## Inquiry into e-mobility safety and use in Queensland

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I appreciate the opportunity to contribute to the Queensland Parliamentary Inquiry into emobility safety and use. In my submission, I address three key areas: the potential benefits of e-mobility devices, the safety challenges associated with their use, and the effectiveness of current enforcement approaches.

I have also included recommendations for a balanced and practical pathway forward, and these recommendations are based on established risk management principles.

# <u>1. Benefits of e-mobility (including both Personal Mobility Devices (PMDs), such as e-scooters and e-skateboards, as well as e-bikes) for Queensland.</u>

Personal mobility devices (PMDs) provide only limited benefits to communities.

Local, state, and federal governments should prioritise creating safe, accessible environments that promote walking and cycling, as these modes deliver far greater public health and social benefits.

Unsafe use of PMDs can restrict people's safe access to footpaths, public parks, and green spaces, often resulting in social isolation and a significant decline in quality of life.

Additionally, PMDs only offer environmental advantages if they genuinely replace car trips.

The economic benefits of PMDs are also limited unless the costs of building and maintaining necessary infrastructure are covered by user fees and levies.

## Micromobility-related injuries increase economic costs

High accident rates impose substantial public health expenses, including emergency response, hospitalisation, and longer term rehabilitation.

In Queensland, micromobility-related injuries accounted for 3,267 hospitalisations between 2020 and 2023, with e-scooters representing 57% of cases. These incidents strain emergency response and healthcare resources, with average hospitalisation costs exceeding \$5,000 per patient. (5) (6)

## PMDs reducing physical activity

Evidence suggests many e-scooter trips now replace walking or cycling journeys, especially for short distances of about 1.5 km. (1)

This shift away from walking and bike riding reduces the amount of active, healthy exercise individuals get in their daily routines.

Health Aspect	Walking	Bike Riding	E-Scooter
Physical Fitness	Improves	Improves	Minimal impact
Calorie Burn	Higher	Higher (similar or greater than walking)	Lower (about 2/3 of walking)
Cardiovascular Benefit	Significant	Significant	Minimal
Muscle Engagement	Full-body, weight- bearing	Lower body dominant, some upper body	Limited (mainly core/balance)
Bone Health	Improves	Improves	No benefit
Impact on Chronic Disease	Reduces risk of type 2 diabetes, cardiovascular disease, certain cancers	Reduces risk (similar to walking)	No reduction; may increase risk if replacing walking or cycling
Contribution to Healthy Weight	Supports healthy weight management	Supports healthy weight management	Little impact; may promote sedentary lifestyle
Environmental Impact	Zero emissions, no battery	Zero emissions, minimal waste	Zero emissions in use, but high manufacturing and disposal impact

#### Increased use of PMDs is likely to increase obesity rates

As of 2024, less than a third of Queensland adults are at a healthy weight, and Queensland has the second highest adult obesity rate in Australia.

The overall financial impact of obesity on the QLD economy is estimated at \$11.2 billion annually, which includes direct health care costs as well as lost productivity, absenteeism and premature death. (3)

Young adults aged 18–34 make up 62% of e-scooter users, while this group experienced a 68% increase in obesity rates between 2004 and 2024. (2) (4)

If teenagers and young adults are using PMDs for short trips that could otherwise be walked or cycled, then it promotes a more sedentary lifestyle and will likely contribute to higher rates of obesity and associated chronic disease, with higher health care costs expected in future years.

Overall, the focus should be on providing safe spaces that encourage healthier walking and cycling for exercise and mobility, rather than prioritising facilities for PMDs.

#### Use of PMDs impacting the environment

PMDs only deliver environmental benefits when they replace car trips.

While PMDs such as e-scooters are clean at the point of use, their manufacturing, transportation, and short lifespan can result in a higher overall environmental impact compared to walking, cycling, or buses with high ridership.

Improper disposal of e-scooters and e-bikes, particularly their batteries, can lead to serious soil, water, and air pollution, resource depletion, and health risks. Proper recycling and disposal are essential to minimising these environmental impacts and ensuring that e-scooters and e-bikes remain a sustainable transportation option. (7)

Mode	Emissions in Use	Manufacturing Impact	Disposal/End-of-Life Issues	Net Environmental Impact
Walking	Zero	Negligible	None (shoes, minimal waste)	Lowest (best)
Bicycle	Zero	Low	Minimal (mostly metal, easily recycled, long lifespan)	Very low
E- Scooter	Zero (direct, grid- dependent)	High (batteries, electronics)	High-Batteries: risk of soil/water/air pollution, fire hazard; complex recycling; short lifespan (esp. shared fleets)	Higher than walking/bike; lower than cars

#### Infrastructure and maintenance costs

Standard risk management principles emphasise a hierarchical approach to risk control. This involves 1/ elimination, 2/ substitution, 3/ isolation, 4/ engineering controls, 5/ administrative controls, and 6/ personal protective equipment. (23)

If PMDs are not going to be eliminated or substituted, then isolation becomes necessary, and p edestrians must be physically isolated or separated from fast-moving motorised PMDs such as e-scooters and e-bikes.

Motorised PMDs must be restricted to dedicated paths, bike lanes or roadways, and the use of shared paths minimised and eventually eliminated.

However, in many towns, such infrastructure would require new construction or the widening of existing pathways and roads, both of which have significant upfront and ongoing maintenance costs.

#### **Dedicated Path and Bike Lane Construction**

- Concrete footpath costs: \$300 \$600+ per metre depending on terrain and drainage requirements. (8)
- Road widening/construction: \$900,000–\$1.4 million per kilometre for suburban roads meeting council standards. (9)

## **Additional Considerations**

- Disruption costs during construction (traffic rerouting, business impacts)
- Ongoing maintenance for safe surfaces: ~\$15,000/km annually for crack sealing and resurfacing

#### Consuming green space for dedicated or shared paths

Constructing more dedicated paths for PMDs, or more bike paths that can be used by PMDs may increase the consumption of green space if these projects require clearing new land or converting existing natural areas.

Instead, a transition to PMDs should focus on reducing the land currently being used for car parking and road space, and the total amount of green space remains the same or increases.

Therefore, existing roadways and parking areas should be progressively reallocated to create pedestrian footpaths, dedicated paths for PMDs, and bike lanes without consuming further green space.

Scenario	Green Space Consumed?	Notes
Paths built on existing roads/verges	Minimal	Uses current infrastructure, little to no new green space taken <u>4</u>
Paths built through undeveloped land	Yes	May require clearing parkland or natural areas
Integrated with greenways/parks	Can increase or enhance	Enhances access, biodiversity, and community use; may add new green space <u>15</u>
Re-purposing car space for paths/parks	May increase	Converts hardscape to green space, net positive for environment and community

## Cost-Benefit Analysis

The economic viability of PMDs in Queensland requires an analysis of costs, infrastructure demands, public safety and long term health outcomes.

It is estimated PMDs contribute \$91 million annually to Queensland's economy through tourism and reduced congestion.

However, this amount is relatively minor when compared to the state's total GDP of \$510.7 billion and should be considered in the context of the following factors:

- 1. **Infrastructure development**: A 10 km shared path network would cost \$5.5–\$14 million upfront, requiring 6–15 years of economic benefits to offset capital costs alone. As well there are ongoing costs for maintaining safe surfaces: ~\$15,000/km annually for crack sealing and resurfacing.
- 2. **Healthcare burden**: At current hospitalisation rates from e-scooter accidents, annual medical costs could exceed \$16 million statewide. (10)

- 3. **Increased obesity:** A 10% increase in obesity rates resulting from widespread adoption of PMDs could:
- Add \$75–\$100 million each year for treatment of obesity-related illness.
- Add \$150–\$460 million annually to general healthcare costs.
- Cost the QLD economy over \$1 billion annually, factoring in direct health costs, lost productivity, absenteeism, and premature death. (12) (13)

#### **Recommended Pathway**

- 1. **Prioritise walking and cycling:** Local and state government authorities should **e**ncourage a culture of walking and cycling over use of PMDs in communities.
- 2. **Immediate regulatory changes**: Adopt the NSW government approach, and immediately ban privately owned e-scooters from public land, allowing only shared e-scooters hired through approved schemes in designated trial areas.
- 3. **Phased infrastructure roll-out**: Prioritise high-demand corridors using the Federal government's Active Transport Fund.
- 4. **Implement levies and fees**: Levies and permit fees should be implemented for escooter and e-bike operators to fund infrastructure costs for PMDs, mirroring Brisbane's \$1.9 million annual revenue from parking permits.
- 5. **Phase out shared paths:** Progressively phase out shared pathways to create footpaths for pedestrians only, with separate lanes for bikes and PMDs.
- 6. **Reallocate roadway and parking space:** Progressively reallocate roadway and parking space to create footpaths and separate lanes for bikes and PMDs without increased consumption of green space.

This approach balances safety improvements and environmental protection with fiscally responsible infrastructure development.

## 2. Safety issues associated with e-mobility use, including increasing crashes, injuries, fatalities, and community concerns

Between 2020 and 2023 in Queensland, micromobility-related injuries led to 3,267 hospitalisations, with e-scooters accounting for 57% of these cases. These incidents place significant pressure on emergency response and healthcare systems, while the average hospitalisation cost exceeds \$5,000 per patient. The majority of injuries involve fractures, head injuries, and serious trauma, and the trend is rising as e-scooter use grows. (14) (5)

Many hospitals report a sharp rise in e-scooter injuries, such as the Townsville University Hospital that saw a 240% increase in e-scooter injuries over recent years, and a 60% jump last year alone.

This is straining emergency departments and hospital resources, and could limit their capacity to effectively manage a future health crises such as a virus epidemic.

#### Minimum path widths

The "Supplement to Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling" released by the QLD Department of Transport and Main Roads provides the minimum standards for shared footpaths in Queensland, although the specific minimum depends on the user volume. (24)

- A 2.5 m wide path is considered the lowest acceptable standard, mainly for areas with lower usage or physical constraints.
- A 3.0 m wide path is preferred as it allows two people to walk side by side while a cyclist passes with adequate space and clearance.
- Wider paths (e.g., 4.0 m) may be needed in locations with higher volumes of users or where passing and meeting movements are frequent.

I am not aware of any formal studies on this issue, while my general observations indicate that the vast majority of shared paths in Queensland do not met the required minimum standard width of 2.5 metres. Additionally, very few paths are accompanied by clear signage indicating whether bicycles or PMDs are permitted to use the path. This lack of clarity and non-compliance with minimum standards would cause confusion and compromise the safety of all users.

Attached below is a photograph of a typical access footpath leading to a community centre and shopping complex in Cannonvale, Queensland. This facility serves as a hub for essential services, including doctor's clinics, pathology clinics, a pharmacy, banks, a supermarket, a bakery, and a variety of retail shops. The footpath is a vital link for residents accessing these community services and facilities.



The path is only 1.1 metres wide and does not meet the required minimum standard width of 2.5 metres for a shared path, and the path is barely sufficient for a single pedestrian using a two-wheeled shopping trolley as shown in the above photograph.

This footpath is frequently used by bike riders and PMD users, while there is no signage indicating whether bicycles or PMDs are permitted on this footpath or not.

If a bicycle or PMD is about to pass, pedestrians are forced to step off the path onto the grass. Furthermore, pedestrians must remain vigilant for cyclists or users of PMDs who are approaching from behind, and then step off the footpath to allow them to pass.



Attached below is a photograph of a footpath in a suburban area.

This path is regularly used by cyclists and users of PMDs residing in nearby houses and apartment units. Despite its frequent use, there is no signage indicating whether bicycles or PMDs are permitted on this footpath.

The path is only 1.1 metres wide, falling well short of the minimum standard width of 2.5 metres required for a shared path. Additionally, the footpath is obstructed by wheelie bins and other obstacles, which cyclists and PMD users must navigate around.

If a pedestrian encounters a cyclist or PMD user on this narrow path, they would be unable to safely step to the left due to the presence of long grass and uneven ground. And if they stepped to the right, they would be on the roadway and exposed to the dangers of passing vehicles and traffic.

These footpaths fall well short of the minimum standards required for shared paths in Queensland, and they are unsafe for pedestrians. Unfortunately, such footpaths would be representative of many or most shared paths currently found throughout the state.

#### Personal Experience and Observations on Pedestrian Safety

I don't have a car and have to walk to destinations. My personal experience in several towns across rural Queensland suggests that, approximately 90% of the time, I am the only pedestrian using a footpath. The other users I encounter are normally riders of PMDs and dog owners.

Based on general observations, at least 50% of PMD users do not adhere to required regulations, commonly due to speeding, not wearing a helmet, or carrying passengers. (26)

If the incidence of PMD users not adhering to required regulations is combined with the incidence of PMD users riding on footpaths that do not meet minimum government standards for a shared path, then the total incidence of no-compliance by PMD users must be at least 90%.

Given the high rate of non-compliance with regulations, it is inevitable that there will be a correspondingly high rate of injuries associated with the use of PMDs.

Similarly, at least 50% of dog owners are not abiding with regulations and do not maintain effective control of their dogs on footpaths and in parks. This is often because the dog is off-leash, or because the leash does not meet regulatory standards. With recent reports indicating that 19 dog attacks occur each day in Queensland, the risks associated with dog attacks are at least as significant as those posed by PMDs.(25)

It appears that many members of the public avoid using public footpaths due to concerns about their personal safety, particularly in relation to the presence of dogs and PMDs.

As a result, the large amount of money previously spent by councils building footpaths has been wasted.

#### PMDs reducing quality of life

Multiple studies show that limited access to green spaces or the inability to safely navigate public footpaths is linked to increased social isolation and a significant decline in quality of life. (19) (21)

In particular, older adults experience improved mood and reduced loneliness when they can access green spaces, but face heightened risks of isolation when barriers exist. (22)

High rates of non-compliance by dog owners and PMD users contribute to unsafe conditions on footpaths and in public parks, making these areas inaccessible for many people and reducing their quality of life.

#### **Recommended Pathway**

- **Recognition of health and social impacts:** Local and state government authorities must fully recognise the health and social impacts when people can't safely access footpaths and public spaces.
- Audits of existing pathways: Before bike riders and PMD users can use shared paths, the local council carry out an audit to ensure these shared paths meet Qld standards as outlined in the "Supplement to Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling" released by the QLD Department of Transport and Main Roads.
- Sign post approved shared paths: Shared paths that meet standards and have been approved by local councils are sign posted, and their location shown on maps available from a local council office and displayed on the website of the local council.
- Prohibit bicycle riders and PMD users from non-approved areas: Bike riders and PMD users must be prohibited from riding on any pathways except those that meet QLD government standards and have been approved and sign posted by the local council.
- **Phase out shared paths:** Shared paths are to be progressively phase out to create footpaths for pedestrians only, with separate lanes for bicycles and PMDs.

## 3. Effectiveness of current enforcement approaches and powers to address dangerous riding behaviours and the use of illegal devices

With thousands of serious injuries from PMDs in Queensland, current enforcement measures appear inadequate. (15) (16)

Enforcement of regulations would be made more difficult by a lack of clarity regarding permissible PMD routes, and whether riders are operating approved devices.

#### **Recommended Pathway**

- Acknowledge pedestrian use as primary: Local and state government authorities must acknowledge that footpaths and public spaces are primarily for pedestrian use. The accommodation of bicycles and PMDs is secondary, and only pursued once public spaces have been made safe for pedestrian use.
- Adopt the NSW model: Immediately ban privately owned e-scooters and e-bikes from public land; allow only shared PMDs through approved hire schemes in

designated trial areas that meet QLD standards and have been sign posted as being suitable for bicycle and PMD use. (20)

- Independent audits: Require independent audits of these trial areas, with results published for transparency, enabling informed decisions by police and local governments.
- Separate pedestrians from other pathway users: Apply risk management principles to isolate and separate pedestrians from PMDs. Require PMDs to use dedicated paths, bike lanes, or roads and not shared paths.
- **Progressively eliminate existing shared pathways:** Progressively reduce and eliminate existing shared pathways.
- Apply levies and permit fees: Fund construction and maintenance of dedicated PMD infrastructure through levies and permit fees on e-scooter and e-bike hire companies.

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- (21) https://sjdr.se/articles/10.16993/sjdr.50
- (22) https://pmc.ncbi.nlm.nih.gov/articles/PMC8194954/
- (23) https://www.worksafe.vic.gov.au/hierarchy-control

(24) https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Roadplanning-and-design-manual-2nd-edition.aspx

(25) https://www.townsville.qld.gov.au/about-council/news-and-publications/mediareleases/2024/november/dog-owner-responsibility-urged-following-news-reports

(26) https://www.qld.gov.au/transport/safety/rules/wheeled-devices/personal-mobility-devices