near schools, aged care, shopping areas), enforced via technology or patrols.

- Ensure that PMD hire companies share responsibility for device misuse, including the tracking and reporting of dangerous behaviour.

e. Insurance and accountability

- Mandate third-party liability insurance for all PMDs, particularly those used in public spaces, to support compensation and accountability in case of injury or damage.
- Implement traceability systems for devices, including unique identification or registration plates to aid in enforcement.

f. Data collection and planning integration

- Fund local governments to collect usage and incident data (in line with e.g., motor vehicles), enabling evidence-based infrastructure and policy planning.
- Integrate PMD considerations into broader transport and urban development strategies, including future-proofing design and mobility equity.

The integration of PMDs into Queensland's existing transport systems and transport related infrastructure has commenced and the rapid uptake of PMDs has been inevitable. Therefore, protective mechanisms and appropriate legislations and enforcement must be made more visible through education and awareness raising, and this must be expedited.

The community has voiced clearly the need for safety, equity, and accountability, and these qualities must guide the next wave of reforms. This means a coordinated investment across legislation, infrastructure, education, and enforcement to ensure that PMDs are not only accessible, but safe and compatible with the rights and needs of all residents and commuters who use roads, pathways, thoroughfares, walkways, footpaths, and shared public spaces.

The use of electric PMDs alongside bicycles, mobility aides, etc. is part of a growing active transport movement which we believe strengthens age-friendly communities through enabling more options for affordable transport and keeping people of all ages connected to services and activities in their communities.

E-mobility in Queensland

**Existing e-mobility safety
considerations in the context of
an age-friendly Queensland**

Background

Queensland's population is ageing with the number of older people expected to double by 2050. This brings evolving opportunities for innovation in modes of personal and active transportation which needs to be accompanied by a wider vision for the design of age-friendly public spaces in our diverse Queensland communities. If people of any age and capacity can successfully access, navigate and retain their autonomy in getting around their local community and to essential services and supports, then we have achieved an age-friendly community.

The opportunities raised by the current Inquiry into E-Mobility Safety and Use in Queensland ('the Inquiry') we anticipate will have positive outcomes for other areas such as the Queensland Sport Strategy 2025, and the upcoming 2032 Games. We strongly feel that the reform brought about by these developments needs to prioritise accessibility, mobility and inclusion (for community participation). For older people, this would mean they are able to access where they need to go and feel safe in doing so whether that be by walking, riding, scooting, rolling on their local pathways, transiting through public transport hubs, shopping precincts, health precincts or parks (for example).

Active transport includes cycling, walking, and other active ways travelling that is done alone or combined with trips on public transport² (or community transport). With the increased use of PMDs since 2018,³ active transport space has evolved, and now our parks, footpaths and shared public spaces are busier than ever. And while the multiple benefits to health, convenient affordable transportation have been very well received by Queensland commuters and riders (especially with the introduction of 50 cent fares), growth has been so rapid that community awareness around use of PMDs and navigation of shared spaces, has not had a chance to 'catch up'. This is causing some older Queenslanders heightened anxiety around going about their everyday lives.

Definitions for devices

For older Queenslanders, 'mobility device' may carry multiple connotations and definitions, and historically is associated with older technologies (including assistive technologies) that assist people to walk, scoot, roll to get from A to B, or as a primary mobility aid for daily life. For example, in the Assistive Technology space, it could refer to electronic devices, wheelchairs, walkers or braces.⁴ In an accessibility and mobility context, especially for older people experiencing changing capacities or disabilities, it can refer to mobility aids such as walking frame, walking stick/cane, wheelchair, mobility scooter, and crutches.⁵

In this submission, we use electric Personal Mobility Devices (PMDs) to refer to devices that are the focus of the E-mobility Inquiry (e-skateboards, e-scooters, and e-bikes – personal mobility devices that are electric and usually used for personal transportation and recreation, for example). We use 'mobility aid' to refer to technologies that assist people including older

² <https://www.tmr.qld.gov.au/travel-and-transport/cycling/about-cycling>

³ Researchers from QUT published findings in 2021 which highlighted that since 2018 there were more privately-owned and fewer shared e-scooters one year after their introduction to Queensland. In addition, illegal behaviours had decreased on shared e-scooters, and compliance by scooter owners had remained higher. It was likely that e-scooter safety had improved:

<https://www.sciencedirect.com/science/article/abs/pii/S0001457521004826>

⁴ <https://www.atia.org/home/at-resources/what-is-at/>

⁵ <https://abilityactionaustralia.com.au/all-about-mobility-aids/>

Queenslanders to navigate when they are out and about, or when it is used as a primary aid for daily life due to changing capacities or living with disabilities.

Legislation and regulations

Legislation on e-mobility (like e-scooters) differs between Australian states and territories. In Queensland, e-scooter regulations are set at the state level, meaning the core rules apply across all regions, whether you are a commuter in Brisbane, Cairns, the Gold Coast, or elsewhere. However, local councils can impose additional restrictions or guidelines within their jurisdictions.

In Queensland there is a growing and extensive network of bike lanes and shared pathways. E-scooters, in general, are allowed on footpaths, shared paths, bike paths, and local streets where there are speed limits of 50kms per hour or less and no dividing line.⁶ There are regular compliance checks e.g., compliance exercises in recent months have fined up to 50 riders in a single day for violations such as not wearing helmets and speeding.⁷

As of 2024, statewide rules in Queensland for use of e-mobility devices include up to 25km per hour on shared paths and bike lanes, and up to 12km per hour on footpaths, and the riders must be 16 years and over, or 12–15 years old with adult supervision. No driver's license required to ride a device, and a helmet is mandatory for all riders.

People are allowed to ride on footpaths, shared paths, bike lanes, and local roads (within 50 km per hour zones or lower). Commuters are not allowed on main roads, motorways, or in pedestrian-only zones. In relation to alcohol and drug use, the same rules apply like driving - no riding under the influence. E-bikes must have motors not exceeding 250 watts and provide pedal-assist only, cutting out at 25 km per hour. Devices such as e-scooters are not allowed on motorways, pedestrian malls, or where specifically prohibited by signage.

There has been multiple reports in the Media regarding highest fines for riders from \$1,078 up to \$6,200 fines for dangerous behaviour, including speeding and not wearing helmets.⁸ According to the Queensland Government's official information page on Personal Mobility Devices (PMDs),⁹ there are general road rules (e.g., keeping left, overtaking, and other driving/riding rules; level crossings; use of mobile phone which incurs the highest fine listed on the page at \$1,209; roundabouts; speeding; stopping and giving way; traffic lights and turn signals; traffic signs and road markings; turning; sharing the road including emergency vehicles and trams).

Rules specific to PMDs are thorough and incur the same fine across all offences - \$161 – and include considerations such as age requirements, unsafe riding, failing to give way or stop, riding in areas or sections of the road that are not permitted for PMDs, not obeying regulations in shared zones (with bicycles, other PMDs, drivers, pedestrians, etc.); disobeying signage; no helmet; device not being safe to ride due to no light at night, and leading an animal while riding a bicycle.

⁶ <https://streetsmarts.initiatives.qld.gov.au/initiatives/pmd-rules/>

⁷ <https://www.couriermail.com.au/news/opinion/kylie-lang/kylie-lang-something-needs-to-be-done-about-the-escooter-ebike-menaces-on-our-streets/news-story/f0b58bd04c5a66910653d38ab6415b61>

⁸ <https://www.theguardian.com/australia-news/2023/oct/12/queensland-e-scooter-laws-fines-rules-court>
<https://www.abc.net.au/news/2022-11-01/qld-e-scooter-rule-changes-fines-mobility/101597546>

⁹ <https://www.qld.gov.au/transport/safety/fines/personal-mobility-device-riding-rules-and-fines>

The most serious infractions (reckless, dangerous behaviour causing accidents or serious injuries, offenders face court proceedings) have been reported as incurring fines up to e.g., \$6,192.¹⁰

We provide in Table 1. safety considerations, enforcement and other considerations in relation to e-mobility in regions across Queensland.

Table 1. Examples of regulations across regions in Queensland.

Area/Region	Safety considerations	Enforcement*	Other considerations
Brisbane	- E-mobility Strategy: Council led and focussed on integration of e-devices into transport network ensuring safety and accessibility	- Infrastructure or location specific: Management of shared e-scooter programs (e.g., Neuron, Beam) including parking rules and operational areas	- Designated e-mobility parking hubs to prevent obstructions on footpaths and shared public spaces Figure provided is up to 6,500 shared e-scooters and e-bikes for hire across the Brisbane CBD - Infrastructure or location specific: Geo-fenced slow zones, prohibited, or regulated zones for shared (rental) e-scooters (e.g., in highly populated transit areas such as Southbank or along Queen St Mall)
Gold Coast	- Approved helmets and ensure devices have working brakes and warning devices - Emphasis on shared paths and bike lanes - <i>Gold Coast Road Safety Plan</i> aiming for 50% reduction in road-related fatalities by 2030. ¹¹	- E-scooters are permitted on certain roads and footpaths, but not on motorways or roads with speed limits over 50km per hour - <i>Operation Elektra</i> – police operation targeting PMD safety	- Shared E-Scooter Programs operated by companies like Lime. Programs aim complement the city's <i>Active Travel Program</i> and reduce car dependency. - Coastal pathways, especially along the beachfront, are popular for e-scooter use.
Sunshine Coast	- Educational initiative to promote safe riding practices 18-month trial of e-bikes and e-scooters in Maroochydore and Mooloolaba was initiated to assess community safety and uptake		- Council advocating for statewide speed limits re: e-scooters on footpaths and shared spaces

¹⁰ <https://www.theguardian.com/australia-news/2023/oct/12/queensland-e-scooter-laws-fines-rules-court>

¹¹ Recent reports indicate a significant increase in e-transport-related injuries, prompting discussions on safety measures.

Area/Region	Safety considerations	Enforcement*	Other considerations
Fraser Coast		<ul style="list-style-type: none"> - Proposed changes to local laws to accommodate increased use of e-scooters. Council seeking feedback on changes re: governing use of PMDs on footpaths - Interim local laws enabled use of e-scooters on footpaths as part of e-scooter trial 	
Bundaberg	<ul style="list-style-type: none"> - Council working with e-scooter operators for implementation of safety measures including patrolling use of helmets and enhancing education through local campaigns (Council response to community feedback) 	<ul style="list-style-type: none"> - AI technology tracks usage of helmets to enable issuing of fines in instances of neglect or damage 	

**In addition to the Queensland legislation and rules already outlined.*

Injuries and safety considerations in Queensland

The use of electric PMDs has been associated with a significant increase in injuries across Queensland. While the majority of these cases involved individuals aged 25 – 34 years, older adults are also affected, and this is especially concerning given the severity of injuries like fractures, dislocations, head injuries and head trauma.¹² In 2024, there were 1,504 emergency department presentations due to e-scooter incidents, up from 1,050 in 2023.¹³ Approximately 18% of PMD-related emergency department presentations required hospital admission, indicating the potential severity of these incidents.¹⁴ In 2024, eight fatalities were recorded in Queensland involving PMDs which is a significant increase from two fatalities in 2023.¹⁵

In addition, the Queensland Injury Surveillance Unit (QISU), released data regarding injuries on e-scooters. One hundred and eleven patients were interviewed,¹⁶ with 109 injured on an e-scooter. The key findings were 79% of people using privately owned scooters reported wearing (and fastening) a helmet compared to 50% of hire scooter users (29% of hire scooter users reported not wearing a helmet compared to 19% of private scooter users).

¹² <https://www.racq.com.au/latest-news/news/2024/11/ns251124-reform-urgently-needed-to-reduce-horrific-e-scooter-injuries>
<https://www.surgeons.org/surgicalnews/Articles/2023/Volume-24/Issue-6/RACS-Trauma-Symposium>

¹³ <https://www.aushsi.org.au/aushsi-research/e-mobility-safety-research/>
<https://www.racq.com.au/latest-news/news/2025/05/racq-welcomes-inquiry-into-e-mobility-safety>

¹⁴ <https://www.aushsi.org.au/aushsi-research/e-mobility-safety-research/>
<https://metronorth.health.qld.gov.au/researchsnapshot2021/jti-epmd-safety>

¹⁵ <https://www.news.com.au/national/queensland/news/queensland-police-issue-warning-to-parents-gifting-ebikes-or-escooters-for-christmas/news-story/ecda4158bd0af13c5a121d86b42174e7>

¹⁶ The Queensland Injury Surveillance Unit (QISU) identified e-scooter related presentations in 31 participating emergency departments across Queensland, not all hospitals in Queensland provide data to QISU. Patient interview participating hospitals included e.g., Royal Brisbane and Women's Hospital, Princess Alexandra Hospital, Townsville Hospital and Gold Coast University Hospital and Robina Hospital.

Private scooter users reported travelling over 25kms per hour 35% of the time, compared to just 12% of hire scooter users, and 35% of hire scooter users reported consuming alcohol in the previous eight hours compared to 7% of private scooter users. Further, fifty-eight percent of private scooter users are triaged at a high urgency of 2 or less compared to 26% of hire scooter users, and 60% of private scooter users arrive by ambulance compared to 39% of hire scooter users.

Private scooter owners are more frequent users of PMDs with three-quarters indicating they use the devices four or more times per week, while 39% of hire scooter users only used PMDs once a week, and 30% had never used one before the injury event.

The rise in ePMD-related incidents has prompted calls for clearer regulations and safety measures. In addition to the current Queensland Inquiry, it is important to note the positive initiatives that have since taken place in a few short years. For example, in 2022, RACQ and the Royal Brisbane and Women's Hospital (RBWH) Foundation donated \$200,000 to Jamieson Trauma Institute (JTI) to fund research into e-scooter injuries, with the results being used to shape policy and improve safety.^{17,18}

Road safety considerations intersecting with PMD safety considerations

Older adults (aged 65 years and over) account for approximately 15% of road fatalities in Queensland. This includes both drivers and other road users within this age group.¹⁹ In 2023, there were 55 fatalities involving older adult drivers or riders aged 60 to 74 years. There were 26 fatalities involving drivers or riders aged 75 years or over in 2023, consistent with the previous year. In addition, there were 1,595 hospitalised casualties involving older adult drivers or riders aged 60 to 74 years, which is an increase from 1,476 in 2022. There were 603 hospitalised casualties involving drivers or riders aged 75 years or over in 2023, up from 560 in 2022.

The data indicates the importance of targeted road safety measures for older adult demographic, and the increase in hospitalised casualties among older adults. The increase in the population rate of older adults will necessitate an increase in community education, enforced supports, and monitoring of older cohorts as drivers, riders, pedestrians, and users of mobility aides and PMDs.

National data indicates that older pedestrians (aged 65 and over) are disproportionately represented in fatality statistics. This overrepresentation is attributed to factors such as reduced ability to navigate complex traffic situations, slower walking speeds, and increased fragility, making them more susceptible to severe outcomes in accidents.²⁰ National trends further suggest that while older pedestrians constitute a smaller proportion of total pedestrian injuries, the severity of their injuries tends to be higher, often leading to hospitalisation.²¹

¹⁷ <https://www.rbwhfoundation.com.au/blog/rbwh-foundation-research-shows-e-scooter-users-still-not-taking-safety-seriously>

¹⁸ This funding supports a three-year collaboration between JTI and major emergency departments, including the Royal Brisbane and Women's Hospital. The research focuses on injury patterns, severity, circumstances, and treatment outcomes related to e-scooter incidents: <https://www.racq.com.au/about-us/news-and-media/news/2022/8/ns290822-racq-and-rbwh-foundation-donation-set-to-drive-electric-scooter-trauma-research>

¹⁹ Refer to the Queensland Government's road safety statistics: <https://www.qld.gov.au/transport/safety/road-safety/statistics> They have a road fatality report (the latest updated May 2024): https://www.publications.qld.gov.au/dataset/road-safety-statistics/resource/26a4d2f3-9a1f-45dc-82c7-0501916d0323?inner_span=True

²⁰ <https://datahub.roadsafety.gov.au/safe-systems/safe-road-use/pedestrians>

²¹ <https://datahub.roadsafety.gov.au/safe-systems/safe-road-use/pedestrians>

This matters greatly in discussions on PMD safety considerations particularly given the increase in reckless or dangerous behaviours by PMD riders with reports from communities of e.g., using PMDs on main roads, highways, intersections, and ‘tailgating’ and overtaking cars. The use of PMDs in shared spaces including main roads, means that safety considerations need to be taken into account from the PMD user and the car driver perspectives. In addition, older adults as pedestrians, mobility aid, and PMD users, have nuanced safety considerations when interacting with other commuters using shared footpaths, walkways, parks, and precincts.

E-Mobility benefits and risks through a policy lens

The rise of e-mobility devices such as e-scooters and e-bikes has ushered in a transportation movement with substantial implications for e.g., urban planning, safety, the built environment and outdoor shared spaces. While governments across Australia and internationally acknowledge the potential of these devices to support sustainable, low cost and accessible transport alternatives, this rapid evolution has also exposed regulatory gaps and prompted calls for reforms.

Council on the Ageing Queensland undertook a scan of trends in the media in relation to electric PMDs and related matters.²² We outline the positives or benefits to mobility and transport sustainability; the negatives or risks from accidents, injuries, limited or failure to enforce regulations or rules, and safety concerns; and finally, considerations around equity, cost and infrastructure for a rapidly evolving transportation movement.

A recurring theme is the role of e-mobility in promoting **independent, low-emission travel**, especially for people who cannot drive due to age related or disability considerations, or for

²² The list of URLs accessed to inform this overview included 27 news articles from the ABC and the Guardian:
<https://www.abc.net.au/news/2025-05-13/nsw-e-bike-e-scooter-laws-parliamentary-inquiry/105286876>
<https://www.abc.net.au/news/2025-05-06/speeding-teenage-ebike-riders-gold-coast-police/105257602>
<https://www.abc.net.au/listen/programs/theconversationhour/the-conversation-hour/105240188>
<https://www.abc.net.au/news/2025-04-21/summah-richards-remembered-after-fatal-laidley-e-scooter-crash/105197332>
<https://www.abc.net.au/news/2025-04-17/dad-fined-allowing-son-to-ride-illegal-electric-bike/105188024>
<https://www.abc.net.au/news/2025-04-11/mobility-scooter-user-dies-in-crash-horsham/105164028>
<https://www.abc.net.au/news/2025-03-27/mount-gambier-council-e-scooter-trial-tender/105099494>
<https://www.abc.net.au/news/2025-03-21/hire-scooter-companies-withdraw-from-in-city-of/105083596>
<https://www.abc.net.au/news/2025-03-21/e-scooter-hire-lime-neuron-fitzroy-richmond-city-of-yarra/105079840>
<https://www.abc.net.au/news/2025-03-12/yarra-council-escooters-lime-neuron/105038996>
<https://www.abc.net.au/news/2025-03-05/101-year-old-man-on-mobility-scooter-attacked-in-darwin-cbd/105012826>
<https://www.abc.net.au/news/2025-02-24/allan-smillie-mobility-scooter-crash-stop-sign-kingston/104972570>
<https://www.abc.net.au/news/2025-02-22/teen-charged-after-fatal-kingston-crash/104969592>
<https://www.theguardian.com/australia-news/2025/may/13/nsw-to-legalise-e-scooters-over-16>
<https://www.theguardian.com/australia-news/article/2024/sep/02/beam-e-scooters-brisbane-loses-licence-daily-cap>
<https://www.theguardian.com/australia-news/video/2025/mar/07/brisbane-mans-car-trapped-by-e-scooters-ahead-of-tropical-cyclone-alfred-video>
<https://www.theguardian.com/australia-news/2024/oct/30/nsw-e-scooter-inquiry-findings>
<https://www.theguardian.com/australia-news/2023/oct/12/queensland-e-scooter-laws-fines-rules-court>
<https://www.theguardian.com/australia-news/article/2024/jul/11/neuron-e-scooters-melbourne-ai-cameras-safety>
<https://www.theguardian.com/australia-news/commentisfree/article/2024/jul/12/australia-e-scooter-safety-protocols>
<https://www.theguardian.com/world/2025/feb/18/e-scooters-blamed-for-big-jump-in-children-caught-in-uk-driving-without-insurance>
<https://www.theguardian.com/world/2025/jan/03/barcelona-fine-e-scooter-users-riding-pavements>
<https://www.theguardian.com/australia-news/article/2024/aug/14/melbourne-e-scooter-ban-jacinta-allan>
<https://www.theguardian.com/world/article/2024/sep/05/madrid-moves-to-ban-app-rented-e-scooters-over-safety-concerns>
<https://www.theguardian.com/business/2023/dec/20/bird-file-bankruptcy-electric-scooters>
<https://www.theguardian.com/australia-news/article/2024/aug/09/nsw-closes-loop-hole-to-stamp-out-fires-caused-by-substandard-lithium-ion-batteries-in-ebikes-and-scooters>
<https://www.theguardian.com/money/2025/feb/22/using-an-e-scooter-can-add-1000-to-your-car-insurance-quote>

economic reasons. E-bikes and e-scooters reduce reliance on short car trips, alleviate parking demand, and help connect people to e.g., train stations, schools, and workplaces. In both Australia and New Zealand, trials have shown that targeted subsidies and safer infrastructure dramatically increase uptake of PMDs, especially among women, older adults, and lower-income users.

From a **climate and urban planning perspective**, e-mobility devices support quieter streets, lower carbon emissions, and less congestion. Cities like Sydney and Brisbane are trialling integrated schemes during major public transport disruptions, such as train line closures, with early signs pointing to e-scooters being viable connectors within broader transport networks. Further, international comparisons, particularly in the European context, demonstrate that clear regulations, coupled with accessible infrastructure, can embed or add e-scooters to existing infrastructure without overwhelming pedestrian zones.

The use of **smart technologies**, such as Neuron's AI-powered cameras in Melbourne, shows the potential to improve the compliance of PMD users/riders including identification of e.g., misuse of footpaths. These tools may help local governments balance safety with freedom of movement. New South Wales have recently legislated e-scooter use on roads and shared paths for riders aged 16 years and over which demonstrates a move towards structured integration of transport alternatives.

Despite these benefits, the surge in e-mobility use has been accompanied by a **very concerning increase in injuries and fatalities**. Emergency departments in Victoria and Queensland have seen injuries soar by over 400% in recent years. Common injuries include head trauma and upper limb fractures, and several fatal incidents involving children, older people, and pedestrians. Recent tragic events included the deaths of a 12-year-old girl in Laidley and a 76-year-old man in Kingston, both of whom were hit while using mobility devices. In another case, a 90-year-old man was killed in Horsham after a collision with a 4WD while riding a mobility scooter.²³

The practice of **illegal and unsafe modifications** to devices such as e-bikes capable of reaching 120kms per hour, often ridden by younger cohorts without helmets, and with unregistered devices, highlight significant enforcement challenges. In some cases, parents have been fined for allowing children to ride modified or non-compliant e-bikes, exposing households to legal and financial risks.

Looking at international examples, **Barcelona** and **Madrid** have introduced strict fines and bans due to reckless riding, cluttered pavements, and a failure by companies to control parking or enforce compliance. **Melbourne City Council** cancelled its e-scooter hire agreements due to mounting safety complaints which led to Lime and Neuron removing hundreds of scooters, which reflects the growing public concern over rider behaviour and accountability and control of devices by local government.

²³ At the time of finalising this submission, we note the tragic event of a 12-year-old male in Mareeba who lost his life while riding a PMD: <https://www.news.com.au/national/queensland/news/teen-dies-in-escooter-crash-at-mareeba-far-north-queensland/news-story/0ada6fdf71d9462d7516a636ac5db909>

Internationally, **insurance and legal liabilities** are becoming more prominent. In the UK, a spike in uninsured minors riding e-scooters has led to a sharp rise in IN10 driving offences. E-scooter use can also inflate car insurance premiums by up to £1,000, with courts treating unregistered e-mobility use as akin to unlicensed driving. Australia may face similar challenges unless clear, harmonised rules are adopted nationwide.

A further risk highlighted in the media has been **battery fires** with multiple incidents from **lithium-ion batteries in e-scooters and e-bikes**. **New South Wales** recently banned unsafe components, but the lack of national battery safety standards remains a concern for communities, especially for PMD users who charge their devices in homes or apartment dwellings.

Several articles raised broader **social and economic concerns** such as the affordability and financial viability of PMD hire/rental schemes. In the **City of Yarra**, a 400% council fee increase caused scooter providers to withdraw, affecting people who relied on them for daily travel. This example highlights how local fee structures can have unintended equity impacts, reducing access for lower socio-economic backgrounds or PMD users with one or more vulnerabilities.

In relation to **infrastructure**, many cities and towns remain underprepared with existing road and path design often not being able to safely accommodate both riders and pedestrians, resulting in conflict, potential collisions, and confusion. Some agencies face pressure to fast-track protected lanes and designated parking areas, and public opinion remains divided. Some community members welcome the convenience and environmental benefits, while others express frustration at footpath obstructions, unsafe speeds, and noise. Several media outlets described this tension as a ‘love-hate relationship,’ likening it to earlier transport reforms clashing with legacy transport systems and norms.

An in-depth body of work was undertaken in 2023 by Churchill Fellow, Nikki Huddy,²⁴ who examined the **deployment and uptake requirements of e-mobility in low income and regional communities**. This innovative research highlighted the barriers to e-mobility in regional communities, opportunities for wider use of e-mobility, key policy recommendations.²⁵

The research uncovered barriers to e-mobility in regional communities such as limited or lack of transport equity with public transport planning generally prioritising high-density urban areas, leaving regional and low-income communities underserved. In addition, there was limited infrastructure including the absence of bike lanes, charging stations, and safe paths in regional areas which makes adoption of e-mobility even more difficult. There was uncertainty around regulations with local governments struggling to regulate new mobility models within existing frameworks, creating confusion for providers and users. Finally, there were financial

²⁴ <https://www.churchilltrust.com.au/qld/fellow/nikki-huddy-ql-2022/>

²⁵ Huddy, N. (2023). *How regional Australia can join the Mobility Revolution*. Churchill Fellowship to examine deployment and uptake requirements of e-mobility in low income and regional communities. [Report, 26 September 2023]. <https://churchilltrust.my.salesforce-sites.com/api/services/apexrest/v1/image/?Id=06998000002W64LAAS&forceDownload=Yes>

considerations around the upfront high cost involved with e-bikes and e-scooters despite the longer-term reduction of transport costs and economic benefits for lower-income households.

The research highlighted the positives and opportunities of the E-mobility movement with e-bikes and e-scooters presenting an opportunity to fill transport gaps in regional areas where traditional public transport is limited, non-existent or unreliable. In addition, e-mobility can significantly contribute to reducing carbon emissions, particularly by replacing short car trips (e.g., a trip under 5kms).

To make the most of opportunities we need advocates for ensuring access to affordable and convenient transport solutions, particularly for older adults, people with disabilities, and those without cars. E-mobility can function as a first-last kilometre solution, increasing connectivity in rural communities.

Recommendations inferred or highlighted from Nikki's research included local government collaboration where councils should engage with shared mobility providers to find and tailor solutions for regional communities. Governments should prioritise and invest in the expansion of protected bike lanes, charging stations, and dedicated spaces for e-mobility users and parking spaces. Further, subsidisation of e-mobility in the same way as electric vehicles can promote it and support it as a viable alternative transport mode for lower-income households. Finally, education and awareness raising through e.g., community campaigns can help normalise use of PMDs and encourage adherence to road rules, safety considerations and responsible riding behaviours.

Latest insights

What older

**Queenslanders think
about e-mobility use,
electric PMDs & safety
considerations**

Use of electric PMDs in age-friendly communities

Insights from communities 2022 - 2024

In order to better understand usage and safety considerations of electric PMDs in age-friendly communities, Council on the Ageing Queensland undertook a thematic analysis of its existing datasets from 2022 through to 2024. In addition, we utilised more recent unpublished datasets from 2025 through an Ageing Well survey, and a survey designed specifically to inform the current E-mobility Inquiry.

From our **engagements with Queensland communities in 2022 through the Listening Post project**, we learnt that many older adults rely on a **wide range of mobility aids** including wheelie walkers, walking frames, wheelchairs, motorised scooters, walking canes, and crutches in their everyday life. Some older adults were amputees or have lived with long-term disabilities, and others are carers who often take on physically demanding roles, needing to 'drive' or guide people in mobility aids. This caring role takes a toll on their own health, particularly when surrounding infrastructure is inadequate. In several regional areas, people expressed frustration at the lack of accessible public buildings and facilities, such as community halls lacking ramps, automatic doors, or accessible toilet facilities. In rural and regional areas, residents have sometimes waited years for infrastructure upgrades e.g., safe paths from homes to public footpaths, to enable streamlined use of mobility devices. The ability to safely age in one's community is closely tied to the adequate built environment and infrastructure (transport, public parks, footpaths, walkways, shared public spaces, etc.).

Transportation remains a major barrier to participation, independence, and community connection for older adults, particularly those with mobility needs. Across Ipswich, Gympie, Logan, Roma, and Moreton Bay, residents reported that public transport, where it existed, was often or sometimes infrequent, not as accessible to suburban areas, and inaccessible for people using wheelchairs or scooters. Construction projects, rail upgrades, and changing timetables further complicated local travel, especially in relation to poor wayfinding or inaccessible design. The cost and unavailability of taxis in outer suburbs and larger regions leaves many older adults reliant on private vehicles or the goodwill of others. While some individuals adopted scooters or walkers to maintain independence, they also raised concerns about road safety, night-time visibility, and pedestrian safety, particularly with upright e-scooters. For many, the looming transition to driving cessation is emotionally difficult, symbolising a loss of autonomy. At the same time, people voiced a strong desire to remain in their communities and homes, balancing risk with the importance of place, stability, and connection to community (and socially).

Through community engagement from **Re-imagining Ageing forums in 2024**, we continued to build insights and understanding of challenges, barriers and enablers to ageing well in Queensland communities with relation to transport, built environment and (transport and other) infrastructure. Older adults highlighted the **importance of well-maintained, shaded, and easy to navigate footpaths, which allowed them to use mobility aids like motorised scooters to travel independently beyond the reach of public transport.**

Participants also valued green spaces, benches, park amenities, and appropriate lighting for both enjoyment and safety. In regional and suburban areas, concerns were raised about unsafe, uneven footpaths, a lack of wheelchair access, and the impact of poor maintenance e.g., long

grass, black soil subsidence, on using mobility aids on footpaths or getting around local neighbourhoods.

Many participants expressed frustration over **limited or unreliable transport services**, particularly taxis for wheelchair users, limited weekend timetables, or the higher cost of travel for health appointments. The need for better coordination across transport modes (bus, train, taxi), affordable access, and seating priority was also raised, especially in Southeast Queensland and regions like Rockhampton and Longreach.

Transport was described not only as a means of getting from place to place but as deeply connected to other dimensions of ageing well such as access to health care, social connection, outdoor enjoyment, and economic participation. Infrastructure such as car parking at community hubs, community transport operated by trusted local services, and My Aged Care related supports such as equipment or aids were all appreciated. However, challenges in accessing scooters in commercial centres (post-COVID), pedestrian safety in relation to anxiety around upright e-scooters, and inflexible infrastructure near newer housing estates all presented barriers. Participants called for more disability parking bays, better workforce training in mobility support, and investment in age-friendly design. For many, mobility and accessibility to essential services and local hubs meant dignity, freedom, and the ability to stay socially and economically engaged. These insights captured the need for inclusive planning, safety-focused design, and community care principles which guide future investments in infrastructure.

Insights from communities 2025

Through **recent insights from 2025 through the Ageing Well survey**,²⁶ we have learnt that older people in Queensland value well maintained and navigable footpaths and walkways (60% of older Queenslanders agreeing footpaths are well maintained, 75% agreeing that they are easy to walk on with even surfaces, and 50% agreeing that footpaths are accessible for wheelchairs and other mobility devices). In addition, 65% of older Queenslanders agreed that public buildings were suitable (to access) for older people.

Further, 35% of older Queenslanders agreed that their transport services were reliable or convenient, however, 35% also disagreed that transport services were reliable or convenient, highlighting a tension within transportation. Forty-five percent of older Queenslanders were able to access a train or bus in their local community, and 60% were able to access and understand information regarding transport routes, schedules and facilities. See Table 2. for more findings from this survey.

Table 2. Ageing Well Survey responses (up until 30 March 2025) – Age-friendly domain areas: Outdoor spaces and building; transport

Domain	Description	%	%	%
		Agree	Neutral	Disagree
Outdoor space	Footpaths are well maintained (no cracks or tree roots).	60	5	35

²⁶ The Ageing Well survey is a collaboration between Australian Catholic University (ACU), Queensland State Government and Council on the Ageing Queensland. The ACU team are the project leads and research team overseeing the original survey design based on international and national evidence, data collection, methodologies, and data management.

	and buildings			
	Footpaths are easy to walk on with consistent and even surfaces.	75	4	21
	Footpaths are accessible for wheelchairs and other mobility devices.	50	10	40
	The public buildings that I visit are suitable for older people	65	20	15
Transport	I can easily get public transport (like the train or bus) in my community.	45	20	35
	The services are reliable/ convenient (right place at right time)	35	30	35
	I can easily access and understand the routes, schedules and facilities.	60	20	20

****Note:** The Ageing Well survey is an iterative and unpublished dataset. To date, specific regions have been surveyed; therefore, this dataset does not reflect all regions across Queensland.*

In addition, survey respondents shared their concerns, desires, barriers and other considerations to navigating age-friendly communities. A dominant theme was a concern about the safety of shared footpaths due to the presence of **e-scooters, e-bikes, and bicycles**. Many older adults reported **feeling vulnerable when walking or using mobility aids**, citing devices travelling at high speeds, lack of rider accountability, and the absence of dedicated spaces or clear infrastructure for devices. These concerns highlight increasing barriers to age-friendly communities through people reducing their outdoor and social activities (a form of social withdrawal) among some individuals.

Many older adults advocated for **separate pathways for pedestrians and cyclists/e-scooter users**, along with **lower speed limits** and **stronger enforcement**. Even when footpaths were reported as ‘well maintained,’ their shared use of these paths sometimes generated fear, anxiety and instability, particularly for individuals already navigating balance or mobility challenges.

In regional and semi-rural communities, a **lack of footpath infrastructure** was reported as a major issue. Where footpaths did exist, they were often **poorly maintained or damaged**, resulting in falls and injuries. Uneven surfaces, overgrown grass, poor lighting, and tree root damage were among the most common issues.

Respondents **linked mobility to independence, identity, and wellbeing**. For some, the ability to use a scooter, bike, or walk outdoors was described as essential for maintaining quality of life. Others reflected on current or anticipated declines in mobility, the role of their partner as a carer, and the absence of accessible transport infrastructure, especially for hospital visits or daily activities.

The most recent survey comprising 18 questions was conducted by Council on the Ageing Queensland **late May – early June 2025 to explore community perspectives on the visibility, use, and safety of electric Personal Mobility Devices (PMDs)**, such as e-scooters and e-bikes in Queensland. A total of 166 individuals responded to the survey. The majority of respondents

were older adults aged 66 years and over. The survey garnered broad insights into the safety perceptions and usage trends surrounding e-mobility devices.

The analysis of the survey findings revealed significant concern among respondents regarding e-mobility safety. While many individuals regularly observe PMDs in their communities, the proportion who use these devices is relatively low. Respondents who do use PMDs or mobility aids reported varied levels of safety, with a notable proportion feeling unsafe when encountering these devices in shared public spaces. The majority expressed concerns about potential collisions, speed issues, and limited infrastructure to support safe coexistence among the different device users.

The majority of respondents (over 82%) resided in Southeast Queensland, followed by much smaller representations from the Wide Bay Burnett (under 6%) and Darling Downs and Southwest (just over 4%). Less than 2% of respondents were from Central Queensland, North Queensland, and Mackay/Isaac/Whitsunday. Around 4% lived in Far North Queensland, while no participants indicated they resided in Northwest Queensland. The Central West region was inadvertently excluded from the survey options.

Regarding age, the highest number of respondents were in the 66–75 age bracket (over 30%), closely followed by those aged 76–85 (29%). Respondents aged 50–65 accounted for just over 18%, while younger individuals under 50 made up just over 13%. A smaller group (just over 9%) were aged 86 and above.

In terms of PMD visibility and use, around 61% of respondents regularly see or use e-scooters, over 52% see or use e-bikes, and close to 31% noted e-skateboards. More than one-third (34%) of respondents indicated they do not regularly see or use any PMDs in their community. When asked about their personal use or someone else's use of mobility devices, over 70% said the question was not applicable. Among those who did respond, nearly 9% cited partial or limited mobility as the primary reason for device use, while over 10% used them for short-distance travel to appointments or social interactions. Some use devices as either a primary (4%) or secondary (6%) mode of transport, and over 9% reported recreational use.

When asked about how safe they felt while personally using PMDs, nearly 63% said the question was not applicable, which is indicative of lower uptake of PMD use amongst older cohorts. Most survey respondents did not use PMDs; however, a handful of survey respondents did imply that they currently used or had used PMDs previously. Among device users, more than 10% felt very unsafe, with additional respondents indicating feelings of being unsafe (2%) or somewhat unsafe (5.5%). A smaller percentage reported feeling somewhat safe (9%), safe (6%), or very safe (5%).

Safety when encountering PMDs as a pedestrian or community member was a concern for many. Just under 35% felt very unsafe when PMDs passed nearby, 26% felt unsafe, and about 21% felt somewhat unsafe. Only 12% felt somewhat safe, with a smaller proportion feeling safe (7%) or very safe (2%).

Respondents who use mobility aids (e.g., scooters, wheelchairs, walkers) reported similar concerns when encountering PMDs. While 69% indicated this did not apply to them, among those who did respond, over 8% felt very unsafe, over 5% felt unsafe, and about 5% felt

somewhat unsafe. A roughly equal proportion felt somewhat safe or safe (5–6%), with just over 1% feeling very safe.

When asked about general safety in moving around their communities, whether walking, biking, taking the bus, or using other mobility supports, over 30% said they felt somewhat safe, and about 21% felt safe. More than 8% felt very safe. However, over 18% reported feeling somewhat unsafe, with under 12% feeling unsafe and over 10% feeling very unsafe.

E-mobility safety issues and concerns

An overwhelming 89% of respondents expressed concern about e-mobility safety issues such as collisions, speed, and sharing public spaces. Fewer than 8% said they were not concerned, while 3% were unsure.

One hundred and forty respondents who answered ‘yes’ or ‘not sure’ provided Council on the Ageing Queensland with more information about their concerns, which are highlight below according to primary themes.

Unsafe rider behaviour and lack of training

Many respondents raised concerns about riders being unlicensed, untrained, or inexperienced, particularly in understanding and following road rules. Numerous comments mentioned that riders—especially younger individuals—exhibit reckless or dangerous behaviour, including speeding, weaving through pedestrian traffic, tailgating vehicles, and using devices in unsuitable areas such as busy shopping precincts, bus stops, and shared footpaths. Several highlighted a perceived lack of maturity and accountability, with a strong belief that casual or hire riders are less cautious than those who own their PMDs.

Speeding and inappropriate use of existing infrastructure

Speeding was the most consistently reported issue, especially in shared spaces like footpaths, beachfronts, shopping areas, and parks. Respondents described PMDs as being used in locations ill-suited for high-speed travel, often resulting in close calls, near misses, or actual collisions. There was concern that existing infrastructure cannot accommodate the increasing volume and speed of PMDs, with many calling for lower speed limits or restrictions on PMD use in high-transit or vulnerable pedestrian areas.

Threats to pedestrian safety and accessibility

Respondents, particularly older adults and those using mobility aids, emphasised how PMD use compromises pedestrian safety, especially for children, families, dog walkers, and people with hearing or mobility impairments. Many expressed fear or anxiety about walking in public spaces due to the increased risk of collisions. Others reported changes in their behaviour, such as avoiding certain paths or community areas previously used with ease, citing a loss of safety and confidence in navigating these now-shared zones.

Lack of safety equipment and visibility

A large volume of feedback referenced non-compliance with helmet use, the absence of bells or audible alerts, and poor visibility of riders at night. These omissions were linked directly to increased danger for pedestrians, particularly those who cannot move out of the way quickly.

Respondents noted that many riders give no warning when overtaking, making it difficult to anticipate their movements or stay safe in confined areas.

Gaps in legal and policy frameworks, and infrastructure

There were numerous calls for stronger regulation, enforcement, and education, with many suggesting that PMDs should be registered and insured, much like cars or motorbikes. Respondents highlighted confusion or ignorance around right of way rules, a perceived lack of public education on PMD usage, and limited legal mechanisms for accountability when injuries occur. Some pointed to an informal ‘hierarchy’ on footpaths, where PMDs take precedence over pedestrians, leading to a sense of powerlessness and inequity.

Psychological impact and fear of harm

Emotional responses included descriptors such as "scary", "unsafe", "afraid", and "anxious". A notable number of people described how fear of PMDs had altered their perception of public space, contributing to reduced enjoyment, stress, and a sense of social exclusion—particularly among older individuals. There was also concern about lifelong impacts from injuries, both physical and psychological, should a collision occur.

Disregard for others and lack of social etiquette

A repeated theme was a lack of common sense, awareness, and respect by PMD users. This included assumptions made about right of way, use of smartphones while riding, and a solo or individualistic mentality that ignored the needs of others. Many saw this as a broader cultural issue of inconsideration and insufficient understanding of how to safely coexist in shared public environments.

Locations where PMDs are a safety concern

Out of 166 survey participants (163 answered this question), 68% reported that they have noticed specific areas in their community with safety concerns or a history of accidents involving PMDs. The remaining 32% of respondents had not observed any such problem areas. This suggests that a majority of community members are aware of at least one location where PMD usage has raised safety issues.

Respondents who answered ‘yes’ provided descriptions of the types of areas and situations they found problematic for PMD use. Common themes which emerged from their open-ended responses included:

Narrow infrastructure and crowded spaces

Many people mentioned that certain footpaths, bike lanes, or shared pathways are too narrow or congested. In these cramped spaces, it becomes difficult for PMD riders and pedestrians to safely coexist without conflicts or close calls.

Speeding and reckless behaviour

A frequent concern was the high speed of some PMD riders and reckless maneuvers in public areas. Respondents observed riders weaving through crowds or ignoring slow-down areas, which significantly increases the risk of collisions and injuries.

Unsafe shared zones (schools, parks, shopping precincts, esplanades, intersections)

Specific locations with heavy pedestrian traffic were repeatedly cited as trouble spots. These include school zones, park pathways, shopping precincts, waterfront esplanades, and busy intersections. In such areas, fast-moving PMDs mixing with pedestrians (including children and older people) create hazardous situations and near-misses.

Lack of helmets, protective gear, safety equipment, and training

Many respondents noted that PMD users often do not wear helmets or proper safety equipment. A perceived lack of rider training or education was also highlighted, along with reports of some riders showing little respect for traffic rules or other path users. This combination of inadequate safety gear and poor riding behaviour contributes to unsafe conditions.

High-traffic hotspots (transit hubs and densely populated areas)

Busy transit hubs (like bus and train stations), crowded shopping centres, and popular coastal and urban hotspots were mentioned as PMD accident-prone zones. These areas have a high density of both riders and pedestrians, which respondents say leads to frequent close calls or incidents involving PMDs.

Impact on more vulnerable pedestrians

Respondents expressed concern for people with disabilities, seniors, and others with mobility challenges. For example, a fast or silent e-scooter can startle a guide dog or a person with limited sight. Wheelchair users and those unsteady on their feet may feel unsafe when PMDs zip by too closely on sidewalks or shared paths.

Usage in non-designated spaces

Some PMD riders were observed using devices in areas not intended for them – such as pedestrian-only footpaths, roads without bike lanes, or even inside shopping arcades. This unregulated use of PMDs in inappropriate places leads to confusion and dangerous situations for both riders and the public.

Lack of signage, enforcement, and accountability

A common theme was frustration over insufficient signage and lack of law enforcement related to PMD use. Respondents felt that rules (like speed limits or no-ride zones) are not clearly posted or are widely ignored. Moreover, there is a perception of low accountability – if riders break the rules or cause accidents, they often face no consequences, which respondents believe perpetuates unsafe behaviour.

Perceived Benefits of PMDs

Out of 166 survey respondents, 150 answered about the benefits of PMDs. Participants could select multiple benefits, and the most commonly cited advantages were:

- *Low-cost transportation (73% of respondents):* Nearly three-quarters of respondents view PMDs as an affordable way to get around. The low operating cost (compared to cars or public transit fares) was seen as a major benefit.
- *Efficient and convenient (56%):* Over half of the respondents cited efficiency or convenience as a benefit, especially in situations where other transport options are

unavailable or impractical. PMDs can fill the gap for short trips or the last few kilometres from a transit stop to destination.

- *Fun and enjoyment (45%):* Many respondents (almost half) find PMDs to be enjoyable and fun to use. The experience of riding can be recreational, adding an element of enjoyment to commutes or outings.
- *Environmentally friendly (38%):* Over a third appreciate that PMDs are environmentally-friendly, producing zero emissions at the point of use. This environmental benefit makes PMDs an attractive alternative to cars for short trips, aligning with sustainable transport goals.
- *Support social connections (27%):* More than a quarter of respondents believe PMDs help facilitate social connections. For example, riding with friends or using PMDs to easily visit family and community events can enhance social life.
- *Fitness and exercise (16%):* A smaller segment (16%) see a benefit in the light exercise or outdoor time that PMDs can provide. While not as strenuous as cycling or walking, standing on and balancing a PMD, or using an e-scooter that requires some kicking off, can contribute to an active lifestyle.

In addition to benefits above, open-ended comments revealed polarized views on use of PMDs in the community. For example, in relation to *mobility and independence*, some respondents praised PMDs for providing mobility and independence, especially for those who do not drive or have limited access to other transport. They noted that PMDs can empower individuals by offering a flexible way to travel short distances on their own schedule.

Conversely, in relation to *safety concerns in the use of PMDs*, many expressed scepticism about the necessity of PMDs, and multiple safety issues. These respondents argued that PMDs can travel at dangerous speeds and sometimes seem unnecessary (e.g. when other transport options or walking might suffice). They worry that the risks (accidents, injuries) might outweigh the benefits, calling for more cautious use or better regulation.

Overall, the survey findings illustrate a community grappling with both the challenges and benefits of electric PMDs. While there is clear recognition of the convenience and enjoyment these devices offer, there are equally strong concerns about safety, infrastructure fit, and responsible use that need to be addressed.

Respondents continued to strongly emphasised the need for structured regulation, better infrastructure, public education, and age-based or competency-based restrictions to ensure PMDs are integrated safely and respectfully into shared spaces. While some support their use for mobility and convenience, the prevailing concern is that current policies and behaviours fall short of ensuring community-wide safety.

Age factors in use of PMDs

Among the 165 respondents who answered the question 'Can people of any age use an electric PMD', over 57% indicated that not all age groups should be allowed to use electric PMDs. Only 19% of participants felt that people of any age could safely use an e-device, while 23% were unsure and selected 'maybe.' These results highlight a higher level of community concern about

age-related risks and capabilities when it comes to the use of PMDs, suggesting support for more ability-based regulations.

Of those who responded 'No' to the previous question, 99 respondents provided explanations revealing complex concerns. A dominant theme was the perception that both younger and older users face specific safety challenges. Many respondents described young riders as lacking in maturity, unpredictable, and prone to risky or reckless behaviours such as speeding, using devices while distracted (e.g., texting on smartphone), or riding inappropriately (e.g., doubling other people, or riding while leading dogs). Older adults were seen as more vulnerable due to cognitive decline, perceived slower reflexes, reduced balance, and a higher risk of injury or falls if involved in an incident. Several respondents linked safe PMD operation to brain development and risk perception, arguing that riders under 16 or 18 years of age may not be cognitively prepared (or cortex fully developed) to handle higher-speed devices.

Another major concern was the lack of training or understanding among PMD users. Many comments referred to untrained, unlicensed riders who are unfamiliar with road rules and safety obligations, particularly regarding helmet use and shared path etiquette. Several called for the introduction of mandatory safety training, licensing, and formal education programs, especially targeting younger riders and first-time users.

A substantial number of respondents also supported the introduction of legally enforceable age limits, typically ranging from 13 to 18 years. These would be paired with requirements such as carrying identification, completing a rider's test, and registering the device (mirroring rules currently applied to cars and motorbikes). Some advocated for broader systems of accountability, suggesting that licensing and registration would improve safety by deterring risky behaviour and enabling better enforcement.

Finally, **a group of respondents emphasised that while age is a factor, it should not be the only consideration. Instead, they advocated for a focus on individual capacity, responsibility, and awareness.** They proposed assessments based on cognitive fitness, dexterity, and maturity to determine whether someone can safely operate a PMD, noting that these qualities are not tied exclusively to age.

Clarity of rules and signage

When asked whether the current rules and signage surrounding PMD use are clear enough, over 77% of the 165 respondents said 'No.' Only 8% believed the existing guidelines were clear, and a further 14% were unsure. These results suggest a widespread perception that signage and regulatory messaging are inadequate, confusing, or inconsistently enforced in many public areas. Respondents' concerns likely reflect broader frustrations with ambiguity around where and how PMDs should be used, as well as who holds right of way in shared spaces.

Community understanding of safe PMD use

Similarly, in response to whether local community members understand how to ride e-mobility devices safely, more than 77% of the 164 respondents said 'No.' Fewer than 5% believed that the public had sufficient understanding of safe PMD use, and just under 18% indicated 'Maybe.' This finding reinforces earlier themes of concern about education and awareness. It also suggests that, beyond improving infrastructure or enforcement, there is a significant need for widespread public education on safe and responsible PMD operation, particularly in shared

spaces where pedestrians, people who use mobility aids, cyclists, and riders must interact safely.

Locations (specific and general) where PMDs are seen in use

The PMDs such as e-scooters and e-bikes are widely reported across a variety of public and shared environments. These locations tend to fall into several broad categories based on patterns of usage, design of infrastructure, and considerations around community risk:

Shared transport and traffic zones

- Suburban streets, public roads, intersections, and roundabouts are frequent sites where PMDs are used, often weaving through traffic or overshooting crossings.
- Roads near shopping centres or malls and roads near schools are especially concerning due to high pedestrian density and vehicle activity.
- PMDs are also observed moving through traffic lights, across roads, and weaving between cars, posing risks to both riders and drivers.

Pedestrian (and bike) footpaths and pathways

- PMDs are commonly seen on general footpaths, including those near storefronts, shopping precincts, and built-up urban areas.
- Narrow footpaths, pavements, and blind spots (for both drivers and pedestrians) are highlighted as problematic due to space constraints and limited visibility.
- Devices are frequently observed on paths near elderly residents, families, or wheelchair and mobility aid users, raising concerns about safe coexistence.

Community and recreational spaces

- Parklands, parks, and walking tracks, especially those with long stretches of flat or downhill paths, are popular PMD routes.
- PMDs are often seen near entry/exit points to parks, near lakes, and occupying shared pedestrian-bike paths, particularly in high-use areas.
- Outdoor spaces such as gated communities, built-up precincts, and recreational facilities are also named as frequent PMD sites.

School communities

- PMDs are regularly observed near schools, schooling precincts, crossings near schools, and routes used by students.
- Concerns are especially high around fast downhill areas near school grounds and crowded pick-up/drop-off zones.

Commercial and shopping precincts

- PMDs are commonly reported in front of shops, in shopping centres, at store entry/exit points, and in fast food precincts.

- Many users ride across paths and transit areas in commercial zones, which raises challenges for pedestrian safety due to crowding and unpredictable movement patterns.

Beachfront and coastal areas

- Beachfronts, esplanades, coastal footpaths, and paths near oceans are popular PMD areas, especially for recreational use.
- PMDs are often seen on paths along the beachfront, including shared paths used by walkers, cyclists, and PMD riders.

This distribution indicates that PMDs are not confined to specific routes or formal infrastructure but are instead used across a wide spectrum of public, pedestrian, and vehicular spaces—many of which were not designed for mixed-mode transport. The overlap between PMD use and vulnerable pedestrian activity (e.g., near schools, parks, and aged care zones) is a key factor in community concerns about safety.

Specific sites mentioned where issues occurred or concerns about potential or actual accidents occurring are listed in Table 3. See Appendix A. for maps of approximate locations.

Table 3. Specific locations where community members have identified actual or potential problematic sites for use or interaction with electric Personal Mobility Devices (PMDs)

Location	Postcode	Description
Beenleigh	4207	All the streets; bus station crossing main streets in Beenleigh
Kingscliff (Tweed region)	2487	Roundabouts
Coolangatta	4225	Busy alternate roads and heading up larger hills heading towards Coolangatta and Tweed Heads; shared pathways
Coolangatta Marine Parade, Coolangatta	4225	
Appel St, Coolangatta	4225	Kirra Sports grounds and club
Tweed Heads (suburb)	2485	
Ducat St, Coolangatta	4225	
Stapylton Street and Miles Street intersection, Coolangatta	4225	Along the streets and heading down the hills towards intersections.
Southern Gold Coast	e.g., 4215	
Gold Coast	e.g., 4217	Ocean walkways; shared pedestrian and bike pathways
Palm Beach, Gold Coast	4221	
Pacific Pines Town Centre precinct, corner of Pacific Pines Boulevard and Pitcairn Way, Pacific Pines, Gold Coast	4211	Shopping Centre precinct; Palm Beach Currumbin (PBC) State High School community and surrounds; roundabouts; roundabout near shopping centre precinct and underground carpark at Coles.
Multiple locations		McDonalds – especially near entry/exit points

Location	Postcode	Description
Cairns	e.g., 4870	
Brisbane City/CBD	4000	Pedestrian paths, walkways, and walkways over bridges; traffic lights, and intersections such as Edward Street.
Hooker Boulevard, Gold Coast	4218	
Surfers Paradise	4217	
Hope Island	4212	All streets, Hope Island Resort.
Bilinga Beach, Gold Coast	4225	Walkway and surrounding roads
Townsville	4810	The Strand and surrounding walkways
Lehman's Road and Mount Warren Boulevard, Beenleigh	4207	
Forest Lake	4078	Pathways around the lakes area
Currumbin, Gold Coast	4223	Beach front, Walking paths and bike tracks between Coolangatta and Currumbin
Gold Coast Highway	e.g., 4217	Paths running alongside the highway, and near school communities
Anzac Avenue, Wattle Road, Rothwell	4022	Corner of Anzac Avenue and Wattle Road.
Kippa Ring, Redcliffe Redcliffe Peninsula (general)	4021	Shared walking and bike paths; in and around Peninsula Shopping Centre
Elanora	4221	Palm Beach Currumbin State High School, Elanora High School communities and surrounding streets
Burleigh Waters	4220	
Galleon Way, Elanora and Currumbin Waters	4221	
Coomera and Coomera Waters	4209	General streets, built-up areas
Bloom Estate, Asterella Court, Coomera	4209	
Pimpama	4209	Shopping precincts, pathways
188 Gainsborough Drive, Bimbimba Park, Pimpama	4209	
Dixon Drive, Yawalpah Road, Pimpama	4209	Intersection and roundabout at Dixon Drive crossing Yawalpah Road
Ormeau	4208	Shops, stations, pathways
Philben Drive, Ormeau	4209	

Location	Postcode	Description
Eggersdorf Road, Ormeau	4208	Near McDonalds and Coles. Eggersdorf Road from the Seven Eleven store all the way up to the roundabout at Amara Estate (e.g., 248 Eggersdorf Road).
Goldmine Road, Ormeau	4208	Near local high school
Pincilly Corner, Shannon Brook Avenue, Yantara Close, Lilyvale Crescent, Ormeau	4208	
Sunshine Coast, Gold Coast, Logan	e.g., 4560 4217 4114	Everywhere
135 Bundall Road, Surfers Paradise	4217	Home of the Arts (HOTA) and surrounding areas
Isle of Capri, Surfers Paradise	4217	Everywhere
Martha Street, Camp Hill	4152	
Sandgate	4017	Near the McDonalds, railway station, shopping precinct
Riverway, Ross River frontage, Townsville	4810	All around this area
Enoggera Terrace, Red Hill	4059	
Coronation Drive, leading up to Toowong	4066	Bikeways
Sylvan Road, Toowong	4066	
Bideford Street, Torquay	4655	
Broadwater, Gold Coast	4216	Cycling/walking paths near the Aqua Centre.
Gill St, Charters Towers	4820	
Kewarra Beach	4879	Waterfront and nearby footpaths
Weedons Road, Nerang High School, Nerang	4211	Footpaths nearby and behind Nerang High School; Swift Park
Wynnum Road, Wynnum North Road, Preston Road, Manly Harbour, Manly	4179	Along these roads and pathways and the continued route up to Manly Harbour
Thompson St, Victoria Point	4165	
Redland Bay	4165	Esplanade walkway
Highfields, Toowoomba region	4352	Highfields Shopping Centre and township
1151 Creek Rd, Carindale Westfield, Carindale	4152	Carindale Westfield Shopping Centre – bus station

Location	Postcode	Description
Raby Bay, Redlands region The Sands Wellington Street	4163	Raby Bay Park area from the Sands and also from the Cleveland train station towards the other side of the road, and from Raby Bay Park area towards Wellington Street
Cleveland	4163	Cleveland train station and surrounding area
Breakwater Road, Mackay Harbour, Mackay	4740	
Broadbeach	4218	
Chermside	e.g., 4032	Chermside Shopping Centre through to Virginia Station
Hervey Bay	4655	Along the esplanade
Arbor Street, Ferny Grove	4055	Rail crossings at Arbor Street
Ernest Street, South Brisbane	4101	Ernest Street at St Andrew's Anglican Church
54 Minjungbal Dr, Tweed Heads South	2486	Tweed City Shopping Centre
Oxenford, Gold Coast region	4210	Damian Leeding Memorial Park and Lake
Yatala South, Ormeau	e.g., 4207	Highways: M1 between Yatala South exit and Ormeau exit of the M1
Central West Shires	e.g., 4730	
Stanley Street, East Brisbane	4169	Stanley Street from Main Street towards East Brisbane and beyond

Recommendations

Electric PMDs as age-inclusive, accessible & appropriately regulated for an age-friendly Queensland

Community suggestions to improve safety in use of and interaction with PMDs

Community members offered detailed and practical suggestions aimed at improving the safety, regulation, and responsible use of electric Personal Mobility Devices (PMDs). These insights are consolidated into ten overarching themes, each reflecting widespread community support and a shared emphasis on safety, accountability, and respect for shared public spaces.

1. Infrastructure design and management of shared spaces

Respondents strongly advocated for significant infrastructure changes. Widening of footpaths and the creation of dedicated lanes or paths for PMDs, pedestrians, and cyclists were seen as essential to reduce conflict and enhance visibility. There was repeated emphasis on eliminating shared paths where PMD speed or density poses risk, with exceptions made for essential mobility aids. Existing infrastructure—particularly narrow footpaths and poorly maintained walkways—was considered inadequate for current volumes of PMD use, and residents called on councils to invest in upgrades, especially near schools, transit hubs, shopping precincts, and aged care zones.

2. Enhanced signage and prioritisation of pedestrian safety

Community members requested improved signage to clarify where PMDs can be used, what speeds are permitted, and who has right of way. Suggestions included the use of visual cues, colour-coded lanes, and humorous or bold messaging (e.g., “Don’t be a D*head”) to reinforce safe and courteous conduct. A consistent theme was the need for signage that clearly prioritises pedestrian safety in shared areas and encourages PMD users to slow down or dismount in high-density zones.

3. Licensing, registration, and insurance

There was overwhelming support for introducing mandatory licensing for PMD users and registration of devices, akin to existing systems for cars or motorbikes. This would allow enforcement of age and skill requirements and provide a mechanism for reporting unsafe or dangerous riders. Many respondents also recommended compulsory third-party insurance for both private and hire-based PMDs, with clear responsibility placed on device hire companies to track, regulate, and support responsible use.

4. Speed regulation and enforcement

One of the most frequently cited concerns was speeding in shared and vulnerable spaces. Respondents proposed a range of speed limits, commonly between 10 and 20 km/h, with some suggesting caps as low as 5 km/h near pedestrians. There were calls for speed detection technology, such as cameras or GPS-based limits, as well as increased police patrols and fines for breaches. Multiple respondents noted that PMDs travelling at 25–40 km/h, particularly without alert systems or at night, were especially hazardous.

5. Enforcement and penalties

A strong theme emerged around the need for consistent enforcement of existing and proposed laws. Suggestions included on-the-spot fines, confiscation of devices, banning repeat offenders, and even device destruction following multiple serious violations. Several respondents argued that PMD laws should carry the same weight and consequence as vehicle

laws, especially when reckless riding poses injury risks. There were calls for greater council accountability and police visibility in high-use areas.

6. Training, public education, and community awareness

Education was identified as a crucial preventive strategy. Respondents proposed:

- Compulsory safety training courses, particularly for young users and first-time riders.
- In-school programs on road rules, respectful riding, and pedestrian awareness.
- Public awareness campaigns, delivered through pamphlets, signage, or digital media, explaining PMD etiquette, right-of-way rules, and responsibilities in shared spaces.

Several respondents suggested rider handbooks, online tests, and parental engagement to ensure young people are adequately prepared to use PMDs safely.

7. Warning and safety equipment

Numerous comments focused on the absence of audible warning systems. Respondents called for mandatory bells, horns, or alerts, as well as compulsory use of lights at night, high-visibility vests, and rear-view mirrors. Devices that operate silently were viewed as particularly dangerous, often surprising pedestrians who are unable to respond in time. Helmet use was also emphasised, with many suggesting legal mandates and fines for non-compliance.

8. Age restrictions and competency requirements

A majority of respondents supported age restrictions, typically suggesting a minimum age of 16 or 18 years to operate a PMD independently. Additional recommendations included:

- Supervision requirements for users under 18.
- Medical clearance for older riders, particularly those with cognitive or mobility impairments.
- Screening at point of purchase, especially for high-powered devices.
- Age-based power limits on PMDs, such as capping younger riders to devices under 1100 watts.

These measures were framed as critical to ensure users have the maturity, judgment, and physical coordination to ride safely.

9. Accountability of riders and hire companies

Respondents called for greater accountability from PMD hire companies, including enforcement of use rules, better rider identification, and cooperation with police in tracking misuse. Riders, whether private or hired, were expected to demonstrate respect for pedestrians, understand road rules, and adhere to laws governing space sharing and rider conduct. Comments also highlighted the greater risks posed by hire scooters, which are often used casually and with less training.

10. Cost and feasibility

While safety was the primary concern, some respondents acknowledged the cost and feasibility challenges of implementing all recommendations. Suggestions included prioritising high-risk

areas for immediate intervention and phasing in new infrastructure and training programs. A small number of participants urged balance between innovation and safety, cautioning against over-regulation that might limit the accessibility and benefits of PMDs, particularly for those using them as a low-cost alternative to transport.

11. Equity considerations

Importantly, many recommendations included explicit attention to the needs of vulnerable community members:

- Older adults, children, and people with disabilities were consistently named as being at greater risk of injury or exclusion from shared spaces due to unsafe PMD use.
- Participants emphasised the need to design policies that centre pedestrian safety, maintain accessible walkways, and ensure that PMDs do not displace or endanger more vulnerable users.

Communities told us overall that the continued integration of PMDs into local transport infrastructure must be accompanied by a coordinated approach that includes infrastructure reform, legislation, enforcement, public education, and equity-driven safeguards. There is broad support for practical, enforceable changes that balance innovation with safety and uphold the rights of all residents to move confidently and securely in shared public spaces.

Recommendations

From the evidence and collective insights from communities, we present recommendations for e-mobility through systemic policy and advocacy lenses:

a. Regulatory reform and legal integration

- Noting existing road safety rules and regulations in place, in addition to the work delivered by local councils in Queensland, we further recommend the development of a statewide standard for PMD operation.
- Mandate licensing and registration of PMDs that have capacity for higher speeds to align with other motorised transport systems (e.g., cars, motorbikes), and facilitate increased visible enforcement.
- In the context of shared public spaces, pathways, etc. enforce right-of-way, spatial restrictions, and penalties for non-compliance.

b. Infrastructure and spatial planning

- Fund and prioritise infrastructure upgrades to create physically separated lanes for pedestrians, cyclists, and PMD users.
- Restrict PMD access to shared pedestrian paths in dense or vulnerable areas unless clear signage and safety measures are in place.
- Ensure design principles are inclusive of older people and those with mobility, sensory, or cognitive impairments.

c. Education, training and public awareness

- Introduce mandatory training programs, especially for youth and first-time users, covering road rules, etiquette, and safety practices.
- Fund public education campaigns that raise awareness of rider responsibilities, device safety, and shared space etiquette.
- Integrate mobility safety education into school curricula and community outreach programs.
- Content of education/training/campaigns should include information on minimum age requirements, device power limitations, and mandatory safety equipment.

d. Enforcement and risk mitigation

- Establish clear enforcement mechanisms for breaches of PMD use laws, including fines, device confiscation, and penalties for repeat offences.
- Impose speed restrictions in high-traffic and vulnerable zones (e.g. near schools, aged care, shopping areas), enforced via technology or patrols.
- Ensure that PMD hire companies share responsibility for device misuse, including the tracking and reporting of dangerous behaviour.

e. Insurance and accountability

- Mandate third-party liability insurance for all PMDs, particularly those used in public spaces, to support compensation and accountability in case of injury or damage.
- Implement traceability systems for devices, including unique identification or registration plates to aid in enforcement.

f. Data collection and planning integration

- Fund local governments to collect usage and incident data (in line with e.g., motor vehicles), enabling evidence-based infrastructure and policy planning.
- Integrate PMD considerations into broader transport and urban development strategies, including future-proofing design and mobility equity.

The integration of PMDs into Queensland's existing transport systems and transport related infrastructure has commenced and the rapid uptake of PMDs has been inevitable. Therefore, protective mechanisms and appropriate legislations and enforcement must be made more visible through education and awareness raising, and this must be expedited.

The community has voiced clearly the need for safety, equity, and accountability, and these qualities must guide the next wave of reforms. This means a coordinated investment across legislation, infrastructure, education, and enforcement to ensure that PMDs are not only accessible, but safe and compatible with the rights and needs of all residents and commuters who use roads, pathways, thoroughfares, walkways, footpaths, and shared public spaces.

The use of electric PMDs alongside bicycles, mobility aides, etc. is part of a growing active transport movement which we believe strengthens age-friendly communities through enabling

more options for affordable transport and keeping people of all ages connected to services and activities in their communities.

Appendices

Appendix A. Map of approximate locations where PMDs have been noted as safety concerns by community members

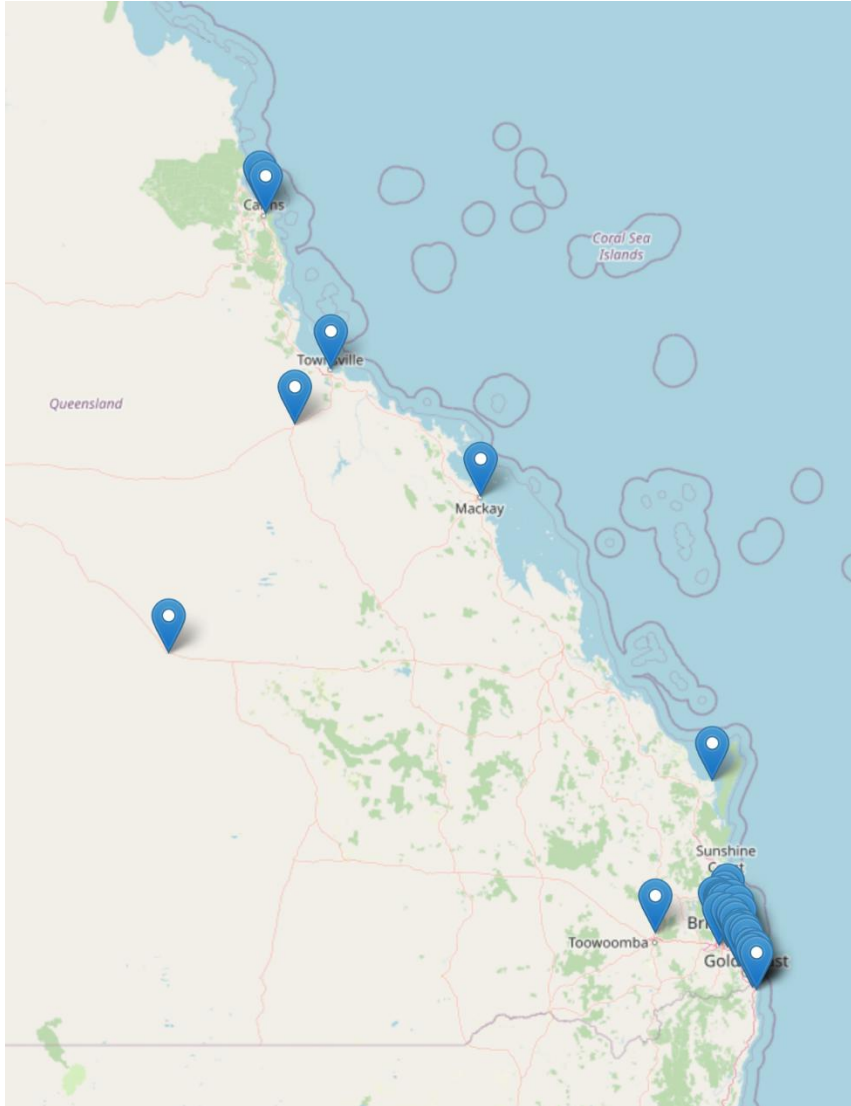


Figure 1. Queensland map with approximate locations of where PMDs incidences/accidents/safety concerns have been observed by community members.

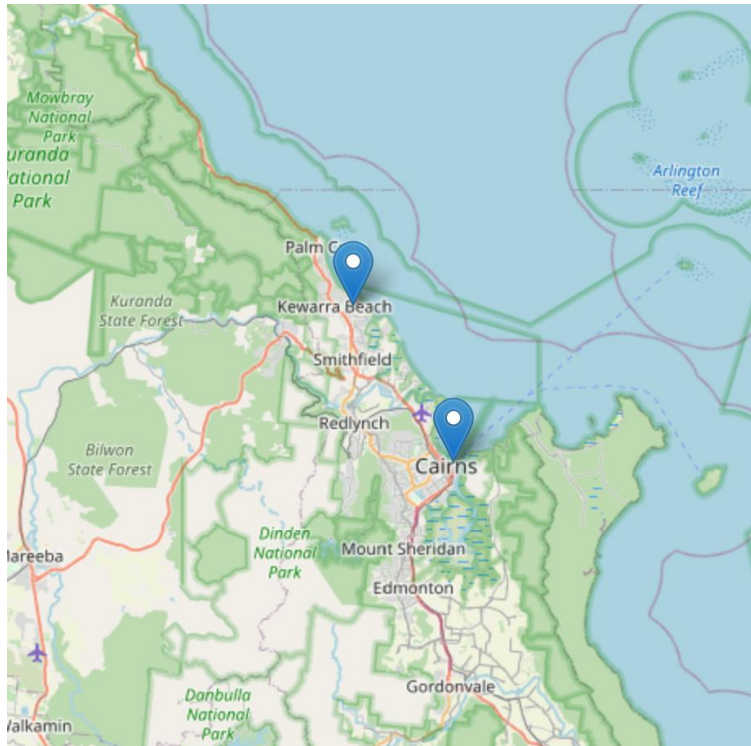


Figure 2. Map of Cairns region.

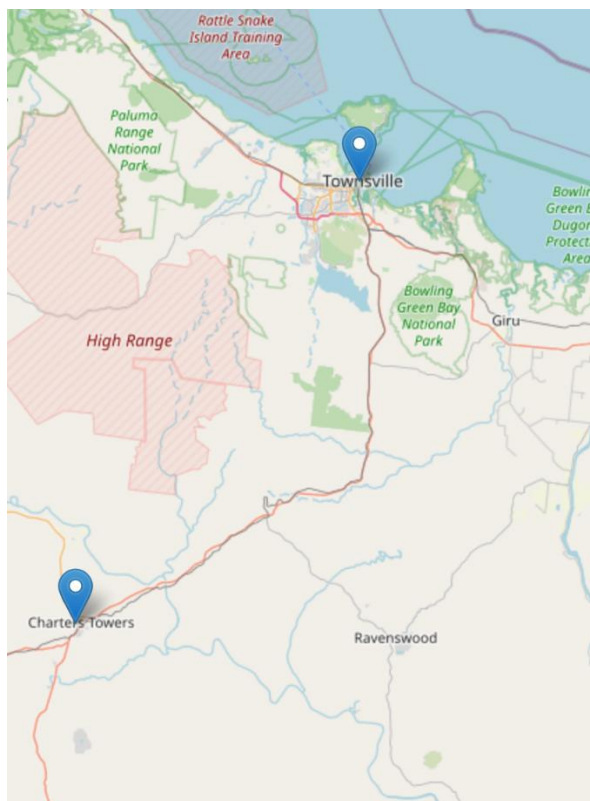


Figure 3. Map of Townsville and Charters Towers regions.

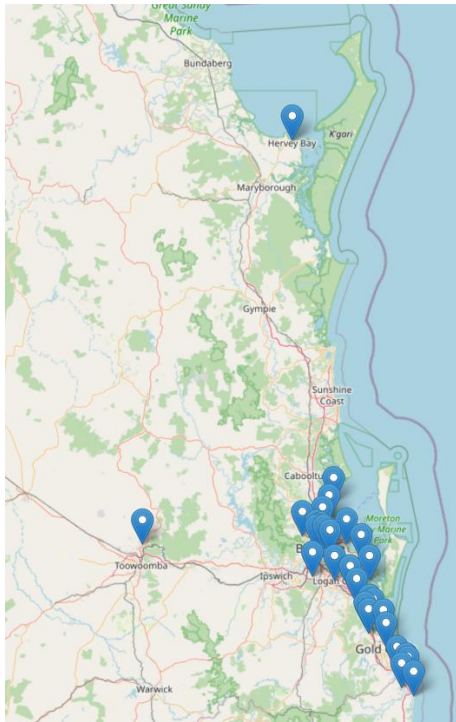


Figure 4. Map of Southeast Queensland region – a snapshot of Wide Bay Burnett, Darling Downs, Moreton Bay, greater Brisbane, and Gold Coast regions.

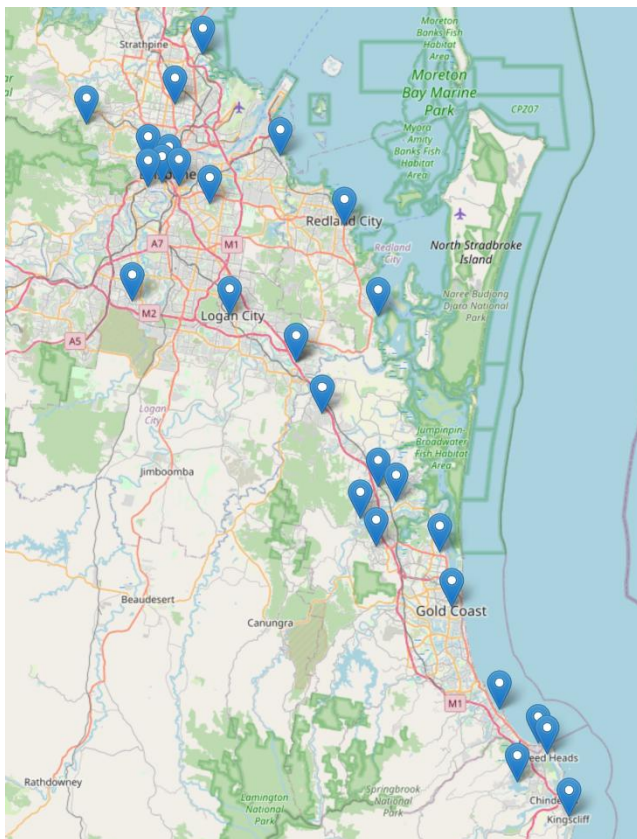


Figure 5. Map of Gold Coast, Redland City, Logan and greater Brisbane regions.

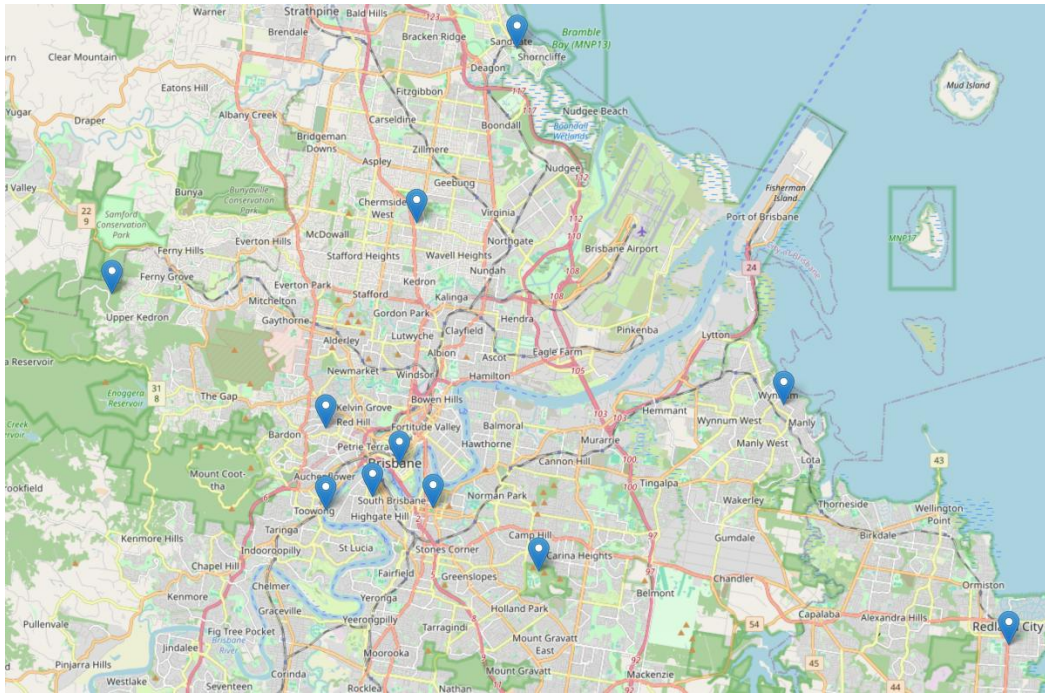


Figure 6. Map of greater Brisbane including coastal communities and Redlands.

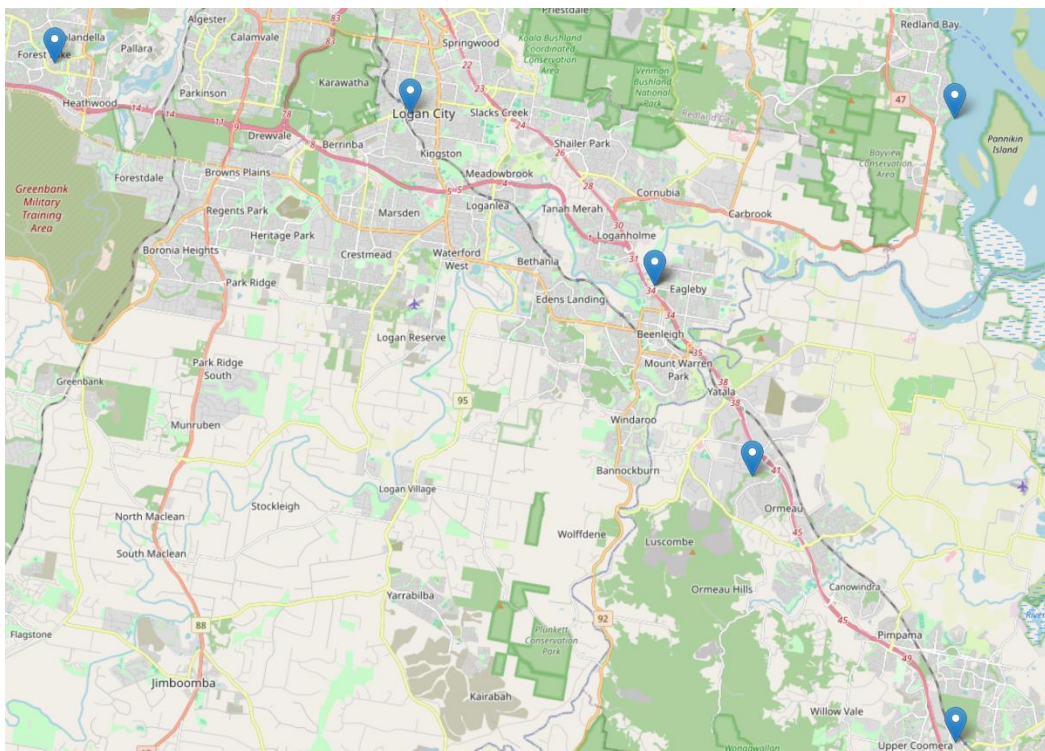


Figure 7. Map of Gold Coast, Forest Lake, and Logan areas.

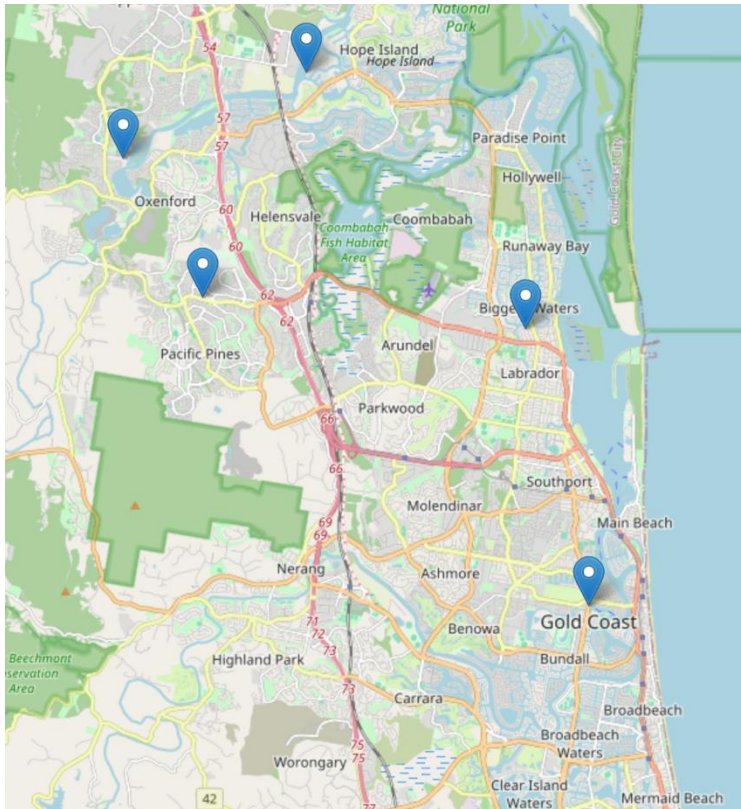


Figure 8. Map of areas within the Gold Coast region.

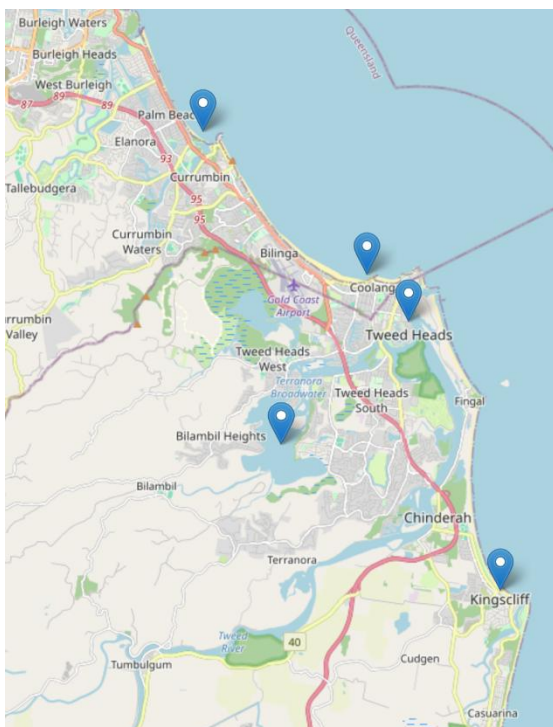


Figure 9. Map of Queensland and New South Wales border and coastal communities.