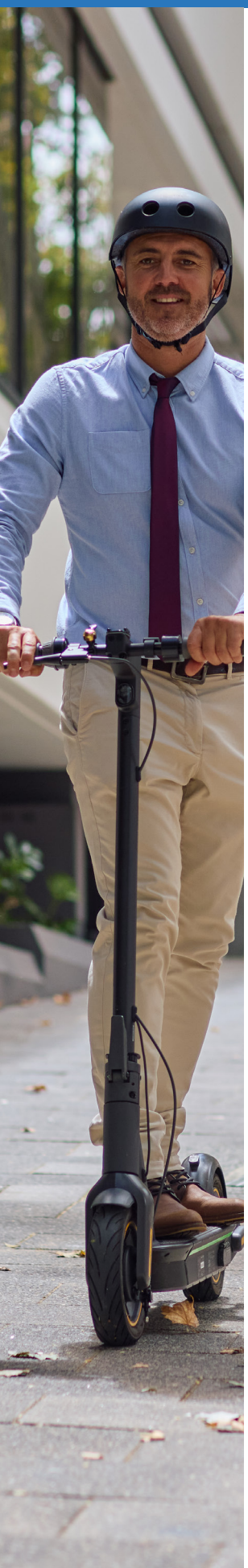
GOVERNMENT OF WESTERN AUSTRALIA

ROAD SAFETY COMMISSION

Review of the eRideable Road Rules

Report released May 2025



Executive Summary

The popularity of electric powered personal mobility devices has been steadily increasing in recent years. In line with advancing technology, many new types of devices have been coming on to the market. In response to this, rules permitting the use of certain types of electric rideable devices (eRideables) were introduced in Western Australia in December 2021.

Since the introduction of these rules, there has been intense media attention on eRideables, shifting rules in other jurisdictions, and divided public opinion on their place in the transport landscape. The Road Safety Commission therefore undertook a review to examine the rules in Western Australia.

This review included an examination of relevant literature and data, as well as stakeholder and public feedback gathered throughout 2022-2023. The findings of a two-phase study, conducted by the University of Western Australia in December 2022 and again in December 2023, were also included. Finally, the report monitored the learnings and progress of rules in other Australian jurisdictions. The specific objectives of the review included identifying potential improvements to the rules as well as any gaps in existing education and engagement activities.

Overall, the review found that the existing eRideable rules are largely supported. However, some issues are causing a negative impact on the safe use of eRideables, both for riders and other path/road users. Specifically:

- Although actual crash rates between eRiders and pedestrians do not appear to be significant, many pedestrians feel unsafe using paths, due to experiencing near-misses or other inappropriate riding behaviour from eRideable users.
- There is a concerning lack of compliance with the existing rules, particularly speeding, not wearing a helmet and not giving way to pedestrians.
- Electric devices that do not fit the definition of an eRideable (for example larger/heavier/faster devices) are being used illegally on public infrastructure and are available for purchase in some retail outlets.

The recommendations include amendments to the existing rules, the development of a Safety Action Plan and measures to improve compliance and education/awareness raising. The Road Safety Commission will also facilitate cross-agency collaboration to explore solutions for issues concerning paths.

Findings and Recommendations

Key Findings

1. The existing rules governing eRideables are generally well supported and achieve a good balance between enabling the use of these devices and ensuring the safety of riders and other path and road users.

2. Given the existing issues with rule compliance (particularly speed), the current eRideable dimensions are appropriate.

3. More action is needed to decrease conflict between pedestrians and eRideable users, particularly on paths that have high levels of use.

4. Education on the rules should be continued and enhanced, along with the promotion of courtesy and safe riding behaviour amongst eRideable users.

5. Further action is needed to encourage compliance with the rules, including increased enforcement.

6. Larger/faster/heavier electric devices could be classified as a different type of vehicle and different rules could apply. This should be further explored with the relevant stakeholders, including an examination of the safety, insurance, licensing, registration and enforcement implications.

Recommendations

1. Amend the Road Traffic Code 2000 to remove the prohibition on eRideables travelling on 50km/h roads that have a dividing line or median strip.

2. Amend the Road Traffic Code 2000 to provide alternatives to giving hand signals where it is unsafe for the rider to do so.

3. Conduct targeted education/awareness for school aged children and their parents about buying eRideables, the rules, rider courtesy and safe riding behaviour.

4. Review the penalties for eRideable offences (and, where relevant, corresponding cyclist offences) contained within the Road Traffic Code 2000.

5. In conjunction with key stakeholders (Main Roads Western Australia, Local Government and Department of Transport) examine solutions to increase clarity on what constitutes a footpath versus a shared path and to address some issues with the signage/road markings of bicycle lanes.

6. Develop an eRideable Safety Action Plan in conjunction with stakeholders.

7. Conduct future surveys to better understand eRideable use, monitor trends and inform the Government's ongoing communication, education and policy on eRideables.

8. Explore whether larger/faster/heavier electric powered devices could be classified differently to existing eRideables currently permitted on WA public roads and paths. Considerations include the safety, insurance, licensing, registration and enforcement implications.

Objectives of the eRideable Road Rules Review

The Road Safety Commission undertook this review to identify initial learnings from the regulations being in place to permit the use of eRideable devices on public roads and paths.

The specific objectives of the review were to:

1. **Identify whether further regulatory amendment is required to improve road safety outcomes in the Western Australian context.**
2. **Identify potential refinements to education and engagement activity conducted by the Commission to support the safe use of eRideables.**
3. **Identify emerging issues requiring further research.**
4. **Collect data on eRideable use in Western Australia.**

The review involved the collection and analysis of information using the following methods:

1. An interjurisdictional comparison of eRideable/personal mobility device rules.
2. Analysis of Australian and international research and literature surrounding eRideable use.
3. A research project undertaken by the Western Australian Centre for Road Safety Research, based at the University of Western Australia, to collect and analyse observational and intercept survey data.
4. An online community survey delivered by the Road Safety Commission to gauge attitudes on the regulations and eRideable use.
5. Targeted stakeholder consultation with government agencies, local government, peak bodies and commercial operators to identify practical and operational issues surrounding the current regulations and device use.

Background

On 4 December 2021 the *Road Traffic Code 2000* (the regulations) were amended to enable the legal use of eRideables on public roads and paths. Prior to the amendment, only low powered motorised scooters (less than 200 watts and capable of speeds not exceeding 10km/h) were permitted to be used on public infrastructure.

Advancements in technology meant that higher powered scooters and other types of electric powered personal mobility devices were becoming readily available, both internationally and locally, from around 2017 onwards. Despite being illegal to use in public places, the devices became increasingly popular across Australia. This prompted the development of rules to reduce conflict with other road/path users and encourage the safe use of devices.

The National Transport Commission undertook extensive consultation and analysis to develop national model rules for personal mobility devices as part of the Australian Road Rules. Western Australia adopted the model rules, with some minor changes to align with the State's existing regulatory environment and circumstances.

WA eRideable Rules

Regulation 3A of the regulations defines an electric rideable device as a scooter, skateboard or other vehicle that:

- has at least one wheel;
- is designed to be used by a single person;
- has an electric motor/s;
- is fitted with an effective stopping system controlled by use of brakes, gears or motor control;
- when propelled only by the motor/s, is not capable of going faster than 25km/h on level ground; *and*
- does not exceed:
  - 1250mm in length;
  - 700mm in width;
  - 1350mm in height; *and*
  - 25kg in unladen mass.

eRideable devices include eScooters, eSkateboards, eUnicycles, hoverboards, eWheels and eSkates. The category does not include eBicycles, electric personal transporters (EPTs) (commonly known as Segways), motorised scooters (less than 200 watts and 10km/h), electric wheelchairs or other personal transporters.

Regulation 3A(4) allows the Minister for Road Safety to publish a notice in the Gazette approving mass and dimension requirements that apply to a scooter, skateboard or other vehicle, or to a class of scooters, skateboards or other vehicles. In 2022, the Minister published a notice allowing commercial operators to own and operate electric scooters weighing up to 35kg and with a maximum length of 1300mm.

The variation was made to accommodate the features that eScooters require to be fit for the purpose of commercial rideshare and hire operations. These features – which add to the device size and weight – include longer lasting batteries, built-in GPS/user technology systems, stronger frames, larger footboards, helmet locks, protection against theft and vandalism, and weather proofing. The risks associated with additional weight are mitigated by the presence of safety mechanisms such as geofencing and speed limiters that cannot be adjusted by the rider.

eRideables are permitted to travel at the following maximum speeds:

- Footpaths: 10km/h
- Shared paths and bicycle paths: 25km/h
- Roads with a speed limit of 50km/h or less and no median strip or dividing line: 25km/h
- Bicycle lanes on roads with a speed limit of 50km/h or less: 25km/h

eRideables are not permitted to be used:

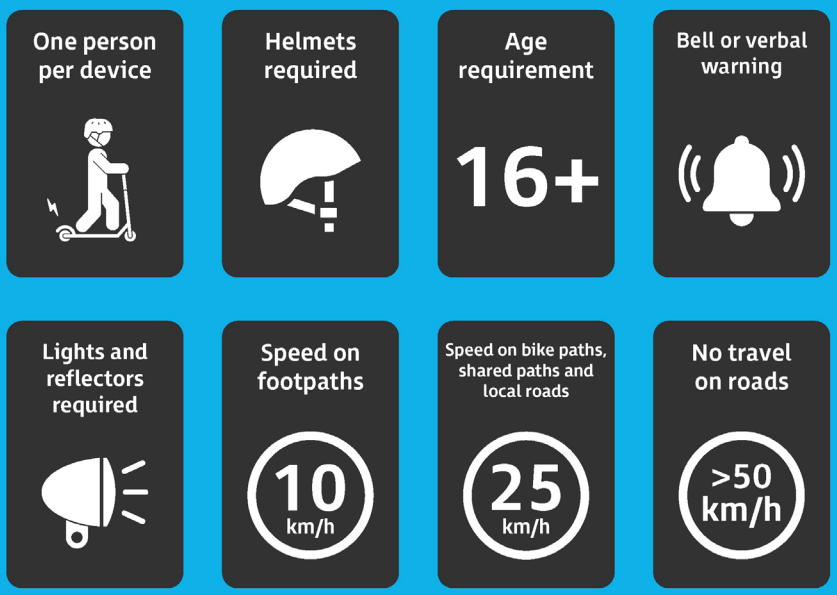
- in pedestrian malls,
- on roads with a speed limit above 50km/h,
- on roads with a median strip or dividing line,
- on any road or carriageway with a “no bicycles” sign or road marking, or a “no wheeled devices” sign.

Many of the rules that apply to bicycles also apply to eRideables, such as wearing a helmet, use of lights and reflectors at night, keeping left, and giving way to pedestrians. Like bicycles, eRideables must be fitted with a bell or similar warning device, but are exempted if the design of the eRideable makes it impracticable for a warning device to be fitted.

eRiders must be a minimum of 16 years old and are not permitted to carry passengers or animals. Because WA classifies eRideables as vehicles rather than pedestrians, other rules that apply to all vehicle drivers and riders (such as drink driving rules) also apply to eRideable users.

A range of penalties apply to illegal eRideable use.[1] Electric devices that do not fit the definition of an eRideable or other licensed vehicle category (such as eScooters heavier than 25kg) can be seized and destroyed by police if used on roads or paths.

eRideable Current Laws



[1] eRideable penalties for WA are available at:
https://www.wa.gov.au/organisation/road-safety-commission/erideables

Inter-jurisdictional Comparison

Privately owned eRideables (generally referred to elsewhere as personal mobility devices) are permitted in Queensland, Victoria, Tasmania and the Australian Capital Territory. In the remaining jurisdictions, only rideshare schemes are currently permitted to operate eRideables in public places, however South Australia and New South Wales are planning to legalise the use of privately owned eRideables in the future.

Jurisdictions have generally adopted the provisions of the model Australian Road Rules with some modifications. The Australian Road Rules contain two options for maximum weight and dimensions – one designed to include EPTs and the other designed to exclude them. Unlike Western Australia, other jurisdictions have adopted the provisions that allow EPTs to be considered eRideables.

The penalties for non-compliance with personal mobility device rules in other jurisdictions are generally much higher than the corresponding penalties in Western Australia. For example, in Queensland, Australian Capital Territory and Tasmania, not wearing a helmet carries an infringement penalty approximately three times higher than Western Australia's $50 penalty, with Victoria's penalty over four times greater.

Table 1 shows an interjurisdictional comparison of the rules governing private eRideables.

Inter-jurisdictional Comparison (as at 11 February 2025)

Table 1 – Private eRideable Use – *Interjurisdictional comparison on permitted devices, speed limits and minimum age*

Infrastructure	Footpaths			Shared Paths			Bike Paths	Roads		Bike Lanes	
							Separated or bike-only	Local road	Any road ≤60km/h	Any road ≤50km/h	Separated bike lane, any road
Max Speed	**10km/h**	**12km/h**	**15km/h**	**12km/h**	**20km/h**	**25km/h**	**25km/h**	**25km/h**	**20km/h**	**25km/h**	**25km/h**
WA ▲✚ 25kg 1350mm (h) 1250mm (l) 700mm (w)	✓	✗	✗			✓	✓	✓	✗	✓	✗
QLD ●★ 60kg 1350mm (h) 1250mm or 700mm (l) 700mm or 1250mm (w)		✓	✗	✓	✗	✗	✓	✓	✗	✓	✓
ACT ▲●♦ 60kg 1350mm (h) 1250mm (l) 700mm (w)			✓			✓	✓	✗	✗	✗	✗
TAS ▲✚ 45kg 1350mm (h) 1250mm (l) 700mm (w)			✓			✓	✓	✓	✗	✗	✗
VIC ▲■✚ 45kg	✗	✗	✗		✓	✗	✓	✓	✓	✓ any road <60km/h.'	✗
NSW N/A	The NSW Government has announced plans to legalise eScooters as part of its E-micromobility Action Plan.										
NT N/A											
SA N/A	The SA Government has introduced legislation to Parliament to enable eScooters and other personal mobility devices to be used on public roads and paths in South Australia.										
National model ●✚▲ 25kg or 60kg 1350mm (h) 1250mm or 700mm (l) 700mm or 1250mm (w)	Permitted on this infrastructure but no speed limit specified.								✗	✗	✗

▲ Device cannot be capable of travelling faster than 25km/h.

● Rules apply to both eRideables and EPTs.

■ Only electric scooters are permitted in public areas.

✚ Minimum age 16 years.

★ Minimum age 12 years if supervised by an adult, 16 if no supervision.

♦ Minimum age 12 years. Under 12 can ride with adult supervision.

The Queensland Rules

In December 2018, Queensland became the first Australian jurisdiction to introduce rules governing the use of eScooters and other electric powered mobility devices. The model Australian Road Rules were largely based on the Queensland rules, however the National Transport Commission's regulatory development process resulted in some key differences (such as a minimum age of 16 years in the model rules).

In November 2022 changes were made to the Queensland rules, including changing the status of eRideable users from pedestrians to drivers (following the WA model) and reducing the maximum speed on shared paths from 25km/h to 12km/h. This change was made in response to consultation with various stakeholders including pedestrian and disability advocacy groups, who were concerned with the risks surrounding large powered devices travelling at high speeds among slow moving pedestrians.

After the initial rules were introduced, the Department of Transport and Main Roads (DTMR) in Queensland partnered with a number of government and industry stakeholders to form the Personal Mobility Devices Safety Action Group. This group was responsible for developing an eRideable Safety Action Plan (see Appendix 1). The Action Plan includes short, medium and long term actions to improve eRideable safety throughout the state.

Queensland Police initially took an education approach to riders not abiding by the rules, by handing out cards containing a QR code linking to information about the rules. Active enforcement of the rules is now taking place, including where speed limits are exceeded, prohibited road use and where no helmet is worn.

Representatives from DTMR advised that the rules were working well in the state. Extensive stakeholder consultation was key to arriving at a set of rules that are safe and appropriate for Queensland's infrastructure and active mobility requirements. Education campaigns and active enforcement have also assisted in improving compliance with the rules, enhancing public acceptance of the devices and, ultimately, encouraging the safe use of eRideables.

Research, Literature and Statistics

Due to the relatively recent advent of eRideable technology, there is somewhat limited research and data available on crash rates, risk factors and other issues associated with eRideable use. However, some common themes can be identified in both the international and Australian research available, particularly in terms of rider characteristics and injury patterns.

International

Rules governing eRideable use significantly vary between different countries. In Korea, Spain and Sweden, riders are not permitted on footpaths, while in Singapore devices cannot be ridden on roads. In the United Kingdom, only hire scheme eRideables are permitted, while hire devices have been banned in Paris. Rules regarding speed limits, helmets and age limits also vary considerably.

In terms of rider demographics, studies show that the majority of eRiders are younger males who use the devices more for recreation/leisure than for commuting to work or school. Less popular reasons for using eRideables include lower purchase and running costs than cars and environmental concerns.

Younger males are also more likely to experience an injury from crashing an eRideable. The most frequently sustained types of injuries include to the head, face and upper extremities and are more commonly experienced by eRideable riders than bicycle riders. International research also consistently identifies that injured riders are frequently not wearing a helmet and are under the influence of alcohol and/or drugs. There is also evidence to suggest that the majority of injuries to eRiders occur as the result of a fall and not through colliding with another person or vehicle.

In New Zealand, despite the number of claims to the Accident Compensation Corporation increasing as eRideables become more popular, the cost per claim has started to decrease. This may indicate less severe injuries as people become more familiar with riding eRideables, skills increase and injuries reduce in severity.

Risk factors for crashes/injury include poor infrastructure, product failure, and user behaviour (including inexperience, aggression and risk taking). Although most studies analyse hospital admissions data, there is limited research available to effectively quantify the risks associated with eRideables being involved in crashes. Some research suggests that strategies such as educational campaigns, effective user training, rule enforcement and technology for shared devices (to enforce helmet use and restrict use when risky riding behaviour is detected) can all positively influence safer riding behaviour.

Another consistent theme in the literature is the common problem of conflicts between pedestrians and eRiders. In one study that analysed survey data across five countries, 20% of riders admitted to colliding with another person and 77% of non-riders indicated they had had a near miss with an eRideable. This risk is heightened with heavier devices, particularly when travelling at higher speeds, as the kinetic energy being transferred to a pedestrian in the event of a crash is higher.[2]

[2] A 60kg device being ridden by an 80kg person at a speed of 25km/h would have the kinetic energy 43 times that of an 80kg person walking at a speed of 5km/h. In contrast, the same 60kg device being ridden at a speed of 10km/h is only seven times greater in kinetic energy than the pedestrian.

Australia

Many of the findings from international research are also reflected in the (limited) Australian research into eRideables. Again, males are more likely to use eRideables, while middle-aged males (median 40 years) are more likely to suffer injuries requiring hospitalisation. The most common injury types are fractures, dislocations, sprains and soft tissue damage and are more likely to be to the head or upper body than the lower body. Nearly half of injured riders in one study were intoxicated at the time of the crash and there was a high proportion of head injuries due to non-helmet use. Helmet use was substantially higher amongst riders who owned their device than by hire scheme users.

Data from Royal Perth Hospital shows similar statistics. Between 2017-2022, there were 74 people admitted who had suffered a major injury resulting from an eRideable, requiring hospitalisation of more than 24 hours, or who had died. The majority of patients were male and the most common age group bracket was 31-45 years old. More than half of these patients were not wearing a helmet and 39% had consumed alcohol and/or drugs.

Royal Perth Hospital statistics collected between 2013 and 2022 also show that the majority of patients admitted for cycling related injuries were male. However, bicycle riders were more likely to be in the 46-60 years age bracket. Cyclists were more likely to be wearing a helmet at the time of the accident than eRiders (78%) and only 13% had consumed alcohol and/or drugs.

In Australian studies, trip purpose is more likely to be identified as for recreation than commuting and eRideables are typically used more in warmer weather. Improved path infrastructure is consistently seen as an important factor for both safety and usage uptake, while separated infrastructure is commonly rated as the safest option for riders.

Australian studies also show that, when compared to people who regularly use eRideables, non-riders/pedestrians are more likely to believe that eRideables are dangerous. This perception is more common amongst women and older people. Despite many pedestrians believing that eRideables pose a risk to them, research suggests that the devices are more widely accepted by the Australian community than in comparable international jurisdictions.

University of Western Australia Observational Study

To address the research gap in Western Australia, the Road Safety Commission engaged the University of Western Australia's Centre for Road Safety Research to conduct a study. The study consisted of two observation periods (12 months apart) to document compliance with the rules and other safety related behaviours of both cyclists and eRiders. This was followed by analysis of results obtained on eRideable use through a survey, completed by both regular riders and non-riders. The first and second phase results were then used to ascertain whether any changes in behaviour or attitudes could be identified over this time.
A summary of the first observation period is provided at Appendix 2.

First Phase

The first observational study was conducted in November and December 2022. Research assistants observed and recorded aspects of eRider and cyclist characteristics and behaviour at nine sites around the Perth CBD, Northbridge, Burswood, South Perth and Scarborough foreshore. Information relating to 4,931 eRiders and 19,053 cyclists (including people riding eBikes) was recorded for analysis. The vast majority of eRideables (92%) were eScooters, 7% were eSkateboards, and the remaining 1% comprised mostly eUnicycles and eWheel devices.

Around 80% of eRiders were male and roughly 96% were estimated to be over 16 years of age. 92% of eRideable devices were recorded as being privately owned as opposed to hire scooters. This is due to the study preceding the introduction of the hire eScooter scheme in the City of Perth.

In terms of unsafe riding behaviour, the most commonly observed issue was failure to wear a helmet. Approximately 18% of eRiders were not wearing a helmet, compared to 8.5% of bicycle riders. People riding privately owned devices wore helmets more often than those riding hire scooters. Helmet compliance was better on weekdays than weekends and more common among males than females.

Assessment of riders travelling too fast was a judgement call made by observers on the basis of the environmental conditions present. It was found that eScooter and eSkateboard riders were travelling too fast more often than bicycle riders. Field observers also assessed whether a rider undertook an inappropriate manoeuvre, defined as "any rider movement judged to have a safety risk under the observed conditions." Again, eScooter and eSkateboard riders undertook more inappropriate manoeuvres than bicycle riders. Such manoeuvres were also more common among hired eScooters than privately owned eScooters and were observed more often on footpaths/shared/bicycle paths than on roads.

Only 38 eRiders and 81 non-eRiders responded to the UWA survey. Due to the sampling method and small number of respondents, the results may not be representative of eRiders more broadly and must be interpreted with caution.

The surveyed eRiders mostly used their devices to commute to/from work, while less than half had ever used their device in conjunction with public transport. The most common reasons for using an eRideable were to save money and simply for fun. Concerns about infrastructure and rider safety were cited as barriers to using eRideable devices more regularly.

Around half of the surveyed eRiders had been involved in, or witnessed a crash. Approximately two-thirds of non-riders claimed to have seen a near-miss, however only a quarter of riders had witnessed or been involved in a near-miss. Respondents identified the reasons for negative events as being speed, lack of awareness and lack of courtesy.

Despite a large proportion of non-riders reporting they had seen eRiders engaging in risky behaviours, only a third of respondents were concerned about the use of eRideables or felt they should be banned.

Respondents suggested that potential safety improvements could be achieved by better enforcement of the rules, improved infrastructure and less negative attention being given to eRideables in the media and community.

Second Phase

The second observational study was conducted in December 2023, and largely replicated the 2022 study. Research assistants again observed and recorded eRider and cyclist characteristics at similar sites to the first study. A total of 29,808 riders were observed; 84% of these were bicycle riders (or eBikes) and 16% were eRideable users. The vast majority of eRideables were eScooters. Again, the majority of eScooter riders were male (79%) and around 96% were estimated to be over 16 years of age. Around 81% of all eScooters observed were privately owned, with 19% being hire scooters. This increase in hire devices is due to the introduction of an eScooter hire scheme in the City of Perth during 2023.

In terms of unsafe behaviours, failing to wear a helmet was again the most common issue. Around 15% of eRideable users did not wear a helmet, compared to 8% of bicycle riders. Helmet use was again more prevalent among riders of privately owned devices, than it was amongst riders of hired eScooters. eRideable users were found to be more likely than bicycle riders to ride too fast and to undertake inappropriate manoeuvres, which also reflects the first phase results.

The second phase saw an uptake in survey respondents who identified as non-eRideable users, however only 46 eRideable users responded. Results were similar to the 2022 survey in terms of reasons for use and barriers, although concerns about infrastructure were reported slightly less, with device purchase costs now more of a barrier.

Around a quarter of eRideable users reported having been involved in, or witnessed a crash, which is a decrease from around half of respondents in the first phase. However, the incidence of witnessing/experiencing a near-miss increased from a quarter of eRideable users in 2022 to about one-third in 2023. The survey respondents thought that the most frequent causes of negative events involving eRideable users was a lack of rule awareness and riding too fast, which reflects the first phase results.

The second phase of the study highlights that there were neither any significant improvements to, or increases in, risky behaviour and rule compliance by eRiders. This outcome suggests that more education and enforcement may be needed, to change attitudes and improve compliance with the rules.

Survey

The Road Safety Commission conducted a survey about eRideables using its community engagement platform during September and October 2022. A total of 1,199 valid responses from Western Australian residents were received.

Profile of respondents

61% of respondents identify as male, 36% as female, less than 1% as non-binary while 3% did not respond or indicated they would prefer not to say. Slightly more than half of the respondents were aged between 36 and 55 years old. The overwhelming majority of respondents were from the Perth metropolitan area.

Most respondents (61%) identified as more than one type of road user. The greatest proportion identified as drivers or riders of motor vehicles (65%), followed by pedestrians (61%), eRideable users (51%), and cyclists (33%).

Views

Respondents were most supportive of eRideables being used on bike paths, followed by bike lanes on low-speed roads and shared paths. They were least supportive of eRideable use on footpaths, followed by bike lanes on higher speed roads. Compared to people who didn't identify as eRideable users, eRideable users showed a higher level of support for eRideable use on all types of infrastructure. However, the pattern of support was very similar for both groups.

When asked about the appropriate speed limit on different types of infrastructure, the most popular responses aligned with the actual limit on both footpaths and shared paths. Females and eRideable non-users were more likely to prefer lower speeds than males and eRideable users, particularly on footpaths and shared paths.

Most respondents were not in favour of reducing the age limit for eRideable use, imposing additional requirements for people riding eRideables at night or increasing the mass and/or dimension limits.

Experience

Of the 1,199 survey respondents, 753 (63%) said they had ridden an eRideable in Western Australia at least once. Of the respondents who had ever ridden an eRideable, three in four owned the eRideable, while one in four had hired a device and a similar number had borrowed an eRideable.[3] Privately owned devices had most often been purchased in-store or from an online Australian retailer.

Of the respondents who reported having ridden an eRideable in WA, less than one in eight indicated that they had been injured while riding and less than one third of those required medical treatment. More than half of the incidents occurred on shared paths or footpaths and the vast majority (86%) did not involve any other road or path users.

Two fifths of survey respondents reported having experienced a near miss with an eRideable. However, only 3% of pedestrians reported having been injured in an incident with an eRideable.

Further comments

There were 516 comments received. The comments covered a broad range of topics and sentiments. A small number of people took the opportunity to call for all eRideables to be banned, while an approximately equal number of people criticised the government for being too strict in its approach. The vast majority of commenters fell somewhere in between, with many calling for better enforcement, some offering suggestions for improving infrastructure or rules and others detailing the way eRideables have improved their lives.

A detailed report on the survey results is provided at Appendix 3.

[3] 71% had ridden device they owned, 24% had ridden a hired eRideable, and 27% had ridden a borrowed device. Sum of percentages exceeds 100% as respondents were permitted to select more than one response.

Stakeholder Consultation

Consultation sessions were conducted with key stakeholders from state government, local government, peak bodies and commercial rideshare operators. The purpose of this targeted consultation was to gauge attitudes on various aspects of the eRideable rules and usage as well as to identify current and emerging issues. Stakeholders were encouraged to suggest solutions to problems and identify the things they would change if cost and practicality were not an issue.

Stakeholder views were also sought on two legislative amendments that were proposed in response to complaints about congestion and pedestrian conflict on paths.

A summary of feedback and common themes discussed in the consultation sessions follows.

The Rules

Stakeholders were generally supportive of the existing rules, saying they appear to achieve a good balance between enabling eRideable use and protecting other road and path users. While the rules themselves are sensible, it is important to ensure compliance with the rules in order for these to be effective.

Some stakeholders raised aspects of the rules that they found to be impractical or confusing. For example, having one speed limit for footpaths and another for shared paths is difficult to enforce due to the absence of a clear legal differentiation between the two path types. Concern was also expressed about the potential for different dimension requirements for private versus commercial devices to undermine the rules. A number of stakeholders also mentioned that the requirement to use hand signals before turning etc could pose a danger to eScooter users, as only having one hand on the device may cause a loss of control.

There was mixed support for the existing age limit of 16 years to operate an eRideable. Some stakeholders believed that permitting younger children to ride under adult supervision may encourage better rider behaviour and compliance with the rules in the long term.

Suggestions for improvements to the rules included making devices more visible (i.e. through use of mandatory high visibility clothing) and audible (such as via the use of automatic noise alert systems). It was also suggested that creating an offence for modifying devices could improve compliance with the rules. Further guidance on what constitutes a shared path versus a footpath is also necessary.

Implementation

Most stakeholders felt that the rules were well implemented and communicated to the public. However, there is room for further education and awareness raising in the community. This is most needed on rules that are most frequently/visibly broken (e.g. speeding and helmet use) and those that cause risk to other path users (e.g. giving way to pedestrians) in order to create behavioural change.

More education is also needed at the retailer level (due to concerns with retailers selling non-compliant devices) as well as to children and parents of school-age children within the school community. A common concern was that children under 16 years are using the devices illegally and that some parents are not aware that devices are not toys.

Stakeholders also suggested the use of popular role models to promote rules and to promote road/path etiquette.

Enforcement

While stakeholders had mostly positive things to say about the rules and their implementation, they were less satisfied with the enforcement of the rules. Almost without exception, stakeholders said that enforcement of the eRideable rules is insufficient. They viewed better enforcement as particularly necessary on popular routes, such as foreshores and principal shared paths, where there is often a crowded mix of pedestrians, eRiders and cyclists.

Speed was the biggest enforcement concern for many stakeholders as excessive speed[4] carries serious risks for the rider as well as other road and path users. Suggestions for increasing compliance included making it an offence to modify devices, greater use of speed stickers/ markings on paths and encouraging eRiders to use lower speed roads instead of footpaths.

[4] Most stakeholders expressed concern about riders travelling at speeds well over the 25km/h limit, meaning the vehicle technically falls outside the eRideable definition and would be classified as an unregistered motor vehicle.

Infrastructure/Planning

Most stakeholders raised issues relating to infrastructure, reporting that there is simply not enough infrastructure to accommodate the volume of active transport traffic and that the infrastructure that does exist is often fragmented and/or of poor quality. It was noted that, compared to bicycles, eRideables are more affected by uneven surfaces (eg. cracks, tree root bulges, drains, rough paving, etc) due to smaller wheel size, limited/no suspension and different geometry.

Therefore, not all infrastructure designed for or suited to bicycle use can be safely used by eRideables. People also mentioned issues with on-road bicycle lanes that suddenly terminate and the fact that many apparent 'bicycle lanes' are improperly marked and cannot be lawfully used by eRideables. The lack of any bicycle paths/lanes in older, inner-city suburbs was also of concern to some stakeholders.

The majority of stakeholders were of the opinion that more separated infrastructure is required in order to reduce conflict between eRideables and pedestrians on paths, and between eRideables and motor vehicles on roads. However, it was acknowledged that separated infrastructure is expensive and takes space that may not be readily available.

Further, some separated infrastructure inadvertently creates safety hazards for riders – the example commonly cited was protected on-road bicycle lanes where rubbish collects and creates obstacles which, due to un-mountable kerbs, cannot be easily avoided.

A number of stakeholders also raised questions or made suggestions about banning the use of eRideables on certain paths or in certain areas. Stakeholders were uncertain whether local governments have the power to prohibit eRideables being used on paths within their local government area and whether exclusion zones would be enforceable.

It was recognised that eRideables are a convenient, inexpensive and sustainable mode of transport which must be considered when planning, building and maintaining infrastructure. Further, innovative design solutions must be found, tested, and implemented to ensure that the growing number of eRideable users are catered for without compromising their safety or the safety and enjoyment of other active transport users. This will encourage more active mobility and foster less reliance on cars.

Other Suggestions

Most stakeholders generally supported the use of eRideables in public places. While concerns regarding unsafe and illegal behaviours exist, the benefits of this form of transport include less emissions, more active travel options and less motor vehicle congestion. Normalising eRideable use is likely to improve rider safety through mechanisms including better visibility of riders, changing rider culture, an increase in drivers and pedestrians identifying with eRiders, and encouraging development of suitable infrastructure.

Suggestions for improving safety by increasing the uptake of eRideables as a mainstream form of transport included better integration with public transport, more parking and end-of-trip facilities for privately-owned devices and fast-tracked upgrades to paths (including width, surface quality, lighting etc). Other suggestions included lowering the speed limit on local roads, re-allocation of roads to become active transport routes and more behaviour change programs to normalise active travel.

Various strategies for improving rule awareness and compliance were put forward. These included better information at point of sale, regulating/restricting the importation or sale of non-compliant devices, mandatory labelling of all devices as either compliant or non-compliant, more signage in areas where eRideables are used and more visible enforcement.

Given the opportunity to propose improvements, stakeholders most often responded with comments about cultural or behavioural changes among eRideable users (consideration for other road/path users, etiquette and compliance with the rules). Stakeholders also expressed a desire for better (separated) infrastructure, increased enforcement, and reduced speed limits (for motor vehicles) on local roads.

Proposed Legislative Amendments

An amendment to remove the prohibition on travelling on divided 50km/h roads, was suggested as a way to alleviate congestion on paths, particularly in high use areas such as the Perth CBD. Currently, eRiders are only permitted to use roads with a speed limit of 50km/h or less if the road does not have a dividing line or median strip. Changing this to allow eRideables on all roads with a speed limit of 50km/h or less may encourage riders to use the road instead of footpaths. It would also create consistency with bicycles, which are permitted to be on these roads.

There was mixed stakeholder support for this proposal. Most were supportive, on the basis that it would decrease congestion on paths, which may in turn decrease risk to pedestrians and allow them to feel safer when walking. This would also create more consistency in the rules, and decrease confusion about where people are allowed to ride.

A minority of stakeholders did not support the amendment. These stakeholders were concerned about an increased risk of injury to eRiders using roads with higher levels of motor vehicle use. Reservations were expressed about the proposal due to the lack of evidence demonstrating that this is a safe option. These stakeholders suggested that pedestrian/eRider conflict could be better addressed by increasing enforcement and reducing speed limits on paths to 5km/h.

A second amendment proposing the expanded use of on-road bicycle lanes was discussed, however due to technical complexities (including what constitutes an on-road bicycle lane) and safety concerns, this amendment will not be pursued.

Discussion and Conclusion

The review examined a number of issues relating to eRideable use in Western Australia, including the appropriateness of the rules, the reasons for use and the risks involved. Common themes exist in both the international and local research and some of these issues were reinforced in stakeholder consultation and the survey. The UWA study provides some insight into rider behaviour and contributes towards a baseline set of data for this state. By examining this research, and the opinions and experiences of a wide segment of the community, recommendations to improve road safety outcomes have been identified.

The review found that the existing rules are generally well supported and achieve a good balance between enabling the use of these devices and ensuring the safety of riders and other road/path users. While a national model set of eRideable rules exists, jurisdictions have taken different approaches to implementing these rules.

Western Australia has adopted the model that differentiates between eRideables and EPTs and thus has a lower weight limit than other states. The advantage of a lower weight limit means that the devices are safer when interacting with pedestrians and can therefore be used on paths at higher speeds than most of the jurisdictions that allow heavy devices. The survey and consultation results show a high level of support for keeping the existing dimension, weight and speed limits in place.

Research and survey responses indicate that eRiders are commonly using their devices for reasons other than first and last mile transport, such as for entire commutes and for leisure trips. The existing rules were intended primarily to service first and last mile transport and are still fit for this purpose. However, it is acknowledged that larger/faster/heavier devices may be more efficient for travelling long distances.

As the review has identified existing issues with pedestrian conflict and rule compliance, it is not considered appropriate to allow such devices on paths. It is suggested that further work needs to be undertaken to investigate how larger/faster/heavier devices could be used in a way that will minimise risk to pedestrians, such as creating a new vehicle classification with different rules. The safety, registration, licensing, insurance and enforcement implications must be assessed by all agencies responsible for these requirements.

Conflict between pedestrians and eRideables was a consistent theme in all parts of this review. This issue is heightened by evidence that there is a concerning level of non-compliance with the rules, including a higher level of speeding and inappropriate manoeuvres among eRiders than cyclists. While research and the survey results indicate that the actual incidence of collision with pedestrians is minimal, near-misses and the perception that pedestrians are unsafe are having a negative impact on this vulnerable group. Education was seen as key to addressing this, including greater promotion of the rules, and to encourage better and more courteous rider behaviour in general. Increased enforcement was also seen as crucial, as well as solutions for riders to accurately identify footpaths versus shared paths and ride to the corresponding speed limit.

An amendment to the regulations would assist in resolving the eRider-pedestrian conflict on paths, particularly those paths with high levels of pedestrian use. By allowing eRiders to use all roads with a speed limit of 50km/h, more riders can choose to ride on the road rather than the path. This amendment will also contribute towards overcoming the current confusion on where riding is permitted and the inconsistency between where bicycles and eRideables can be ridden.

Another rule amendment is suggested that will serve to enhance safety for eRideable users, particularly eScooter riders. Currently, riders must use hand signals before turning or stopping, however taking a hand off the handlebars can have a negative impact on the balance of an eScooter rider. Allowing riders to choose between using hand signals or an alternative (such as appropriate electronic indicators/brake lights) will mean that eRiders can choose the safest signalling option for their circumstances.

Observations were commonly made that there is an existing problem with children riding dangerously. It is recommended that education and awareness be targeted at school aged children and their parents, to reinforce the message that children under 16 years are not permitted to use these devices. Education for children 16 years and over may also be necessary to teach them (and their parents) the rules, and to encourage courtesy and safer riding behaviour in general.

The need for better enforcement of the rules was raised by almost all stakeholders. The literature shows that enforcement plays a fundamental role in ensuring the safety of riders and other road/path users. A high proportion of crashes involve riders who are not wearing helmets and who are under the influence of alcohol and/or drugs. Enforcement is crucial to reducing the number of riders who ignore these rules.

The review found that the current penalties are much lower in Western Australia compared to other jurisdictions. Increasing the penalties may encourage better compliance with the rules, particularly if the new penalties are well publicised and visibly enforced.

Stakeholders and survey respondents offered many valuable and innovative suggestions for improving eRideable safety by encouraging better compliance with the rules, facilitating development of better and safer infrastructure, and implementing alternative education, engagement and awareness raising initiatives.

Queensland's successful introduction and refinement of its personal mobility device model was aided by extensive collaboration and consultation with relevant stakeholders on a safety action plan. It is recommended that Western Australia use a similar model to develop its own eRideable Safety Action Plan. Suggestions made by stakeholders and survey respondents during the review process will be collated for discussion and possible inclusion in the Action Plan, enabling these suggestions to be further considered and progressed by the appropriate agencies.

Due to continuous advancements in technology and consumer desire to find alternative mobility options, eRideables are a fast evolving and increasingly popular transport option. The State Government will continue to monitor the use and regulation of eRideables to ensure the rules remain contemporary and to protect vulnerable road users.

The Road Safety Commission will conduct future surveys and/or reviews in order to better understand eRideable use, monitor trends and to adequately inform the Government's ongoing communication, education and policy programs.

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GOVERNMENT OF WESTERN AUSTRALIA

ROAD SAFETY COMMISSION

Review of the eRideable Road Rules

Further information
www.rsc.wa.gov.au/erideables

Personal Mobility Device Safety Action Plan

Queensland Government

The Department of Transport and Main Roads acknowledges the Traditional owners and the land and waterways. We also acknowledge their ancestors and Elders both past and present. The Department of Transport and Main Roads is committed to reconciliation amongst all Australians.

"Travelling" by Gilimbaa

Licence

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Contents

Foreword

In recent years, we have seen a boom in the popularity of Personal Mobility Devices (PMDs) across Queensland. PMDs include a range of new and innovative devices, including e-scooters, e-skateboards and self-balancing devices, such as solo wheels and segways. These devices present the potential for great benefits for improved mobility, reduced traffic congestion, greener commuting, tourism and recreation.

I'm proud to have introduced the first comprehensive safety laws for PMDs in Australia in 2018. Since that time, several other Australian jurisdictions have followed Queensland's lead in enabling the use of these innovative devices. Queensland's PMD laws have created significant economic opportunities with many hire, share and retail companies opening up, bringing jobs and economic activity to our state.

As with any new technology, there is a need to continually review and adapt our approach to managing the safety of PMDs in Queensland. In recent years, the boom in both shared schemes and personal ownership has created some issues as PMD users share a range of infrastructure with other existing users. In particular, safety concerns have been raised by pedestrians as they interact with faster moving PMDs on footpaths.

In response to these safety concerns, I have taken a broad and consultative approach to planning how to improve the safety of PMDs in Queensland. In late-2021, I convened a roundtable discussion that brought together all relevant stakeholders, including PMD industry and users, pedestrian and disability advocates, health and trauma specialists, police, state and local government as well as cyclist and motorist organisations. This event gave everyone a chance to share their views about the relevant safety issues and how best to resolve them.

Since the roundtable discussion, I have considered all relevant views and submissions and, in conjunction with stakeholders, worked to develop discrete and tangible actions to improve PMD safety in Queensland. This action plan represents the outcome of this work. The action plan sets out a range of actions across the short, medium and longer term. While the Queensland Government has a key role to play in these reforms, improving PMD safety is a collective effort and I look forward to working with stakeholders across industry, the disability sector and all levels of government to deliver on these actions.

These actions present a balanced and measured approach to improving the safety of PMDs in Queensland. They will also continue to evolve the best practice model Queensland first developed and it is my hope that, in time, other jurisdictions look to adopt a similar approach to achieve greater national consistency.

PMDs have an emerging and important place in the broader mobility ecosystem, particularly as Brisbane looks forward to hosting the 2032 Olympic and Paralympic Games. However, PMDs and their users must build and operate within a social licence where they can coexist safely alongside all other path and road users.

Hon. Mark Bailey MP
Minister for Transport and Main Roads

Short-term actions
1 to 3 months

1. Establish a combined government and industry Personal Mobility Device Safety Reference Group.
2. Advocate for improvements to the safety of shared e-scooter use. For example:
   - improved helmet compliance through targeted education
   - increased use of geofencing to support no or slow riding in high-volume pedestrian areas and safe night precincts
   - increased use of lockouts at high-risk times and locations to reduce the risk associated with drink and drug riding
   - work with shared e-scooter providers to provide better education and training available to users as part of signing up for an account and commencing a trip.
3. Establish better data sharing amongst organisations. For example, between shared e-scooter providers and research organisations (such as the Jamieson Trauma Institute) to understand trends in injuries based on usage and the impacts of regulatory amendments.
4. Advocate for Commonwealth Government to review importation requirements for personal mobility devices to limit non-compliant devices being imported into Australia.
5. Establish an e-scooter parking working group to create clear rules for e-scooter parking to keep footpaths clear for pedestrians and people with disabilities.

Medium-term actions
3 to 6 months

6. Introduce a package of personal mobility device road rule amendments to:
   - set a reduced speed limit of 12km/h for use on footpaths
   - support efficient enforcement of devices that can travel faster than 25km/h
   - mandate warning devices
   - allow users to wear an approved bicycle or motorcycle helmet
   - increase penalties for dangerous behaviours.
7. Investigate greater scope to allow personal mobility devices to be used in on-road bike lanes.
8. Partner with the e-scooter parking working group to investigate solutions for improved parking.
9. Improve personal mobility device signage and road markings to ensure they are user friendly.
10. Develop a safety campaign to educate users on the road rules, safe parking and their responsibilities.
11. Partner with Queensland Police Service to schedule high-profile enforcement blitzes.
12. Develop materials for police officers to support awareness and enforcement of the rules.
13. Advocate for all levels of government to accelerate the roll out of physically separated bike path infrastructure.
14. Develop educational resources to increase awareness of personal mobility device rules and support safer riding behaviours.
15. Partner with industry to provide educational resources for new users at point of sale.

Long-term actions
6 to 12 months

16. Investigate options to crack down on drink and drug riding. For example:
    - random breath and saliva testing
    - blood alcohol concentration limits
    - appropriate penalties.
17. Partner with a research organisation to investigate best practice personal mobility device specifications. For example:
    - the effectiveness of noise generators
    - safety implications of increasing the maximum dimensions
    - ways of improving the visibility of devices and users.
18. Advocate for the National Transport Commission to adopt the Queensland regulatory changes into the Australian Road Rules model law to support national consistency.

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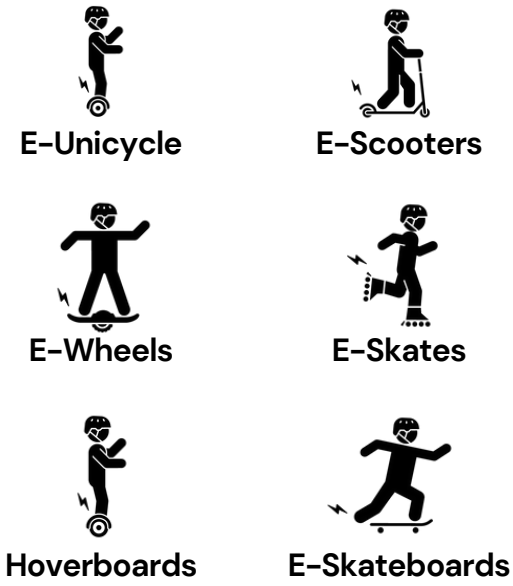
E-Rideables in WA

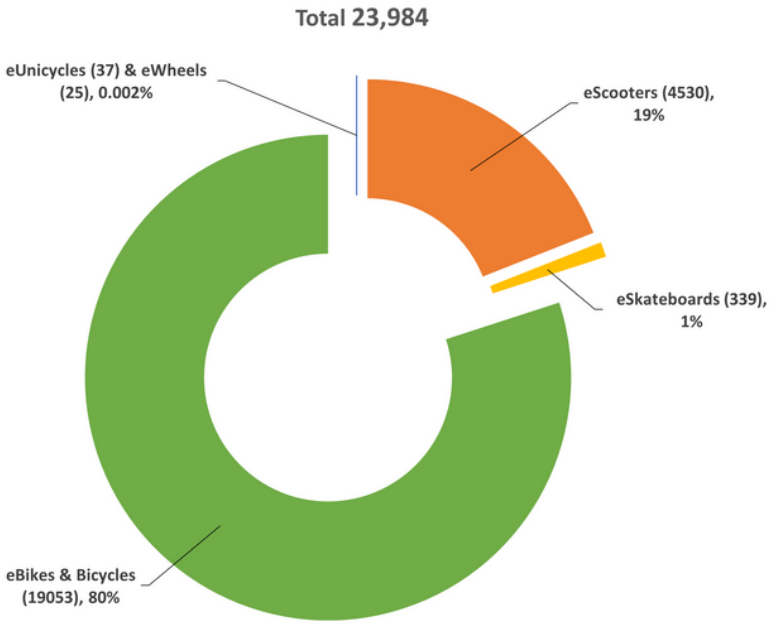
Background

eRideables, and eScooters in particular, have raised safety concerns since arriving in the US in 2017, and in Australia in 2018. These concerns led to partial or complete bans on eScooter use on public infrastructure in some jurisdictions. In Western Australia (WA), eRideable regulations, in effect from December 4, 2021, specify device characteristics, speed limits, rider age, and helmet requirements. This observational study investigated compliance with these regulations and safety behaviors among eRiders in Perth. Cyclists, which included people riding bikes and ebikes, were also observed for comparison purposes. eRiders refer to users of eScooters, eSkateboards, eWheels, eUnicycles, eSkates, eBikes and hoverboards.

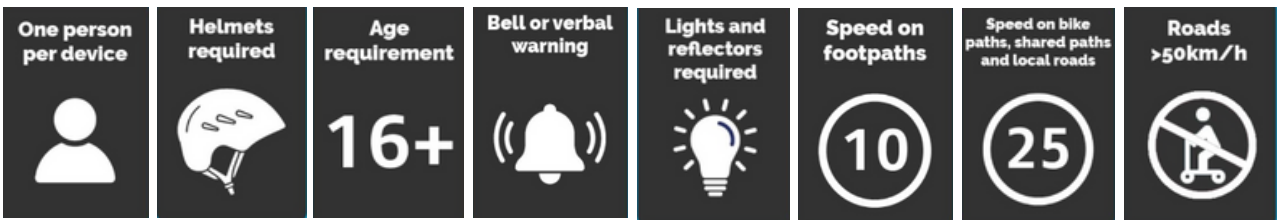
eRideable Devices



Observations



Regulations



E-Rideables in WA

Study Aims

To document compliance with the regulations and safety-relevant behaviours of eRiders in Perth.

Areas of Interest

eRider Observations

Helmet Compliance

Inappropriate Manoeuvres

Speeding Behaviours

Riding Illegally

eRider Observations

- On average, 2.25% of all eRiders were judged to be younger than 16 years old
- The proportion of eRiders carrying a passenger averaged 3.25%
- Out of the observed eScooters and eSkateboards, approximately 3.5% were carrying a passenger, whereas around 2.7% of the observed eUnicycles had a passenger on board
- None of the eRiders on eWheels, Hoverboards and eSkates were observed carrying a passenger

E-Rideables in WA

Helmet Compliance

- Overall, 90% of all eRiders were helmeted
- Helmet non-use was substantially higher for hire device eRiders compared to privately owned device eRiders; and higher on weekends, compared to weekdays
- Female eRiders exhibited lower helmet use compared to male eRiders
- eRiders who travelled on bicycle/shared paths or the road exhibited lower helmet use compared to eRiders who used their devices on footpaths

***All eRideable categories (except eUnicycles) showed lower helmet compliance compared to bicycles.**

Helmet non-compliance rates of riders by each eRideable type compared to cyclists:	
 E-SCOOTERS	1.4x
 E-WHEELS	3.5x
 E-SKATEBOARDS	9x
Helmet non-compliance rates by device ownership:	
Hire compared to Private	4.5x

E-Rideables in WA

Riding Illegally on the Road

- Overall, about 4.6% of eRiders were observed riding illegally on the road
- Around 4.4% of eScooter riders, 7.5% of eSkateboard riders and 33.3% of eUnicycles were observed riding illegally on the road
- No eWheels, Hoverboards or eSkates were observed riding illegally on the road

Speeding Behaviour

- Approximately 10% of eRiders were judged to be travelling too fast for the conditions
- Occurences of speeding behaviour was higher for eScooter riders and eSkateboards riders compared to cyclists
- eRiders aged under 16 were less likely to be observed speeding than eRiders who were older than 16 years old
- Speeding was less frequently observed on bicycle/shared paths and roads compared to footpaths

Inappropriate Manoeuvres

- The rate of inappropriate manoeuvres on eRideables overall was 2.5%
- Inappropriate manoeuvres were higher for eScooters and eSkateboards compared to bicycles
- Hire device eRiders exhibited a higher rate of inappropriate manoeuvres compared to privately owned device eRiders
- Female eRiders showed fewer inappropriate manoeuvres compared to male eRiders
- eRiders on bicycle/shared paths or the footpath also showed fewer inappropriate manoeuvres compared to eRiders who rode on the road
- Inappropriate manoeuvres were significantly less on weekends compared to weekdays

Conclusions

- The majority of eRiders were observed to be compliant with regulations
- eRiders consistently exhibited more risky behaviour than cyclists
- Riders of hire devices were found to exhibit more risky behaviour than riders of private devices

GOVERNMENT OF WESTERN AUSTRALIA

ROAD SAFETY COMMISSION

Report on the eRideables Community Connect Survey

Conducted September - October 2022

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Executive Summary

The Road Safety Commission conducted a survey about eRideables using its community engagement platform in September and October 2022. A total of 1199 valid responses from WA residents were received.

61% of respondents identified as male, 36% as female, and less than 1% as non-binary. Three percent did not respond or indicated they would prefer not to say. Slightly more than half of the respondents were aged between 36 and 55 years old. The overwhelming majority of respondents were from the Perth metropolitan area.

Most respondents (61%) identified as more than one type of road user. The greatest proportion identified as drivers or riders of motor vehicles (65%), followed by pedestrians (61%), eRideable users (51%), and cyclists (33%).[i]

Respondents were most supportive of eRideables being used on bike paths, followed by bike lanes on low-speed roads and shared paths. They were least supportive of their use on footpaths, followed by bike lanes on higher speed roads. Compared to people who didn't identify as eRideable users, eRideable users showed a higher level of support for eRideable use on all types of infrastructure. However, the pattern of support was very similar for both groups.

When asked about the appropriate speed limit on different types of infrastructure, the most popular responses aligned with the actual limit on both footpaths and shared paths. Females and eRideable non-users were more likely to prefer lower speeds than males and eRideable users, particularly on footpaths and shared paths.

Most respondents were not in favour of reducing the age limit for eRideable use, imposing additional requirements for people riding eRideables at night or increasing the mass and/or dimension limits.

Of the 1199 survey respondents, 753 (63%) said they had ridden an eRideable in Western Australia at least once. Of the respondents who had ever ridden an eRideable, three in four had ridden an eRideable they owned, while one in four had ridden a hired device and a similar number had ridden a borrowed eRideable.[ii] Privately owned devices had most often been purchased in-store or from an online Australian retailer.

Of the respondents who reported having ridden an eRideable in WA, less than one in eight indicated that they had been injured while riding and less than one third of those required medical treatment. More than half of the incidents occurred on shared paths or footpaths and the vast majority (86%) did not involve any other road or path users.

Two fifths of survey respondents reported having experienced a near miss with an eRideable. However, only 3% reported having been injured in an incident with an eRideable.

A total of 2617 free text answers were received and analysed, including 516 comments submitted in response to the final question asking for further comments or suggestions. The comments covered a broad range of topics and sentiments. A small number of people took the opportunity to call for all eRideables to be banned, while an approximately equal number of people criticised the government for being too strict in its approach. The vast majority of commenters fell somewhere in between, with many offering suggestions for improving infrastructure or rules and others detailing the way eRideables have improved their lives.

[i] Sum of percentages exceeds 100% as respondents were permitted to select more than one response.
[ii] 71% had ridden device they owned, 24% had ridden a hired eRideable, and 27% had ridden a borrowed device.

Background

The Road Safety Commission conducted a survey about eRideables using its community engagement platform, Community Connect. The survey, which was open to all WA residents, opened on 1 September and closed on 20 October 2022. A total of 1199 valid responses were received during the survey period.

The survey had a total of 35 questions. However, many questions were contingent on answers to previous questions, so most respondents were presented with fewer than 35 questions.[iii]

The survey collected information about respondents' views on the eRideable rules that came into effect in December 2021 and, where relevant, their experience using eRideables and/or interaction with other people using them.

In relation to the eRideable rules, the survey sought respondents' views on:

- where eRideables should be ridden,
- how fast they should be permitted to travel,
- how speed limits should be set,
- whether the limits for rider age and device size and weight are appropriate, and
- whether the requirements for lights, reflectors and audible warnings are sufficient.

Respondents were asked whether they had ever ridden an eRideable in WA. People who had ridden were asked about where they had sourced the device and about any injuries they had experienced while riding.

All respondents were asked whether they had been injured as a pedestrian in an incident involving an eRideable, as well as whether they had experienced a near miss with an eRideable.

The final question invited respondents to make comments or suggestions. 516 comments were received in response to the final question, along with a further 2101 comments. All free text answers were read and thematic analysis conducted.

The results of the survey are summarised and presented in visual form in the following section, detailed results are included in the tables at the end of the report.

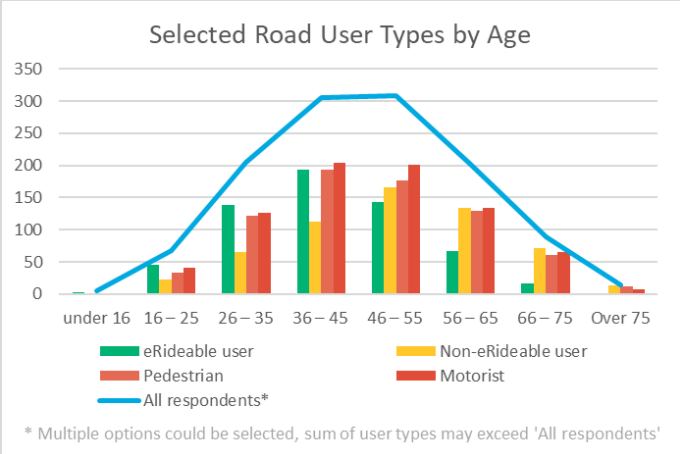
Summary Results

1. Demography

Q 1: What is your age group?

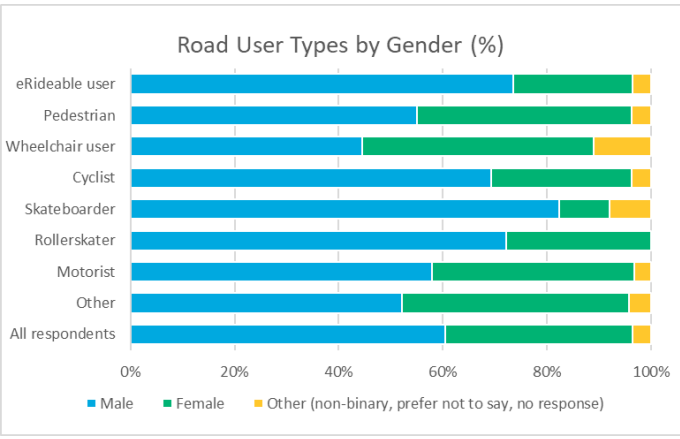
Respondents ranged in age from less than 16 years old to more than 75 years old. The majority of respondents (51%) were aged between 36 and 55 years old.

The age distribution was similar for various different road user types. However, younger respondents were slightly more likely to identify as eRideable users, while older respondents were slightly less likely to do so. Despite this, more than a third (37%) of the respondents who identified as eRideable users were over the age of 45 and more than two thirds (69%) were over the age of 35.



Q 2: Gender

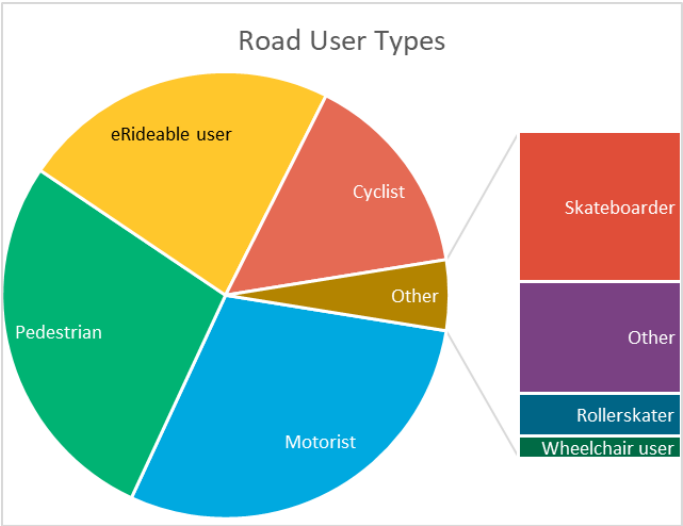
Of the 1199 survey respondents, 60% identified as male, 36% as female and less than 1% as non-binary. Three percent either did not respond to the question or indicated that they prefer not to say.



Q 3: From what perspective are you answering these questions? (tick all that apply)

Respondents most commonly identified as a driver or rider of a motor vehicle (65%), followed by pedestrian (61%) and eRideable user (51%). Most respondents (61%) identified as more than one type of road user.

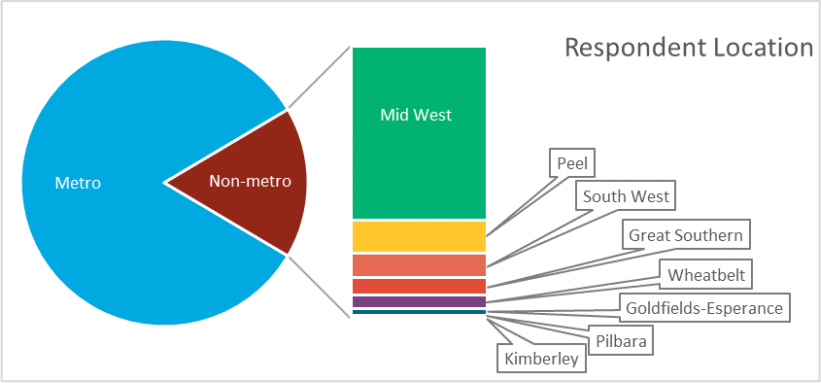
Male respondents were almost twice as likely to identify as eRideable users compared to females (62% of males, 32% of females). There was less disparity between males and females for other key categories, though females were more likely to identify as motor vehicle drivers (70% v 62%) and/or pedestrians (70% v 55%) than males, while males were more likely to identify as cyclists than females (38% v 24%).



A small number of respondents (46, 4%) identified their perspective as ‘other’. Most of these indicated they were answering from the perspective of an organisation or role, as parents of eRideable users, as past or prospective eRideable users, or specified a perspective already covered within an existing category (e.g. motorcyclist, runner).

Q 4: What is your postcode?

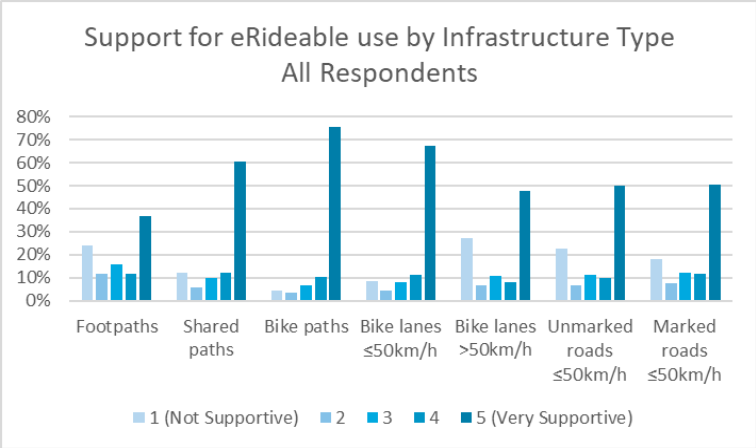
The majority of respondents provided postcodes from the Perth Metropolitan area. (This question was mandatory and primarily used to identify and exclude non-WA residents.)



Most non-metro respondents were from the Mid-West (11%), followed by Peel (2%), South West (2%), Great Southern (1%) and Wheatbelt (1%). The Goldfields-Esperance, Pilbara and Kimberley regions each accounted for less than 1% of survey respondents. There were no respondents from the Gascoyne region.

2. Perspectives on eRideable Use

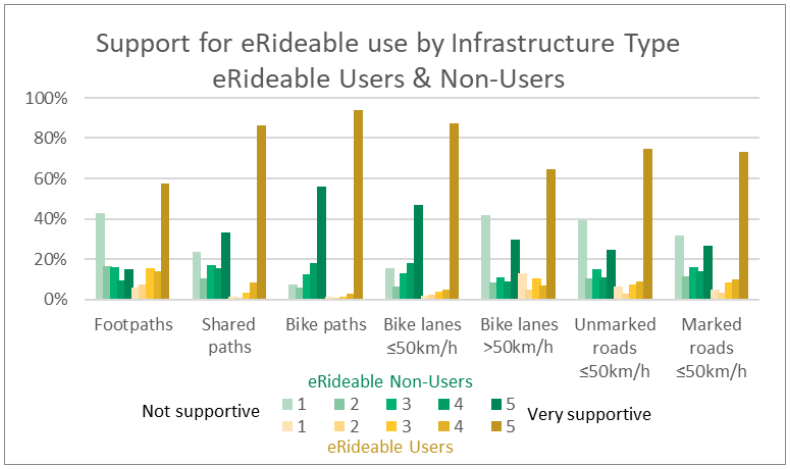
Q 5: How supportive are you of eRideables being permitted for use in the following areas?



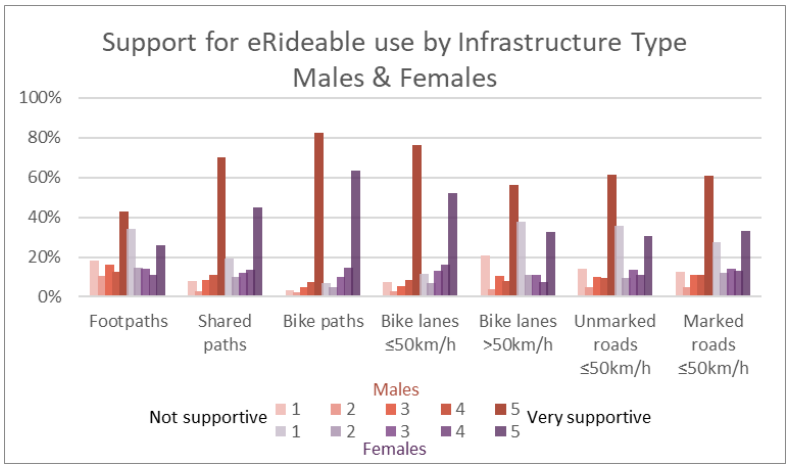
Respondents were overwhelmingly supportive of eRideable use on bike paths (86% positive responses, 8% negative[iv]) and strongly supportive of eRideable use on bike lanes with speeds ≤ 50km/h (79% positive, 13% negative) and shared paths (72% positive, 18% negative). The lowest level of support was shown for eRideable use on footpaths (49% positive, 36% negative), followed by bike lanes >50km/h (56% positive, 34% negative). Support for use on unmarked and marked roads ≤50km/h was roughly similar (60% positive, 29% negative and 62% positive, 26% negative, respectively).[v]

Respondents were more likely to indicate they were 'very supportive' of ERD use on all types of infrastructure (22% of respondents) than to be 'not supportive' of ERD use on any type of infrastructure (2% of respondents).

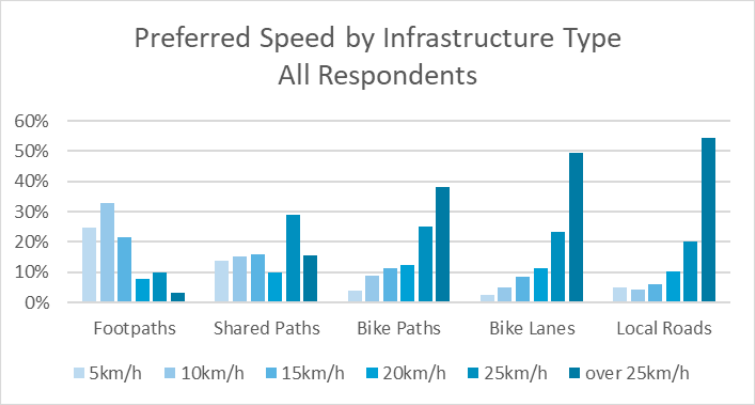
Although some similarities are evident in patterns of support between eRideable users and non-users, people who identified as eRideable users were more likely to be supportive of eRideable use and less likely to be unsupportive of eRideable use compared to non-users across all infrastructure types. Differences were most marked in relation to footpaths, with eRideable non-users more than twice as likely to be unsupportive than supportive (25% negative, 16% neutral, 60% positive), while eRideable users remained overwhelmingly supportive of eRideable use on footpaths (72% positive, 15% neutral, 13% negative).

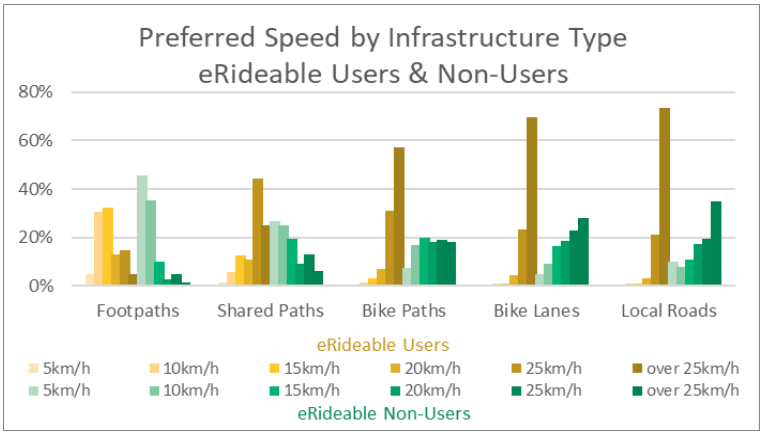


Likewise, males and females showed similar but not identical patterns of support. Females showed similar patterns of support to eRideable non-users while males showed a slightly less pronounced version of the patterns demonstrated by eRideable users, perhaps reflective of the fact that males were almost twice as likely to identify as eRideable users compared to females.



Q 6: With the various travel speeds of other road and path users in mind, what do you think is a reasonable speed limit for eRideables in the following areas?





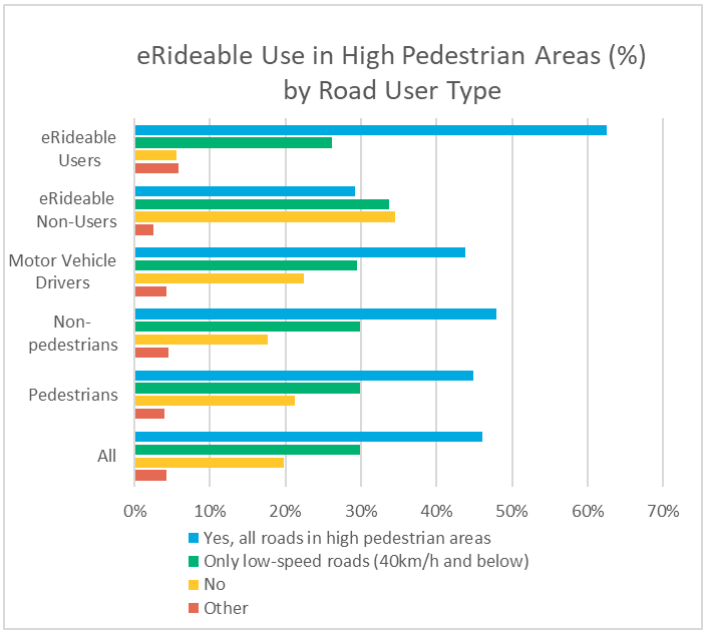
Approximately half of survey respondents supported eRideables being permitted to travel at speeds greater than 25km/h on roads and bike lanes (54% and 49%, respectively).

The preferred speed limit for bike paths was also greater than 25km/h (38% of respondents), while the preferred speed limit for shared paths and footpaths matched the current speed limits of 25km/h (29%) and 10km/h (33%), respectively.

Unsurprisingly, eRideable users were more likely to prefer higher speed on each infrastructure type than non-users. Despite this, both groups showed a similar pattern in their responses with higher speeds preferred on local roads and bike lanes and lower speeds preferred on footpaths. The notable exception is shared paths, where the most popular responses among eRideable non-users were 5km/h and 10km/h (27% and 25%, respectively) while eRideable users preferred 25km/h or greater (44% and 25%, respectively). This may, in part, reflect different understandings of the nature of shared paths.

Q 7: In areas with high pedestrian activity such as suburban main streets and the CBD, should eRideables be allowed to travel on roads?

More than three quarters of respondents (76%) supported eRideables being permitted on roads in high pedestrian areas. Of those, 39% said they should be limited to roads with speed limits of 40km/h and below with the remainder suggesting they be permitted on all roads in high pedestrian areas. A minority of respondents (20%) said that eRideables should NOT be allowed on any roads in high pedestrian areas.

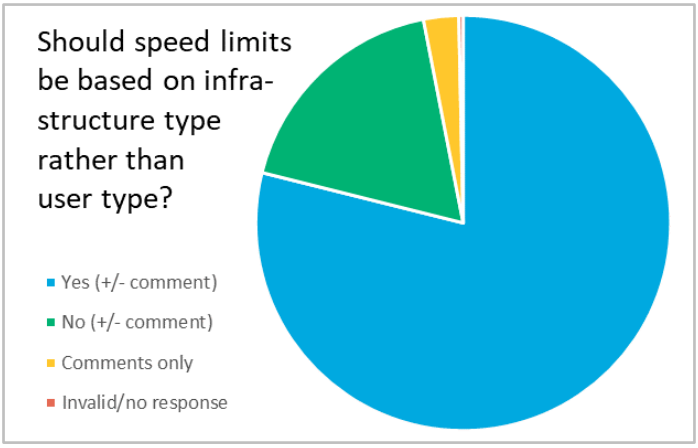


eRideable non-users showed a roughly even split between all roads, only low-speed roads, and no roads (29%, 34%, 34%, respectively) while eRideable users showed a strong preference for all roads (62% compared to 26% low speed roads and 6% no roads). Other groups (motor

vehicle drivers, pedestrians, and people who didn't identify as pedestrians) showed preferences similar to the overall pattern.

Only a small proportion of respondents commented on question 7. Commenters most frequently offered more limited situations in which eRideables should be allowed to travel on roads (e.g. only if there is a bike lane, only if there is no path), suggested speed limits that should apply to eRideables on roads or paths, proposed a different threshold (most often roads 50km/h or below), or made comments about the inadequacy of existing infrastructure.

Q 8: On paths, speed restrictions are most often based on mode of travel: different limits may apply to motorised scooters, electric bikes, motorised wheelchairs and eRideables. Speed limits are rarely imposed on cyclists or pedestrians. On roads, speed restrictions are most often based on the nature of the infrastructure (e.g. freeway, highway, main road, residential street) and apply to anyone travelling on that road. Do you think speed restrictions on paths should be based on infrastructure (e.g. foot path, bike path, shared path) and apply to all users regardless of mode of travel?



More than three quarters of survey respondents (79%) thought that speed restrictions on paths should be based on infrastructure and should apply to all path users regardless of mode of travel. However, comments suggest that many respondents understood the question to only refer to eRideables, powered devices or wheeled devices.

188 respondents made comments in response to question 8. Almost a third of commenters (30%) mentioned other bases for setting speed limits (in addition to, or instead of, infrastructure type) – most often path congestion/user density, conditions, device power or power source, device weight, visibility, rider age, wheel size, and stopping ability. Commenters also:

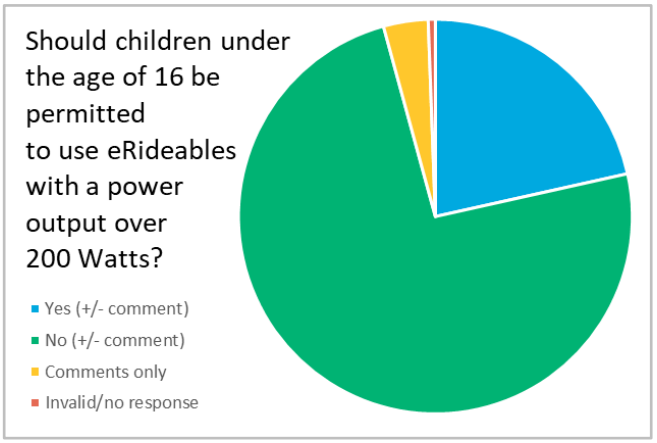
- called for better infrastructure including separation of pedestrians, riders, and motor vehicles;
- said that speeds should be limited near pedestrians/ other path users;
- recommended increasing the speed limits for eRideables or removing restrictions altogether;
- said that eRideables should be banned entirely, or prohibited on certain types of infrastructure (footpaths, paths, roads); and
- complained about rider behaviour and/or lack of enforcement.

Some respondents supported the idea on the basis of clarity while others opposed it on the basis of practicality or unintended consequences. Many commenters pointed to differences between bikes and eRideables, as well as differences in the skills, attitudes and behaviour of their riders. There were also a lot of comments about reducing/removing the restrictions on eRideable speeds rather than applying existing restrictions to all path users.

Q 9: Children under the age of 16 are currently not permitted to use electric bikes or eRideables because their incomplete cognitive development means they are less capable of risk assessment and informed decision making. However, children under the age of 16 are permitted to use low motorised scooters (less than 200 Watts) that travel no more than 10 km/h. Do you believe children under the age of 16 should be permitted to use eRideables with a power output over 200 Watts?

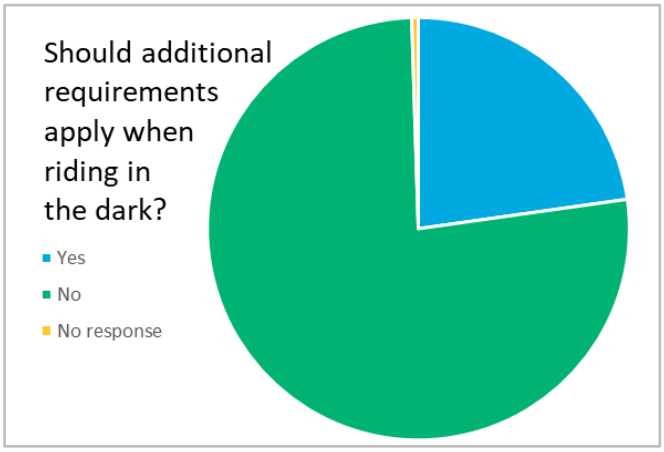
Most respondents didn't support children under 16 being permitted to use eRideables (74% of survey respondents not supportive).

About 16% of respondents made comments in response to the question. Comments clustered around issues with children already using devices dangerously, parental supervision, speed restrictions, training and certification/licencing, need for enforcement, role of parents, and speed being more relevant than power.



Q 10: When riding in the dark eRideable users must display:
1. A flashing or steady white light visible from the front
2. A flashing or steady red light visible from the rear
3. A red reflector visible from the rear
4. Two yellow side reflectors.
Should additional requirements apply?

Most respondents (77%) did not believe that additional requirements should be imposed on eRideable users at night.



Of those people who said they did believe additional requirements should apply, more than a quarter (28%) specified requirements that already apply (e.g. helmets, bells). Other common suggestions included bright, light or hi-vis clothing (24%), reflective clothing (13%) and lights and/or reflectors on helmets (11%).

Respondents also frequently suggested that eRiders be required to use indicators, though it was not always clear whether they believed these should be used only at night.

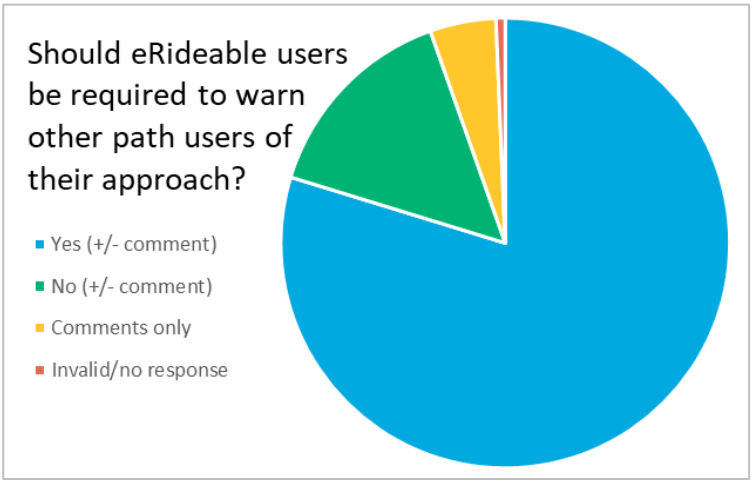
Other respondents made suggestions to address issues with the brightness, direction and/or placement of lights and reflectors.

A number of comments were also made regarding flashing lights, with some respondents seeing them as necessary for rider safety and others seeing them as a hazard to other road users.

Q 11: eRideables are required to have an audible warning device (bell, horn, or similar) fitted if practical. However, there are no rules about when warning devices should be used. Should eRideable users be required to warn other path users of their approach (using their warning device or voice)?

80% of survey respondents said that eRideable users should be required to warn other path users of their approach using a bell or other audible warning.

One in five respondents (21%) made comments – generally in addition to answering yes or no.



Many comments (34%) referred to cyclists, suggesting that:

- the rule should be the same as it is for cyclists,
- the requirement to warn others should also apply to cyclists,
- cyclists never use their bells, or
- cyclists always use their bells.

The second most popular topic for comment was pedestrian behaviour in response to warnings (27%). This included the need for pedestrians to respond appropriately when a warning is given, the risk of inadvertently frightening pedestrians (resulting in them jumping into the rider's path), the number of pedestrians who wear headphones/earphones and therefore can't hear warnings, and the existence of pedestrians who respond aggressively when a warning is given.

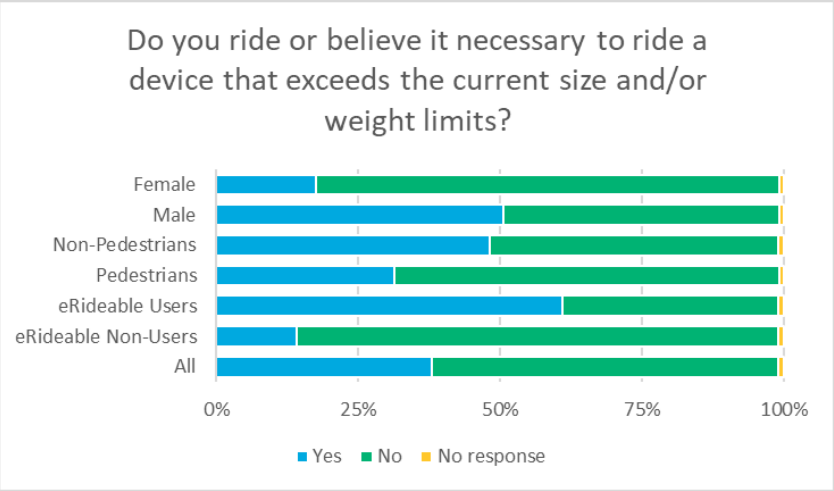
Courtesy, common sense and discretion were also frequently mentioned. These comments suggest that there were differing understandings of the question. Almost a third of respondents who commented that common sense and/or discretion should apply also selected 'yes' (i.e. eRideable users should be *required* to warn other path users of their approach) while slightly more (42%) said 'no'. One fifth of respondents said that the need to provide a warning depends on circumstances (typically in conjunction with 'no').

Some commenters (16%) said that slowing down before passing and/or maintaining a safe passing distance are more important that providing an audible warning. Other comments related to:

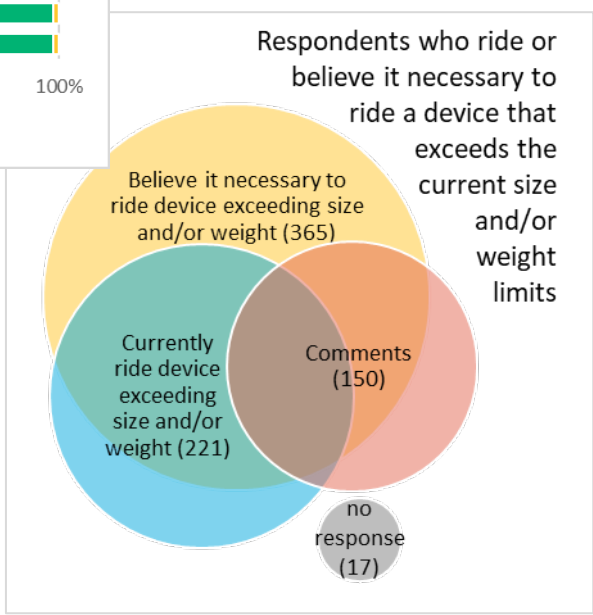
- the (perceived) purpose of ringing your bell – whether it is intended to alert other path users or to ask/tell them to move,
- the need for better education for pedestrians,
- that audible warnings should be mandated/used in other circumstances (e.g. blind corners),
- that devices should be required to play a continuous sound,
- that there should be a minimum distance/period before overtaking,
- courteous people already give warnings, changing the law won't change behaviour of the people who don't care and won't improve safety,
- enforcement,
- whether warnings should be given only when approaching from behind,
- use in busy areas, impact on noise pollution,
- efficacy of different warning devices (bell v voice v horn),
- infrastructure (including no eRiders on busy/footpaths), and
- hearing impaired.

Q 12: Privately owned eRideables are permitted to weigh a maximum of 25 kg and are not allowed to be more than 125 cm long, 70 cm wide or 135 cm tall. Do you ride or believe it necessary to ride device that exceeds the current size and/or weight limits?

More than half of survey respondents (61%) indicated that they don't ride, or believe it is necessary to ride devices that exceed the current mass and/or dimension limits.



Perhaps unsurprisingly, people who didn't identify as eRideable users were least likely to say they ride or believe it necessary to ride a device that exceeds the current limits (14% yes, 18% no) and eRideable users were most likely to say yes to Q 12 (61% yes, 38% no).



Slightly more than half of the males who responded to the question answered in the affirmative (50% yes, 49% no, 1% no response). Conversely, females, pedestrians and respondents who didn't identify as pedestrians were all more likely to respond in the negative than the affirmative.

↳ Q 12.1: Please select all that apply

Almost half (49%) of the 455 people who answered yes to Q 12 (Do you ride or believe it necessary to ride a device that exceeds the current size and/or weight limits), admitted that they already ride a device that exceeds the mass and/or dimension limits set by the Road Traffic Code. Two in five (40%) indicated that they believe it is necessary to ride such a device but do not currently do so. Of the people presented with Q 12.1, almost 10% indicated that they ride a device exceeding the size/weight limit despite not believing it necessary to do so, made comments only (7%) or did not respond to the question (4%).

Respondents were most concerned about the weight limit (77% of people presented with Q 12.1 said they believe it necessary to ride a device that weighs more than 25kg, while 47% reported that they already do so). This was followed by device length, then height. Least concern was expressed about the limit on width.

↳ Q 12.2: Why?

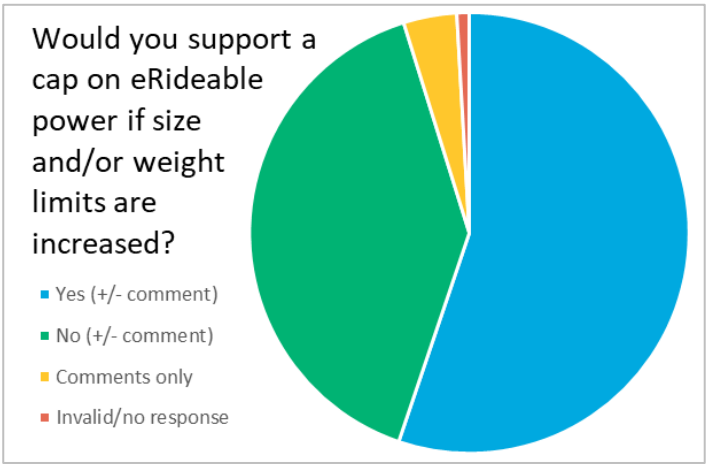
COUNT	
comments (Q12.2)	363
comments from Q 12.1	150
total comments	513
commenters	388

Comments in response to questions 12.1 and 12.2[vi] most often related to rider size (37%), range (31%), battery capacity (27%), and safety considerations including stability, brakes, suspension, and tyre/wheel size (26%). Respondents also mentioned durability/quality of devices, hill climbing, ergonomics or comfort, speed limits, and power.

As with other questions, a number of respondents (13%) made comparisons with bikes, with comments about bikes not being subject to the same mass/dimension limits, or asking whether bikes that exceed the eRideable mass and/or dimension limits are illegal.

A handful of respondents expressed the opinion that there shouldn't be mass or dimension limits, and that the rules should only limit speed.

Q 13: If the size and/or weight limits are increased, would you support the introduction of a cap on the power output of eRideables?



More than half of respondents (56%) indicated that they would support a cap on eRideable power output if the size and/or weight limits were increased while two in five (40%) said they would not support a cap. A small number of respondents (4%) made comments without indicating support or not.

Most people (72%) who ride or believe it necessary to ride a device that exceeds the current size/weight limit (Q 12) wouldn't support a cap on power if the size and/or weight limits are increased. Most people (76%) who don't ride or believe it necessary to ride a larger or heavier device (at Q 12) said they would support a cap on power if size/weight limits are increased (see Table 13, below).

		Response to Q 12			
		Yes		No	
Response to Q 13	Yes (+/- comment)	119	28%	540	76%
	No (+/- comment)	306	72%	169	24%
	Total	425	100%	709	100%

Table 13Support for cap on power (Q 13) X Support for increasing size/weight limit (Q 12)

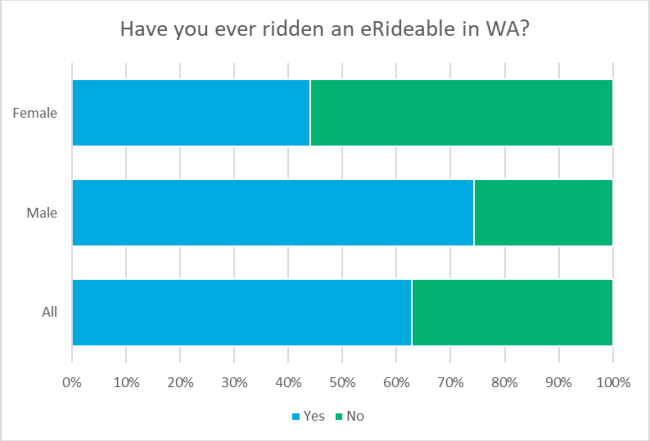
Almost a quarter of respondents (23%) who answered Q 13 made comments. A quarter of the commenters (25%) said that power restriction is unnecessary or unimportant if speed is restricted (either by the device being speed limited, or the rider being required to adhere to speed limits). One in five commenters (19%) referred to rider characteristics – particularly rider size and/or weight (14%) – saying that limiting power would disadvantage larger heavier riders. Other frequent topics for comments were:

- lack of power caps for cars, motorcycles and other vehicles (17%)
- device characteristics such as weight, acceleration/braking and size (16%)
- enforcement (14%)
- hills (13%)
- rider behaviour (10%)
- the need for licencing and/or insurance, particularly if size/weight limits are increased (10%).

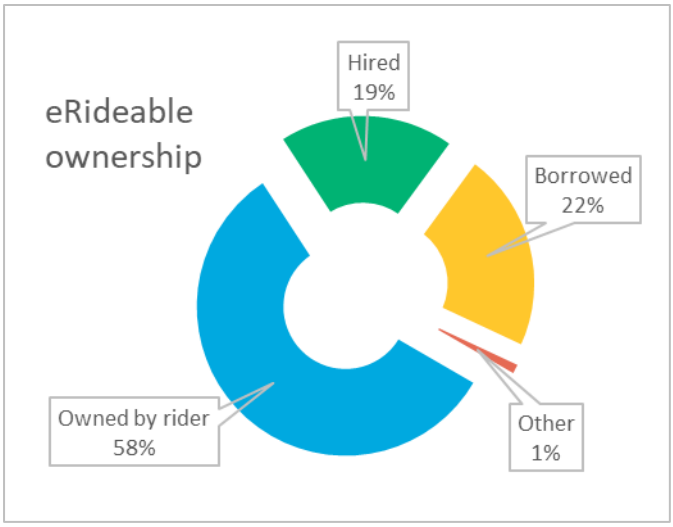
3. eRideable Users

Q 14: Have you ever ridden an eRideable in WA?

Most survey respondents (63%) reported having ridden an eRideable in WA at least once. Male respondents were much more likely to report having ridden an eRideable than female respondents (74% of male survey respondents answered 'yes' to Q 14, compared to 44% of female survey respondents).



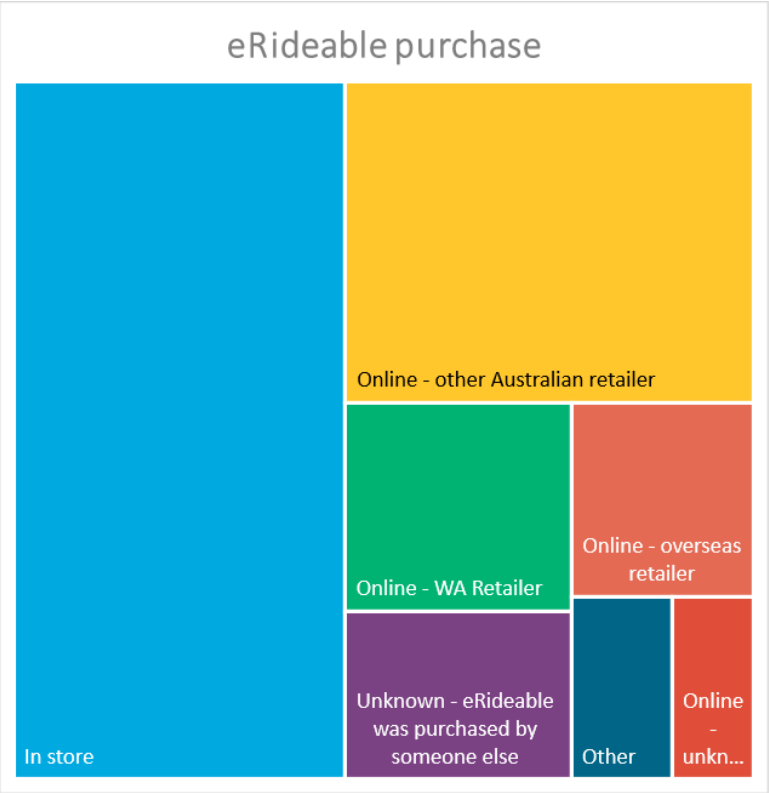
↳ Q 14.1: Was the eRideable...



At the time the survey was conducted, most people (71%) who reported having ridden an eRideable in WA owned the eRideable. More people had ridden a borrowed eRideable than a hired one (27% and 24%, respectively).

Only a small number of respondents (13, 2%) selected 'other' and provided details. Of those, most provided a response already covered in the options or not relevant to the survey (e.g. reference to eBike or Segway). Valid responses came from people who used them in the course of their employment – either as transport provided by their employer or conducting sale and/or repair – or had test-ridden one when seeking to purchase.

↳ Q 14.2: Do you know where the eRideable was purchased?



Approximately three quarters (75%) of respondents to Q 14.2 reported knowing where the device had been purchased. Of those:

- the vast majority (94%) had ridden a device purchased from an Australian retailer
- two thirds (66%) had ridden an eRideable purchased from a WA retailer (either online or in store).

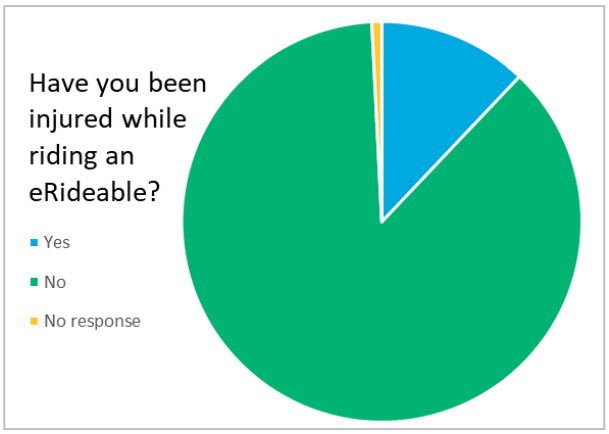
26 people (3% of respondents) selected 'other' and specified where the eRideable was purchased. Six of those commenters (23%) made irrelevant comments or reiterated/elaborated on selected options. Of the remainder, half (50%) indicated that they had purchased an eRideable second hand, two in five (40%) had purchased from gumtree or facebook marketplace and one in five (20%) had a custom or DIY device.

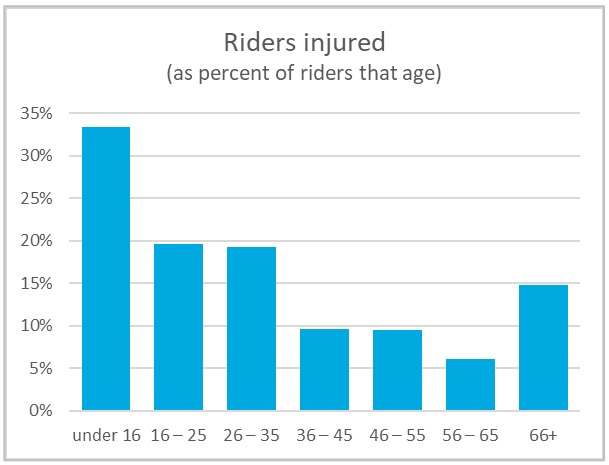
↳ Q 14.3: Have you been injured while riding an eRideable?

Of those people who reported having ridden an eRideable in WA, less than one in eight had been injured while doing so.

Male and female respondents were equally likely to report having been injured (65 males and 24 females reported injuries, representing 12% of males who answered the question and 13% of female question respondents).

Injury rates did differ between age groups, however, with older age groups less likely to report injuries than younger groups. One third of respondents under the age of 16 who reported having ridden an eRideable in WA also reported having been injured while doing so. The rate of injury for respondents between 16 and 35 years of age was less than 20% while less than 10% of riders aged between 36 and 55 reported having been injured. The fewest injuries were reported among the 56 to 65 age group (6%).

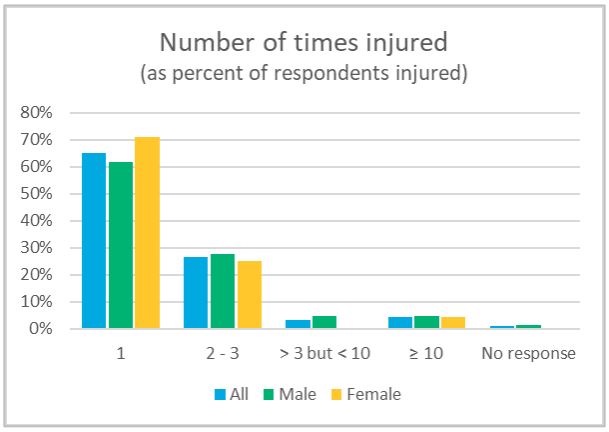




↳↳ Q 14.3.1: How many times?

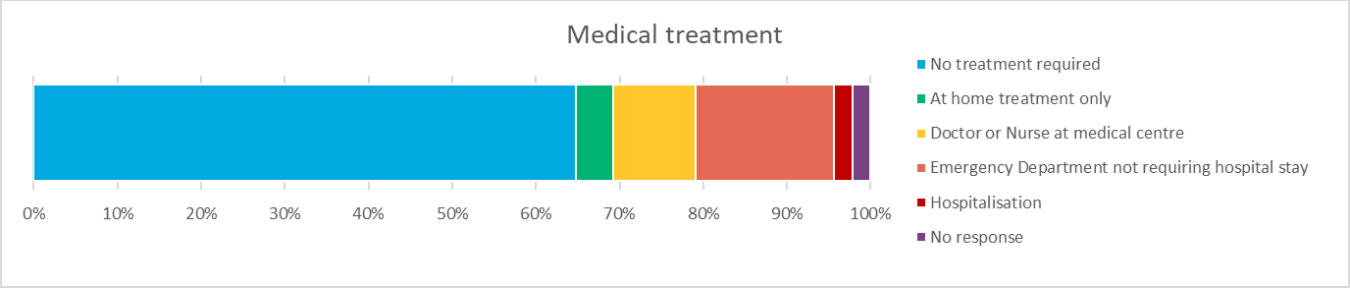
The majority of people who reported having been injured had only been injured once. Less than 8% reported being injured more than three times.

Males were more likely to report being injured more than once than females (38% of males v 29% of females who responded to Q 14.3.1 reported being injured more than once).

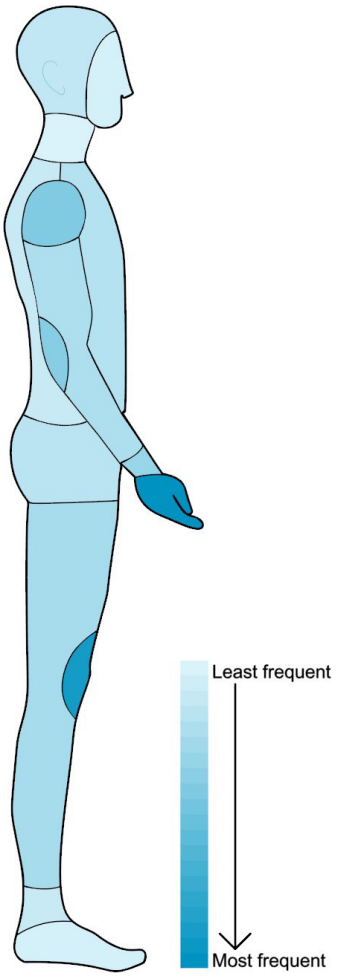


↳↳ Q 14.3.2: Did you require medical treatment?
↳↳↳ Q 14.3.2.1: Treatment Type

Most people (65%) who reported being injured when riding an eRideable did not require any medical treatment (at home or by a medical professional). Less than one third of people required professional medical treatment. Only 2% were hospitalised.



↳↳ Q 14.3.3: Which part of your body was injured?

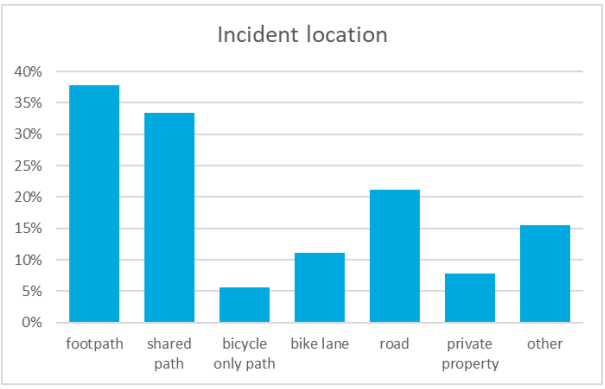


Hands and knees were the most commonly injured parts of the body, followed by shoulder, elbow, wrist and leg. Head and neck injuries were relatively rare, accounting for 4% and 2% of reported injuries, respectively. Most people only reported injuring one or two locations on their body.

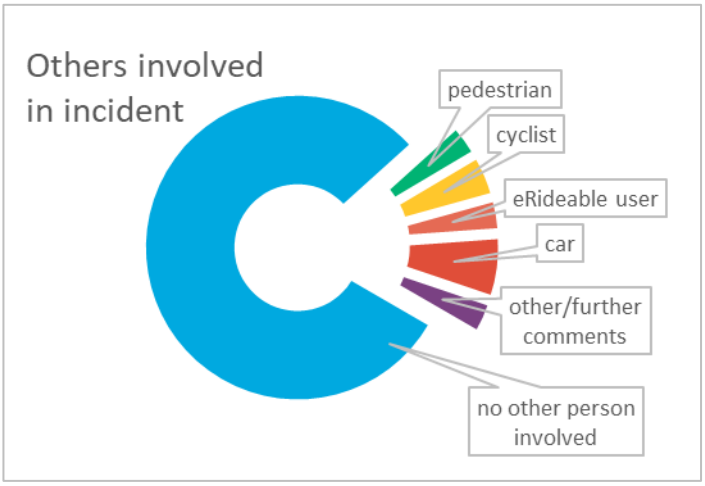
↳↳ Q 14.3.4: Where did the incident occur?

Of the people who reported being injured while riding an eRideable, most (69%) had been involved in an incident occurring on a path (footpath, shared path and/or bicycle only path), with incidents reported on footpaths slightly more frequently than on shared paths. One in five respondents reported being injured in an incident occurring on a road. A significant proportion (16%) of respondents selected 'other' location. Some of these specified locations within the available categories (e.g. 'dedicated green cycle lane on the road') while most others specified off-road use of some variety (e.g. bush tracks, ovals). A relatively small percentage of respondents reported injuries from incidents occurring on bike lanes or private property (11%, 8%, respectively).

Note: the frequency of incidents involving injury for each location should be interpreted with caution. Frequency of injury may not be a good measure of the relative safety of different infrastructure types. Instead, it may simply reflect the prevalence of an infrastructure type and the extent to which the infrastructure is used by eRiders.



↳↳ Q 14.3.5: Was any other road/path user involved in the incident?
↳↳↳ Q 14.3.5.1: Other person/s involved



Most incidents didn't involve another road or path user, only 16% of reported incidents involved another person.

In the small number of cases where another road or path user was involved in an incident injuring an eRideable user, most only involved one other type of road/path user (79%). Most often, respondents had been injured in an incident involving a car (43% of respondents) or a cyclist (29% of respondents). An equal number of people reported being injured in an incident involving another eRideable user as one involving a pedestrian (n=3, 21%).

Respondents who indicated that no other road or path user was involved in the incident were invited to tell us how the incident occurred. All people invited to explain did so. Almost all respondents mentioned one or more of the following factors in their explanation:

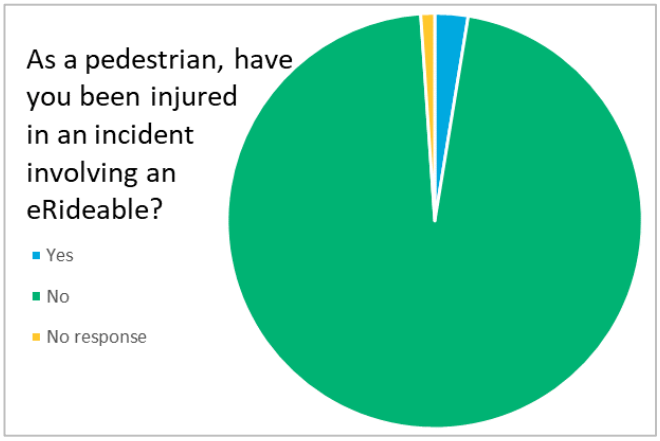
- operator error (41%) - included carelessness, inexperience, lack of skill, speed, overconfidence, inattention, and misjudgement
- road/path conditions (40%) – most frequently gravel/sand on path, followed by other debris, bumps, wet, cracks, roots, potholes and poor lighting
- obstructions (22%) – most often stationary objects (bollards, fences, branches, fences), also included animals and children
- manoeuvres (19%) – primarily transitioning between disparate surfaces (road, path, driveway, etc) or cornering
- equipment failure (10%)

Many explanations (42%) identified the type of device being ridden or provided details that allowed reasonable assumptions to be made. Among those, eScooters were most commonly identified (61% of identified devices) followed by eSkateboards (30%) and eUnicycles (9%). The survey did not collect data on the prevalence of different devices or incidents involving them. However, other sources – including the UWA study conducted shortly after the present survey – suggest that eScooters may account for more than 61% of eRideable traffic.[vii] The non-representative nature of the survey sample and lack of objective data does not allow any firm conclusions to be drawn as to the relative likelihood of injury based on device, but does suggest that more research may be warranted.

4. Interacting with eRideable Users

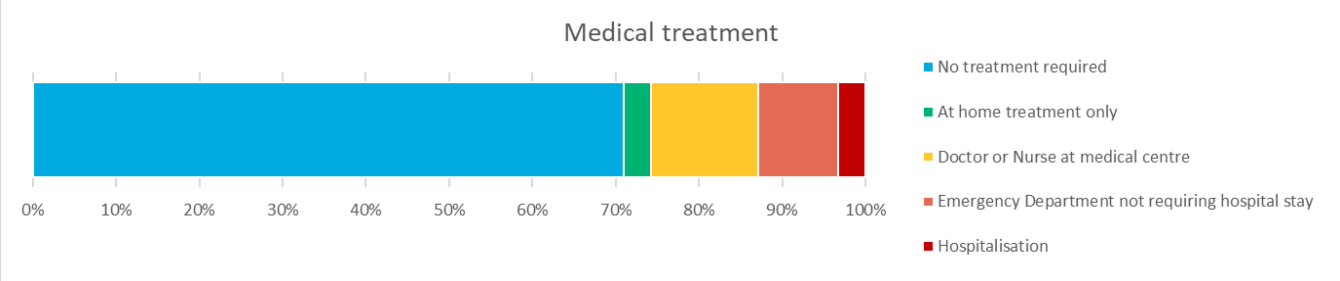
Q 15: As a pedestrian, have you been injured in an incident involving an eRideable?

The vast majority of respondents had not, as a pedestrian, been injured in an incident involving an eRideable (97%).



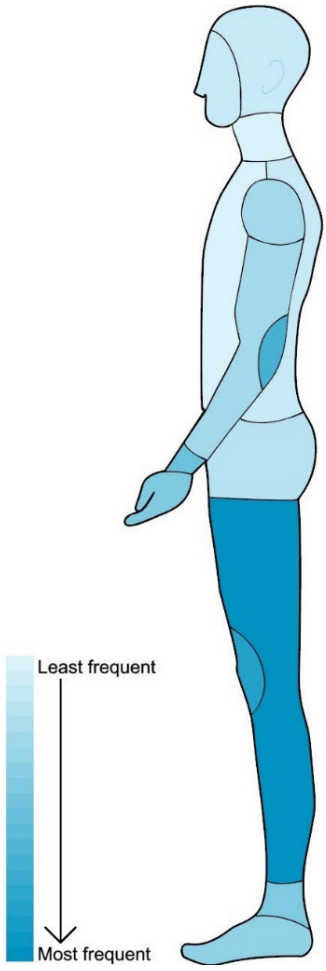
↳ Q 15.1: Did you require medical treatment?
↳↳ Q 15.1.1: Treatment Type

Of the small number of pedestrians who had been injured in an incident involving an eRideable, less than one third (29%) required medical treatment. Pedestrians who required medical treatment most commonly obtained treatment from a doctor or nurse at a medical centre. Only one person was hospitalised and 3 people received treatment at an emergency department (without requiring a hospital stay).

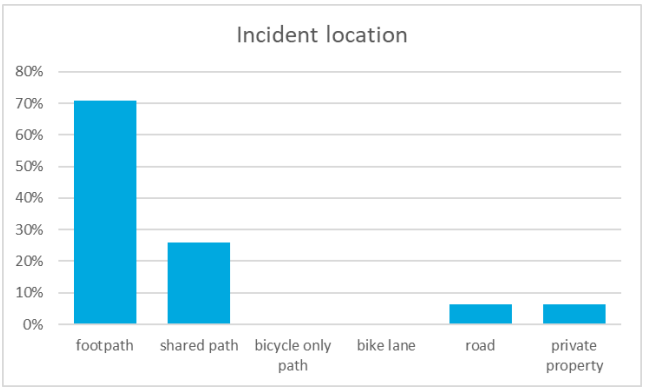


↳ Q 15.2: Which part of your body was injured?

The most common injuries reported by pedestrians were to the lower limb (leg, knee, ankle and/or foot)(69%). Approximately half the injured pedestrians reported injuries to their upper limb (arm, elbow, wrist and/or hand) and only ten percent reported injuries to the head, face and/or neck.

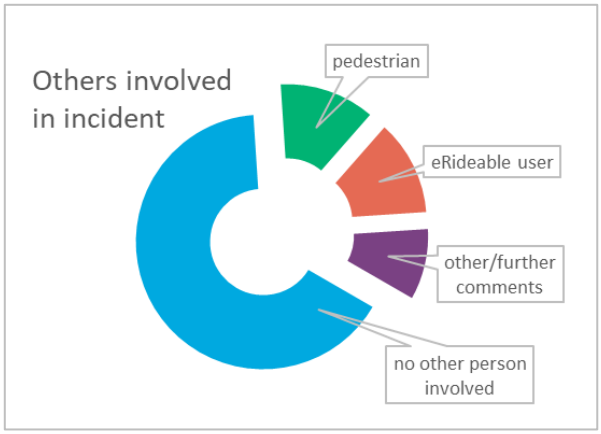


↳ Q 15.3: Where did the incident occur?



Of those pedestrians injured in an incident with an eRideable, most (90%) were injured in incidents that occurred on footpaths (71%) and/or shared paths (26%).

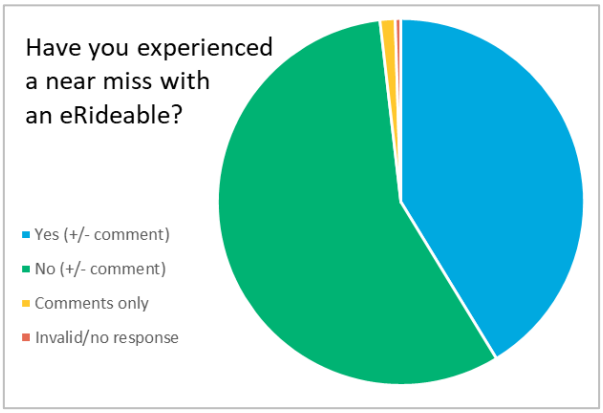
↳ Q 15.4: Was any other road/path user involved in the incident?
↳↳ Q 15.4.1: Other person/s involved (select all that apply)



Typically, no other road or path users were involved in such incidents (other than the pedestrian and eRideable user). On the rare occasion that a third party was involved in such an incident, it was usually another pedestrian or eRideable user. One respondent reported a dog also being involved in the incident.

Q 16: Have you experienced a near miss with an eRideable?

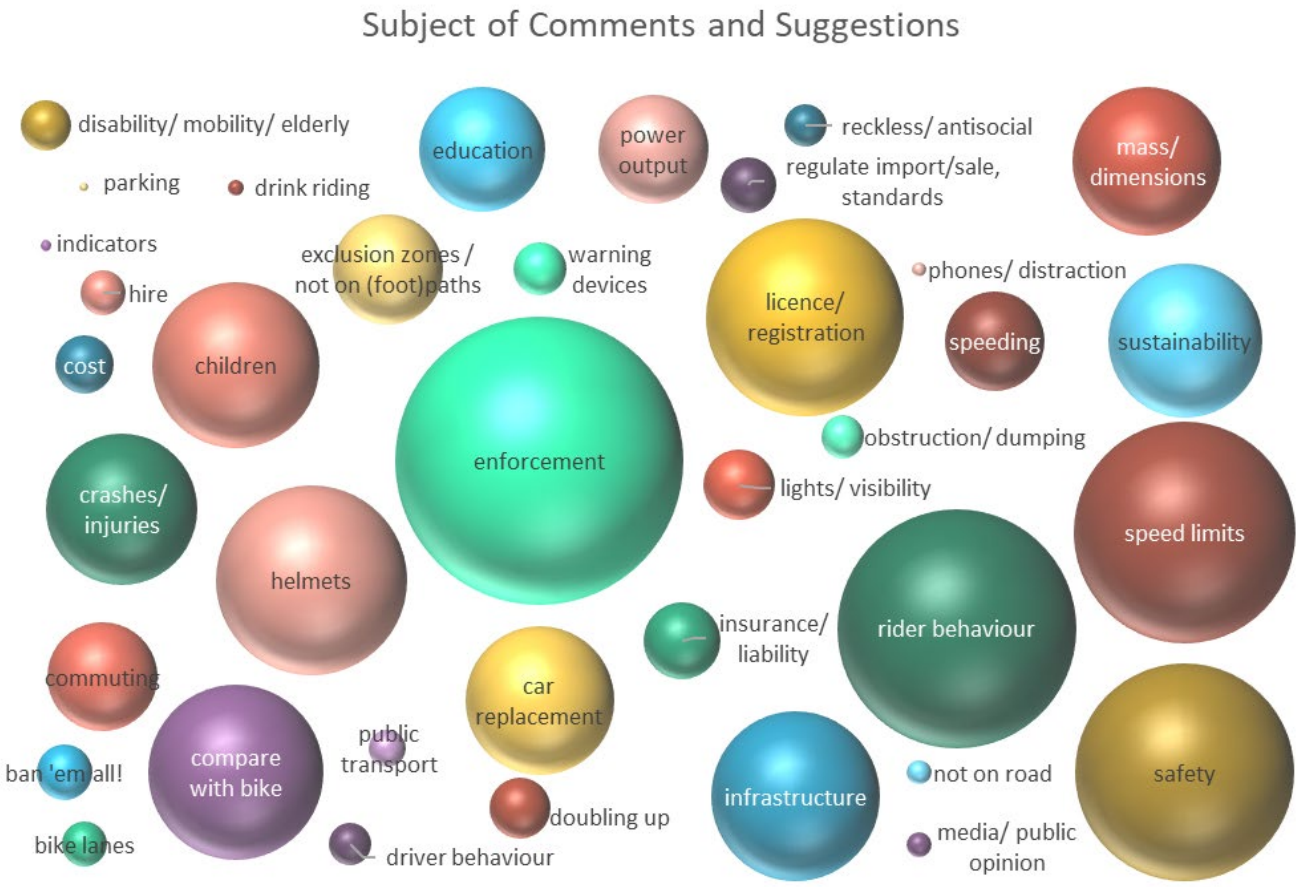
Almost all survey respondents answered question 16 (99.8%). Of those, two in five reported having experienced a near miss with an eRideable.



5. Comments and Suggestions

Q 17: Thanks for participating in the survey! If you have any further comments or suggestions you'd like to make, you can do that here. Otherwise, just hit 'submit' to send us your answers.

More than 500 survey respondents (43%) responded to the final question by providing further comments or suggestions. People used the opportunity to make comments about a wide variety of issues. A small number of people took the opportunity to call for all eRideables to be banned, while an approximately equal number of people criticised the government for being too strict in its approach. The vast majority of commenters fell somewhere in between, with many offering suggestions for improving infrastructure or rules and others detailing the way eRideables have improved their lives.



One of the most common topics was enforcement, with 111 respondents mentioning the need for better enforcement of the current rules. Rider behaviour, speed limits and safety were also popular issues. Many commenters called for licencing of riders and/or devices or compulsory education for riders. Relatedly, a number of comments suggested the establishment of another class of vehicle that fits between eRideables and motorcycles/mopeds – vehicles that requires driver and/or vehicle licencing and can travel at greater speeds than an eRideable but are not subject to the same regime as existing motor vehicles. Comments were also made about the need for better separated infrastructure to reduce conflict between eRiders and pedestrians on the one hand, and eRiders and motor vehicles on the other.

Concluding Comments and Observations

eRiders were represented across all age groups, with the youngest being under 16 years old, and the oldest more than 75 years old. While eRideable users were typically younger than people who didn't identify as eRideable users, it would be a gross oversimplification to suggest that only young people use eRideables. More than a quarter of respondents over the age of 65, and more than half of the respondents over the age of 45, reported having ridden an eRideable in WA at least once. Similarly, the most common age group for people identifying as eRideable users was 36-45 (32% of eRideable users, 16% of survey respondents), followed by 46-55, and 26-35 (each accounting for 23% of eRideable users, 12% of survey respondents).

The frequency and severity of injuries was also less than one might assume based on media coverage. Less than one in eight people who had ridden an eRideable in WA reported having been injured while doing so. People who were injured were typically injured only once and didn't require medical treatment at home or elsewhere. Only two people reported injuries severe enough to result in admission to hospital.

The survey did provide some support for assumptions about the gender of most eRiders, with 62% of male respondents identifying as eRideable users compared to only 32% of female respondents. Similarly, 74% of male respondents reported having ever ridden an eRideable in WA compared to 44% of females. However, of those respondents who had ever ridden an eRideable in WA, females were more likely than males to report having ridden a hired eRideable (33% of females, 21% of males).

Although the survey didn't specifically ask eRiders about their reasons for using an eRideable, the comments in various free text fields gave ample opportunity people to reveal that information, producing a rich picture of eRideable usage in WA. In contrast to the common conception (especially in the early days of eRideable popularity), eRideables were rarely mentioned as a mode of 'first and last mile transport' or in conjunction with public transport. Instead, comments most often referred to eRideables being used for commuting or as a car replacement. Other uses included running errands (e.g. grocery shopping), delivery work and fun/recreation. A significant number of respondents mentioned using their eRideables to tow trailers and transport children, suggesting the need for more education about this being illegal.

Other educational opportunities were identified as a result of comments, including the need for better communication about the rules applicable to bikes and eBikes, the need for pedestrians to be aware of their surroundings, and the need for eRiders to be courteous around other path users.

There was an interesting disparity between respondent's perceptions about hire devices compared to privately owned ones, with some people viewing shared device users as the worst rule-breakers while others viewed shared devices as fine and privately-owned devices as the biggest problem. Possible explanations for the disparity include the type of rule breaking people are most concerned about (e.g. helmet wearing v speeding) or the location that the people encounter eRiders. The number of hire devices in operation has increased significantly since the survey was conducted, so it is possible that the perception has also shifted since then. The current perception and reasons for it are certainly worth further exploration in future surveys.

The information gained from the survey is, of course, impacted by the sample of the population that responded, and the nature of the questions asked. However, the results still provide useful insights into eRideable use in WA.

Endnotes

[iii] Although there were 35 questions in total, the questions are numbered 1 through 17. Multilevel numbering is used to show the relationship between questions. For example, questions 14.1, 14.2 and 14.3 are contingent on question 14, while questions 14.3.1 and 14.3.2 are contingent on question 14.3.

[iv] Survey participants were asked 'On a scale of 1 to 5, with 1 being not supportive and 5 being very supportive, how supportive are you of eRideables being permitted for use in the following areas?' Each point on the scale is treated individually in the charts and in the relevant table in the Appendix of Tables. However, responses have sometimes been grouped in the discussion for the sake of simplicity with any response of 1 or 2 considered a positive response, a response of 3 is considered neutral, and a response of 3 or 4 considered negative.

[v] It is not clear that respondents understood the difference between marked and unmarked roads. Some comments and follow-up discussions indicate that 'marked roads' may have been understood to mean roads specifically marked as suitable for eRideable use rather than roads with lane/edge markings.

[vi] An error in the survey design allowed respondents to make comments as part of their answer to Q 12.1 but also asked 'why' at Q 12.2. Given the substantial overlap, comments made at Q 12.1 were considered as part of Q 12.2.

[vii] The observational component of the UWA study was conducted in the Perth metropolitan area between 29 November and 16 December 2022. 92% of the 4931 eRideable observations were categorised as eScooters. Roberts & Senserrick (unpublished) *Understanding the use and road safety implications of eRideables in WA*.

Appendix of Tables

Note about information contained in this appendix

Many survey questions permitted respondents to select multiple responses. Sometimes this resulted in summary data that was too detailed to be useful for most purposes. Attempts to simplify the summary data by combining responses without reference to raw data tend to produce inexplicable and/or inaccurate results due to double-counting. In those cases, data has been grouped into more meaningful categories (note: categories may overlap) and count/percentage derived from raw data to avoid double-counting. Grouped data in tables is shown in italics and is excluded from 'Total' figures unless otherwise specified.

Tables

1. Demography (Questions 1 – 4)

Q 1: What is your age group?

Q 2: Gender

	all respondents		male only			female only			non-binary, prefer not to say, no response		
	COUNT	% of survey respondents	COUNT	% of male respondents	% of survey respondents	COUNT	% of female respondents	% of survey respondents	COUNT	% of non-binary etc	% of survey respondents
under 16	5	<1%	4	1%	<1%	1	<1%	<1%	0	0%	0%
16 – 25	67	6%	44	6%	4%	21	5%	2%	2	5%	<1%
26 – 35	205	17%	131	18%	11%	68	16%	6%	6	14%	1%
36 – 45	306	26%	197	27%	16%	97	23%	8%	12	28%	1%
46 – 55	309	26%	175	24%	15%	122	28%	10%	12	28%	1%
56 – 65	201	17%	117	16%	10%	76	18%	6%	8	19%	1%
66 – 75	89	7%	48	7%	4%	40	9%	3%	1	2%	<1%
Over 75	15	1%	9	1%	1%	6	1%	1%	0	0%	0%
No response	2	<1%	0	0%	0%	0	0%	0%	2	5%	<1%
TOTAL	**1199**	**100%**	**725**	**100%**	**60%**	**431**	**100%**	**36%**	**43**	**100%**	**4%**

Q 3: From what perspective are you answering these questions? (tick all that apply)

	COUNT	% of responded[1]
eRideable user	609	51%
Pedestrian	729	61%
Wheelchair user	9	1%
Cyclist	398	33%
Skateboarder	62	5%
Rollerskater	18	2%
Driver or rider of a motor vehicle	778	65%
Other	46	4%
TOTAL responses[2]	**2649**	
TOTAL question respondents	**1199**	

FREQUENCY	COUNT	%
0 options	0	0%
1 option only	469	39%
2+ options	*730*	*61%*
2 options	252	21%
3 options	279	23%
4 options	163	14%
5 options	29	2%
6 options	7	1%
7+ options	0	0%
TOTAL	1199	100%

Notes:
1. Number of responses as percent of people who responded to Q 3. As Q 3 allowed respondents to select multiple options (see frequency table), sum of '% of responded' exceeds 100% and is not shown.
2. 'TOTAL responses' is sum of boxes ticked in Q 3.

Q 4: What is your postcode?

	COUNT	%
Metro	995	83%
Gascoyne	0	0%
Goldfields-Esperance	5	<1%
Great Southern	13	1%
Kimberley	1	<1%
Mid West	130	11%
Peel	25	2%
Pilbara	2	<1%
South West	18	2%
Wheatbelt	10	1%
TOTAL non metro	*204*	*17%*
TOTAL	1199	100%

2. Perspectives on eRideable Use (Questions 5 – 13)

Q 5: How supportive are you of eRideables being permitted for use in the following areas?

	footpaths		shared paths		bike paths		bike lanes ≤50km/h		bike lanes >50km/h		unmarked roads ≤50km/h		marked roads ≤50km/h	
negative	*36%*		*18%*		*8%*		*13%*		*34%*		*29%*		*26%*	
neutral	*16%*		*10%*		*7%*		*8%*		*11%*		*11%*		*12%*	
positive	*49%*		*72%*		*86%*		*79%*		*56%*		*60%*		*62%*	
TOTAL	100%		100%		100%		100%		100%		100%		100%	
1	286	24%	146	12%	52	4%	102	9%	322	27%	267	22%	215	18%
2	141	12%	66	6%	39	3%	52	4%	80	7%	77	6%	89	7%
3	186	16%	118	10%	81	7%	97	8%	127	11%	132	11%	144	12%
4	140	12%	142	12%	123	10%	136	11%	95	8%	118	10%	140	12%
5	438	37%	718	60%	902	75%	804	68%	565	48%	595	50%	600	51%
TOTAL	1191	100%	1190	100%	1197	100%	1191	100%	1189	100%	1189	100%	1188	100%

Note:
1 = not supportive, 5 = very supportive.

	footpaths		shared paths		bike paths		bike lanes ≤50km/h		bike lanes >50km/h		unmarked roads ≤50km/h		marked roads ≤50km/h	
	non-users	users	non-users	users	non-users	users	non-users	users	non-users	users	non-users	users	non-users	users
negative	60%	13%	34%	2%	14%	2%	22%	4%	50%	18%	49%	9%	43%	9%
neutral	16%	15%	17%	3%	12%	1%	13%	4%	11%	10%	15%	7%	16%	9%
positive	24%	72%	49%	95%	74%	97%	65%	92%	39%	72%	36%	84%	41%	83%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes:
1. non-users = respondents who did not select 'eRideable user' in response to Q 3 (From what perspective are you answering these questions?).
2. users = respondents who selected 'eRideable user' (either as their sole response or in combination with other options) in response to Q 3 (From what perspective are you answering these questions?).

Q 6: With the various travel speeds of other road and path users in mind, what do you think is a reasonable speed limit for eRideables in the following areas?

	footpaths		shared paths		bike paths		bike lanes		local roads	
	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%
5km/h	296	25%	166	14%	46	4%	30	3%	59	5%
10km/h	391	33%	182	15%	107	9%	60	5%	51	4%
15km/h	255	21%	191	16%	134	11%	101	8%	70	6%
20km/h	94	8%	119	10%	149	12%	135	11%	120	10%
25km/h	118	10%	345	29%	299	25%	274	23%	240	20%
> 25km/h	38	3%	187	16%	454	38%	583	49%	646	54%
no response	7	1%	9	1%	10	1%	16	1%	13	1%
TOTAL	1199	100%	1199	100%	1199	100%	1199	100%	1199	100%

	footpaths		shared paths		bike paths		bike lanes		local roads	
	non-users	users	non-users	users	non-users	users	non-users	users	non-users	users
5km/h	46%	5%	27%	1%	8%	<1%	5%	<1%	10%	<1%
10km/h	35%	30%	25%	6%	17%	1%	9%	1%	8%	1%
15km/h	10%	32%	20%	13%	20%	3%	16%	1%	11%	1%
20km/h	3%	13%	9%	11%	18%	7%	19%	4%	17%	3%
25km/h	5%	15%	13%	44%	19%	31%	23%	23%	19%	21%
> 25km/h	2%	5%	6%	25%	18%	57%	28%	70%	35%	73%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes:
1. non-users = respondents who did not select 'eRideable user' in response to Q 3 (From what perspective are you answering these questions?).
2. users = respondents who selected 'eRideable user' in response to Q 3 (From what perspective are you answering these questions?).

Q 7: In areas with high pedestrian activity such as suburban main streets and the CBD, should eRideables be allowed to travel on roads?

	COUNT	% of question respondents	% of yes[1]
Yes, all roads in high pedestrian areas	549	46%	61%
Only low-speed roads (40km/h and below)	356	30%	39%
No	236	20%	NA
Other (please specify)	50	4%	NA
TOTAL question respondents	**1191**	**100%**	
TOTAL yes[1]	**905**	**76%**	***100%***

Note:
1. 'TOTAL yes' is the sum of 'Yes, all roads in high pedestrian areas' and 'Only low-speed roads (40km/h and below).' It is used as the denominator for '% of yes'.

Q 8: On paths, speed restrictions are most often based on mode of travel: different limits may apply to motorised scooters, electric bikes, motorised wheelchairs and eRideables. Speed limits are rarely imposed on cyclists or pedestrians. On roads, speed restrictions are most often based on the nature of the infrastructure (e.g. freeway, highway, main road, residential street) and apply to anyone travelling on that road. Do you think speed restrictions on paths should be based on infrastructure (e.g. foot path, bike path, shared path) and apply to all users regardless of mode of travel?

	COUNT	% of binary total[1]	% of valid total[2]	% of survey respondents
Yes (+/- comment)	*946*	*81%*	*79%*	*79%*
No (+/- comment)	*216*	*19%*	*18%*	*18%*
Binary total[1]	***1162***	***100%***	***97%***	***97%***
Further comments (all)	188	NA	16%	16%
Yes only	843	73%	71%	70%
No only	164	14%	14%	14%
Comments only	33	NA	3%	3%
Yes + comments	103	9%	9%	9%
No + comments	52	4%	4%	4%
Yes + No	1	NA	NA	<1%
No response	3	NA	NA	<1%
Valid total[2]	***1195***	***NA***	***100%***	***100%***

Notes:
1. Binary total includes: Yes only, No only, Yes + comments, No + comments. Excludes: Comments only, Yes + No.
2. Valid total includes: Yes only, No only, Yes + comments, No + comments, Comments only. Excludes: Yes + No.

Q 9: Children under the age of 16 are currently not permitted to use electric bikes or eRideables because their incomplete cognitive development means they are less capable of risk assessment and informed decision making. However, children under the age of 16 are permitted to use low motorised scooters (less than 200 Watts) that travel no more than 10 km/h. Do you believe children under the age of 16 should be permitted to use eRideables with a power output over 200 Watts?

	COUNT	% of binary total[1]	% of valid total[2]	% of survey respondents
Yes (+/- comment)	*258*	*23%*	*22%*	*22%*
No (+/- comment)	*890*	*78%*	*75%*	*74%*
Binary total[1]	*1148*	*100%*	*96%*	*96%*
Further comments (all)	192	NA	16%	16%
Yes only	177	15%	15%	15%
No only	823	72%	69%	69%
Comments only	44	NA	4%	4%
Yes + comments	81	7%	7%	7%
No + comments	67	6%	6%	6%
Yes + No	1	NA	NA	<1%
No response	6	NA	NA	1%
Valid total[2]	*1192*	*100%*	*100%*	*99%*

Notes:
1. Binary total includes: Yes only, No only, Yes + comments, No + comments. Excludes: Comments only, Yes + No, No response.
2. Valid total includes: Yes only, No only, Yes + comments, No + comments, Comments only. Excludes: Yes + No, No response.

Q 10: When riding in the dark eRideable users must display:
1. A flashing or steady white light visible from the front
2. A flashing or steady red light visible from the rear
3. A red reflector visible from the rear
4. Two yellow side reflectors.

Should additional requirements apply?

	COUNT	% of question respondents	% of survey respondents
No	920	77%	77%
Yes (please specify)	273	23%	23%
No response	*6*	NA	<1%
TOTAL	**1193[1]**	**100%**	**100%**

Notes:
1. 'COUNT' total includes only people who responded to Q 10 and is used as denominator for '% of question respondents'.

Q 11: eRideables are required to have an audible warning device (bell, horn, or similar) fitted if practical. However, there are no rules about when warning devices should be used. Should eRideable users be required to warn other path users of their approach (using their warning device or voice)?

	COUNT	% of binary total[1]	% of valid total[2]	% of survey respondents
Yes (+/- comment)	*956*	*84%*	*80%*	*80%*
No (+/- comment)	*178*	*16%*	*15%*	*15%*
Binary total[1]	*1134*	*100%*	*95%*	*95%*
Further comments (all)	250	NA	21%	21%
Yes only	829	73%	70%	69%
No only	112	10%	9%	9%
Comments only	57	NA	5%	5%
Yes + comments	127	11%	11%	11%
No + comments	66	6%	6%	6%
Yes + No	1	NA	NA	<1%
No response	7	NA	NA	1%
Valid total[2]	*1191*	*100%*	*100%*	*99%*

Notes:
1. Binary total includes: Yes only, No only, Yes + comments, No + comments. Excludes: Comments only, Yes + No, No response.
2. Valid total includes: Yes only, No only, Yes + comments, No + comments, Comments only. Excludes: Yes + No, No response.

Q 12: Privately owned eRideables are permitted to weigh a maximum of 25 kg and are not allowed to be more than 125 cm long, 70 cm wide or 135 cm tall. Do you ride or believe it necessary to ride device that exceeds the current size and/or weight limits?
Q 12.1: Please select all that apply

	all respondents		eRideable non-users		eRideable users		pedestrians		non-pedestrians		male		female	
	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%	COUNT	%
Yes	455	38%	84	14%	371	61%	229	31%	226	48%	366	50%	76	18%
No	732	61%	500	85%	232	38%	493	68%	239	51%	352	49%	351	81%
No response	12	1%	6	1%	6	1%	7	1%	5	1%	7	1%	4	1%
TOTAL	1199	100%	590	100%	609	100%	729	100%	470	100%	725	100%	431	100%

	COUNT	% of presented[1]	% of responded[2]	% survey respondents
All ride >legal[3]	*221*	*49%*	*50%*	*18%*
All ride >legal but NOT believe necessary[4]	*39*	*9%*	*9%*	*3%*
All believe necessary >legal[5]	*365*	*80%*	*83%*	*30%*
All believe necessary >legal but NOT ride[6]	*183*	*40%*	*42%*	*15%*
All believe necessary >legal AND ALSO ride >legal[7]	*182*	*40%*	*42%*	*15%*
All ride and/or believe necessary[8]	*404*	*89%*	*92%*	*34%*
Comments only[9]	*34*	*7%*	*8%*	*3%*
I ride a device that weighs more than 25kg	213	47%	49%	18%
I ride a device more than 125 cm long	121	27%	28%	10%
I ride a device more than 70 cm wide	51	11%	12%	4%
I ride a device more than 135 cm tall	78	17%	18%	7%
I believe it necessary to ride a device that weighs more than 25kg	350	77%	80%	29%
I believe it necessary to ride a device more than 125 cm long	243	53%	55%	20%
I believe it necessary to ride a device more than 70 cm wide	175	38%	40%	15%
I believe it necessary to ride a device more than 135 cm tall	208	46%	47%	17%
Further comments	150	33%	34%	13%
No response	17	4%	NA	2%
Not ride or believe necessary	732	NA	NA	61%
TOTAL presented[1]	**455**			
TOTAL responded[2]	**438**			
TOTAL responses[10]	**1589**			

Notes:

1. 'TOTAL presented' is total number of persons who answered 'yes' to Q 12 and were therefore presented with Q 12.1 and is used as denominator for '% of presented.' Q 12 allowed respondents to select multiple options, therefore sum of '% of presented' exceeds 100% and is not shown.
2. 'TOTAL responded' is total number of persons who ticked at least one box when presented with Q 12.1 and is used as denominator for '% of responded.' Q 12 allowed respondents to select multiple options, therefore sum of '% of responded' exceeds 100% and is not shown.
3. 'All ride >legal' is total number of persons who ticked at least one box indicating they ride a device that exceeds legal mass and/or dimensions (25kg, 125cm long, 70 cm wide, 135cm tall).
4. 'All ride >legal but NOT believe necessary' is total number of persons who ticked at least one box indicating they ride a device that exceeds legal mass and/or dimensions (25kg, 125cm long, 70 cm wide, 135cm tall) but did not tick any box indicating they believe it is necessary to ride such a device.
5. 'All believe necessary >legal' is total number of persons who ticked at least one box indicating they believe it is necessary to ride a device that exceeds legal mass and/or dimensions (25kg, 125cm long, 70 cm wide, 135cm tall).

6. 'All believe necessary >legal but NOT ride' is total number of persons who ticked at least one box indicating they believe it is necessary to ride a device that exceeds legal mass and/or dimensions (25kg, 125cm long, 70 cm wide, 135cm tall) but did not tick any box indicating they ride such a device.
7. 'All believe necessary >legal AND ALSO ride >legal' is total number of persons who ticked at least one box indicating they believe it is necessary to ride a device that exceeds legal mass and/or dimensions (25kg, 125cm long, 70 cm wide, 135cm tall) and also ticked at least one box indicating they ride such a device.
8. 'All ride and/or believe necessary' is total number of persons who ticked at least one box indicating they ride or believe it is necessary to ride a device that exceeds legal mass and/or dimensions (25kg, 125cm long, 70 cm wide, 135cm tall).
9. 'Comments only' is total number of persons who ticked the 'further comments' box without ticking any box indicating they ride or believe it is necessary to ride a device that exceeds legal mass and/or dimensions (25kg, 125cm long, 70 cm wide, 135cm tall).
10. 'TOTAL responses' is sum of boxes ticked in Q 12.1. Respondents could tick more than one box, therefore 'TOTAL responses' exceeds 'TOTAL responded.'

Q 13: If the size and/or weight limits are increased, would you support the introduction of a cap on the power output of eRideables?

	COUNT	% of binary total[1]	% of valid total[2]	% of survey respondents
Yes (+/- comment)	*662*	*58%*	*56%*	*55%*
No (+/- comment)	*479*	*42%*	*40%*	*40%*
Binary total[1]	*1141*	*100%*	*96%*	*95%*
Further comments (all)	274	NA	23%	23%
Yes only	579	51%	49%	48%
No only	335	29%	28%	28%
Comments only	47	4%	4%	4%
Yes + comments	83	7%	7%	7%
No + comments	144	13%	12%	12%
Yes + No	3	NA	NA	<1%
No response	8	NA	NA	1%
Valid total[2]	*1188*	*NA*	*100%*	99%

Notes:
1. Binary total includes: Yes only, No only, Yes + comments, No + comments. Excludes: Comments only, Yes + No, No response.
2. Valid total includes: Yes only, No only, Yes + comments, No + comments, Comments only. Excludes: Yes + No, No response.

3. eRideable Users (Questions 14 – 14.3.5.1)

Q 14: Have you ever ridden an eRideable in WA?

	all respondents		male respondents		female respondents	
	COUNT	%	COUNT	%	COUNT	%
Yes	753	63%	539	74%	190	44%
No	446	37%	186	26%	241	56%
TOTAL	**1199**	**100%**	**725**	**100%**	**431**	**100%**

Q 14.1: Was the eRideable...

	COUNT	%
Owned by you	536	71%
Hired	180	24%
Borrowed	204	27%
Other	13	2%
TOTAL[1]	**933**	

FREQUENCY	COUNT	%
1 response	600	80%
2 responses	124	16%
3 responses	27	4%
4 responses	1	0%
TOTAL	**752**	**100%**

Note:
1. Q 14.1 allowed respondents to select multiple options (see frequency table), therefore sum of '%' exceeds 100% and is not shown.

Q 14.2: Do you know where the eRideable was purchased?

	COUNT responses[1]	COUNT persons[2]	% responses[3]	% of Q 14.2 respondents[4]	% of Total known[5]	% of Total known Aus[6]
Not Applicable - hire/shared/ borrowed scooter	130	130	15%	17%		
In store and/or online WA[7]	*395*	*377*	*46%*	*50%*	*66%*	*71%*
Online - WA and/or other Aus[8]	*253*	*243*	*29%*	*32%*	*43%*	*46%*
Online - overseas retailer	50	50	6%	7%	9%	
NA, unknown, no response, other[9]	*231*	*222*	*27%*	*30%*		
Total known Aus[10]	*581*	*534*	*67%*	*71%*	*94%*	
Total known[11]	*631*	*567*	*73%*	*75%*		
In store	328	328	38%	44%	58%	61%
Online - WA Retailer	67	67	8%	9%	12%	13%
Online - other Australian retailer	186	186	22%	25%	33%	35%
Online - overseas retailer	50	50	6%	7%	9%	
Online - retailer location unknown	21	21	2%	3%		
Unknown - eRideable was purchased by someone else	54	54	6%	7%		
Other (please specify)	26	26	3%	3%		
TOTAL[12]	862	751[13]	100%			

FREQUENCY	COUNT	%
1 response	668	89%
2 responses	62	8%
3 responses	17	2%
4 responses	2	0%
5 responses	1	0%
6 responses	1	0%
7+ responses	0	0%
>1 response	*83*	*11%*
TOTAL	751	100%

Notes:

0. Q 14.2 permitted respondents to select multiple responses. 85 respondents (11.3%) selected more than one option, therefore number of responses exceeds number of respondents and care must be taken when combining categories.
1. 'COUNT responses' counts boxes ticked in relevant category. Total of 'COUNT responses' is used as numerator for '% responses.'
2. 'COUNT persons' counts respondents who ticked at least one box in relevant category. Values are used as numerator for '% of Q 14.2 respondents,' '% of Total known' and '% of Total known Aus.'
3. '% responses' is 'COUNT responses' as percent of the sum of 'COUNT responses' (i.e. the total number of boxes ticked in response to Q 14.2).
4. '% of Q 14.2 respondents' is 'COUNT persons' as percent of the number of respondents who ticked at least one box in response to Q 14.2.
5. '% of Total known' is 'COUNT persons' as percent of the number of respondents who ticked at least one box indicating they knew where the eRideable was purchased.
6. '% of Total known Aus' is 'COUNT persons' as percent of the number of respondents who ticked at least one box indicating they had ridden an eRideable they knew had been purchased in Australia.
7. 'In store and/or online WA' incorporates responses of 'In store' and of 'Online – WA Retailer.'
8. 'Online - WA and/or other Aus' incorporates responses to 'Online – WA Retailer' and of 'Online - other Australian retailer.'
9. 'NA, unknown, no response, other' includes persons who ticked no boxes when presented with the question, as well as responses of 'Not Applicable - hire/shared/ borrowed scooter' 'Online - retailer location unknown' 'Unknown - eRideable was purchased by someone else' and 'Other (please specify).'
10. 'Total known Aus' incorporates 'In store', 'Online - WA Retailer' and 'Online - other Australian retailer.'
11. 'Total known' incorporates 'In store', 'Online - WA Retailer', 'Online - other Australian retailer' and 'Online - retailer location unknown.'
12. Q 14.2 allowed respondents to select multiple options (see frequency table). Where this produces sum of percentages >100%, no total is shown.
13. Figure shown as TOTAL in 'COUNT persons' represents number of persons who ticked at least one box in response to Q 14.2. Because respondents could tick more than one box, it is less than sum of values in 'COUNT persons' column.

Q 14.3: Have you been injured while riding an eRideable?

	all respondents			male respondents			female respondents		
	COUNT	% of question respondents	% of ever ridden[1]	COUNT	% of male question respondents	% of male ever ridden[1]	COUNT	% of female question respondents	% of female ever ridden[1]
Yes	91	12%	12%	65	12%	12%	24	13%	13%
No	656	88%	87%	468	88%	87%	166	87%	87%
No response	6	NA	1%	6	NA	1%	0	NA	0%
TOTAL	**747[2]**	**100%**	**100%**	**533**	**100%**	**100%**	**190**	**100%**	**100%**

Note:
1. Denominator for '% of ever ridden' is people who answered yes to Q 14: Have you ever ridden an eRideable in WA?
2. 'COUNT' total includes only people who responded to Q 14.3.

	COUNT			% of age group ever ridden	
	yes	no	total	yes	no
under 16	1	2	3	33%	67%
16 – 25	10	39	49	20%	76%
26 – 35	30	125	155	19%	80%
36 – 45	22	204	226	10%	89%
46 – 55	18	170	188	10%	90%
56 – 65	6	92	98	6%	94%
66+[1]	4	23	27	15%	85%
TOTAL	**91**	**655**	**746**		

Note:
1. 66-75 and over 75 age groups were combined due to small number of people who reported ever having ridden an eRideable in those age groups.

Q 14.3.1: How many times?

	COUNT	% of injured[1]
Once	59	65%
Two or three times	24	26%
More than three but less than ten times	3	3%
Ten times or more	4	4%
No response	1	1%
TOTAL	**91**	**100%**

Note:
1. Denominator for '% of injured' is people who answered yes to Q 14.3: 'Have you been injured while riding an eRideable?' and were thus presented with Q 14.3.1.

Q 14.3.2: Did you require medical treatment?

Q 14.3.2.1: Treatment Type

	COUNT	% of treated[1]	% of injured[2]
No treatment required	59	NA	65%
At home treatment only	4	13%	4%
Doctor or Nurse treatment at medical centre	9	30%	10%
Emergency Department treatment not requiring hospital stay	15	50%	16%
Hospitalisation	2	7%	2%
TOTAL treated[1]	**30**	**100%**	**98%**
TOTAL injured[2]	**91**		

Notes:
1. 'Total treated' is total number of people who answered yes to Q 14.3.2 and is used as denominator for '% of treated.'
2. 'Total injured' is total number of people who answered yes to Q 14.3 and is used as denominator for '% of injured'. Q 14.3.2 not mandatory, therefore sum <100%.

Q 14.3.3: Which part of your body was injured?

	COUNT injuries[1]	COUNT injured[2]	% of injuries[1]	% of injured[2]
lower limb (leg/knee/ankle/foot)	*59*	*45*	*30%*	*50%*
upper limb (arm/elbow/wrist/hand)	*80*	*58*	*40%*	*64%*
head/face/neck	*17*	*13*	*9%*	*14%*
head	8	8	4%	9%
face	5	5	3%	6%
neck	4	4	2%	4%
shoulder[3]	18	18	9%	20%
chest/abdomen[3]	10	10	5%	11%
back[3]	7	7	4%	8%
arm	11	11	6%	12%
elbow	17	17	9%	19%
wrist	14	14	7%	16%
hand	38	38	19%	42%
hip/buttocks/groin[3]	9	9	5%	10%
leg	12	12	6%	13%
knee	35	35	18%	39%
ankle	7	7	4%	8%
foot	5	5	3%	6%
TOTAL[4 5 6]	200	90	100%	

FREQUENCY	COUNT	%
1 response	38	42%
2 responses	29	32%
3 responses	13	14%
4 responses	2	2%
5-7 responses	5	6%
8-10 responses	2	2%
11+ responses	1	1%
TOTAL	90	100%

Notes:
0. Q 14.3.3 permitted respondents to select all applicable responses, therefore number of responses exceeds number of respondents and care must be taken when combining categories.
1. 'COUNT injuries' counts boxes ticked in relevant category, column total is used as numerator for '% of injuries.'
2. 'COUNT injured' counts respondents who ticked at least one box in relevant category, column total is used as numerator for '% of injured.'
3. shoulder, chest/abdomen, back and hip/buttocks/groin not represented in combined figures in top portion of table.
4. 'TOTAL' of 'COUNT injuries' is sum of boxes ticked in Q 14.3.3 and is used as denominator for '% of injuries.'
5. 'TOTAL' of 'COUNT injured' represents each respondent that ticked at least one box in response to Q 14.3.3 and is used as denominator for '% of injured.'
6. Q 14.3.3 allowed respondents to select multiple options (see frequency table). Where this produces sum of percentages >100%, no total is shown.

Q 14.3.4: Where did the incident occur?

	COUNT locations[1]	COUNT respondents[2]	% of locations[3]	% of respondents[4]
all paths (footpath, shared path, bicycle only path)	*69*	*62*	*58%*	*69%*
footpath	34	34	29%	38%
shared path	30	30	25%	33%
bike lane	10	10	8%	11%
road	19	19	16%	21%
bicycle only path	5	5	4%	6%
private property	7	7	6%	8%
other	14	14	12%	16%
TOTAL	119	90	100%	

FREQUENCY	COUNT	%
1 response	73	81%
2 responses	11	12%
3 responses	3	3%
4 responses	1	1%
5 responses	1	1%
6 responses	1	1%
7 responses	0	0%
TOTAL	90	100%

Notes:
0. Q 14.3.4 permitted respondents to select multiple responses, therefore number of responses exceeds number of respondents and care must be taken when combining categories.
1. 'COUNT locations' counts boxes ticked in relevant category. Values are numerators for '% of locations.' 'TOTAL' of 'COUNT locations' is sum of boxes ticked in Q 14.3.4 and is used as denominator for '% of locations.'
2. 'COUNT respondents' counts respondents who ticked at least one box in relevant category. Values are numerators for '% of respondents.' 'TOTAL' represents each respondent that ticked at least one box in response to Q 14.3.4 and is used as denominator for '% of respondents.'
3. '% of locations' is 'COUNT locations' as percent of sum of boxes ticked in Q 14.3.4.
4. '% of respondents' is 'COUNT respondents' as percent of total number of respondents that ticked at least one box in response to Q 4.3.4. As Q 14.3.4 allowed respondents to select multiple options (see frequency table), sum of '% of respondents' exceeds 100% and is not shown.

Q 14.3.5: Was any other road/path user involved in the incident?

Q 14.3.5.1: Other person/s involved

	COUNT	% of all incidents[1]	% of others involved[2]	% of respondents[3]
pedestrian	3	3%	16%	21%
cyclist	4	4%	21%	29%
eRideable user	3	3%	16%	21%
car	6	7%	32%	43%
other motor vehicle	0	0%	0%	0%
other/further comments	3	3%	16%	21%
no other person involved	76	84%	NA	NA
no response	1	1%	NA	NA
TOTAL incidents[1]	**91**			
TOTAL others involved[2]	**19**		**100%**	
TOTAL respondents[3]	**14**			

FREQUENCY	COUNT	%
1 response	11	79%
2 responses	2	14%
3 responses	0	0%
4 responses	1	7%
5+ responses	0	0%
TOTAL	**14**	**100%**

Note:

1. 'TOTAL incidents' represents total number of respondents who answered yes to Q 14.3 – Have you been injured while riding an eRideable? And were thus presented with Q 14.3.5. It is used as denominator for '% of all incidents.' Q 14.3.5.1 allowed respondents to select multiple options (see frequency table), therefore sum of '% of all incidents' exceeds 100% and is not shown.
2. 'TOTAL others involved' is sum of boxes ticked in response to Q 14.3.5.1 and is used as denominator for '% of others involved.'
3. 'TOTAL respondents Q 14.3.5.1' represents total number of respondents who ticked at least one box in response to Q 14.3.5.1 and is used as denominator for '% of respondents.' Q 14.3.5.1 allowed respondent to select multiple options (see frequency table), therefore sum of '% of respondents' exceeds 100% and is not shown.

4. Interacting with eRideable Users (Questions 15 – 16)

Q 15: As a pedestrian, have you been injured in an incident involving an eRideable?

	COUNT	% of question respondents	% of survey respondents
Yes	31	3%	3%
No	1155	97%	96%
No response	13	NA	1%
TOTAL	**1186[1]**	**100%**	**100%**

Note:
1. 'COUNT' total includes only people who responded to Q 15.

Q 15.1: Did you require medical treatment?
Q 15.1.1: Treatment Type

	COUNT	% of treated[1]	% of injured[2]
No treatment required	22	NA	71%
At home treatment only	1	11%	3%
Doctor or Nurse treatment at medical centre	4	44%	13%
Emergency Department treatment not requiring hospital stay	3	33%	10%
Hospitalisation	1	11%	3%
TOTAL treated	**9**	**100%**	
TOTAL injured	**31**		**100%**

Notes:
1. Denominator for '% of treated' is people who answered yes to Q 15.1: 'Did you require medical treatment?' and were thus presented with Q 15.1.1.
2. Denominator for '% of injured' is people who answered yes to Q 15: 'As a pedestrian, have you been injured in an incident involving an eRideable?'

Q 15.2: Which part of your body was injured?

	COUNT injuries[1]	COUNT injured[2]	% of injuries[1]	% of injured[2]
lower limb (leg/knee/ankle/foot)	*35*	*20*	*46%*	*69%*
upper limb (arm/elbow/wrist/hand)	*26*	*15*	*34%*	*52%*
head/face/neck	*5*	*3*	*7%*	*10%*
head	2	2	3%	7%
face	2	2	3%	7%
neck	1	1	1%	3%
shoulder[3]	4	4	5%	14%
chest/abdomen[3]	1	1	1%	3%
back[3]	2	2	3%	7%
arm	4	4	5%	14%
elbow	9	9	12%	31%
wrist	7	7	9%	24%
hand	6	6	8%	21%
hip/buttocks/groin[3]	3	3	4%	10%
leg	13	13	17%	45%
knee	11	11	14%	38%
ankle	6	6	8%	21%
foot	5	5	7%	17%
TOTAL[4 5 6]	**76**	**29**	**100%**	

FREQUENCY	COUNT	%
1 response	13	45%
2 responses	5	17%
3 responses	2	7%
4 responses	4	14%
5-7 responses	4	14%
8-10 responses	1	3%
11+ responses	0	0%
TOTAL	29	**100%**

Notes:
0. Q 15.2 permitted respondents to select all applicable responses, therefore number of responses exceeds number of respondents and care must be taken when combining categories.
1. 'COUNT injuries' counts boxes ticked in relevant category, column total is used as numerator for '% of injuries.'
2. 'COUNT injured' counts respondents who ticked at least one box in relevant category, column total is used as numerator for '% of injured.'
3. shoulder, chest/abdomen, back and hip/buttocks/groin not represented in combined figures in top portion of table.
4. TOTAL of 'COUNT injuries' is sum of boxes ticked in Q 15.2 and is used as denominator for '% of injuries.'
5. TOTAL of 'COUNT injured' represents each respondent that ticked at least one box in response to Q 15.2 and is used as denominator for '% of injured.'
6. Q 15.2 allowed respondents to select multiple options (see frequency table). Where this produces sum of percentages >100%, no total is shown.

Q 15.3: Where did the incident occur?

	COUNT locations[1]	COUNT respondents[2]	% of locations[3]	% of respondents[4]
all paths (footpath, shared path, bicycle only path)	*30*	*28*	*88%*	*90%*
footpath	22	22	65%	71%
shared path	8	8	24%	26%
bike lane	0	0	0%	0%
road	2	2	6%	6%
bicycle only path	0	0	0%	0%
private property	2	2	6%	6%
other	0	0	0%	0%
TOTAL	**34**	**31**	**100%**	

FREQUENCY	COUNT	%
1 response	29	94%
2 responses	1	3%
3 responses	1	3%
4+ responses	0	0%
TOTAL	**31**	**100%**

Notes:

0. Q 15.3 permitted respondents to select multiple responses, therefore number of responses exceeds number of respondents and care must be taken when combining categories.
1. 'COUNT locations' counts boxes ticked in relevant category. Values are numerators for '% of locations.' 'TOTAL' of 'COUNT locations' is sum of boxes ticked in Q 15.3 and is used as denominator for '% of locations.'
2. 'COUNT respondents' counts respondents who ticked at least one box in relevant category. Values are numerators for '% of respondents.' 'TOTAL' represents each respondent that ticked at least one box in response to Q 15.3 and is used as denominator for '% of respondents.'
3. '% of locations' is 'COUNT locations' as percent of sum of boxes ticked in Q 15.3.
4. '% of respondents' is 'COUNT respondents' as percent of total number of respondents that ticked at least one box in response to Q 15.3. As Q 15.3 allowed respondents to select multiple options (see frequency table), sum of '% of respondents' exceeds 100% and is not shown.

Q 15.4: Was any other road/path user involved in the incident?
Q 15.4.1: Other person/s involved (select all that apply)

	COUNT	% of all incidents[1]	% of others involved[2]	% of respondents[3]
pedestrian	4	13%	36%	40%
cyclist	0	0%	0%	0%
eRideable user	4	13%	36%	40%
car	0	0%	0%	0%
other motor vehicle	0	0%	0%	0%
other/further comments	3	10%	27%	30%
no other person involved	21	68%	NA	NA
no response	0	0%	NA	NA
TOTAL incidents[1]	**31**			
TOTAL others involved[2]	**11**		**100%**	
TOTAL respondents[3]	**10**			

FREQUENCY	COUNT	%
1 response	9	90%
2 responses	1	10%
3+ responses	0	0%
TOTAL	**10**	**100%**

Note:
1. 'TOTAL incidents' represents total number of respondents who answered yes to Q 15 – As a pedestrian, have you been injured in an incident involving an eRideable? and were thus presented with Q 15.4. It is used as the denominator for '% of all incidents.' Q 15.4.1 allowed respondents to select multiple options, therefore sum of '% of all incidents' exceeds 100% and is not shown.
2. 'TOTAL others involved' is sum of boxes ticked in response to Q 15.4.1 and is used as denominator for '% of others involved.'
3. 'TOTAL respondents' represents total number of respondents who ticked at least one box in response to Q 15.4.1 and is used as denominator for '% of respondents.' Q 15.4.1 allowed respondents to select multiple options, therefore sum of '% of respondents' exceeds 100% and is not shown.

Q 16: Have you experienced a near miss with an eRideable?

	COUNT	% of binary total[1]	% of valid total[2]	% of survey respondents
Yes (+/- comment)	*495*	*42%*	*41%*	*41%*
No (+/- comment)	*682*	*58%*	*57%*	*57%*
Binary total[1]	*1177*	*100%*	*99%*	*98%*
Further comments (all)	180	15%	15%	15%
Yes only	360	31%	30%	30%
No only	653	55%	55%	54%
Comments only	16	NA	1%	1%
Yes + comments	135	11%	11%	11%
No + comments	29	2%	2%	2%
Yes + No	4	NA	NA	<1%
No response	2	NA	NA	<1%
Valid total[2]	*1193*	*NA*	*100%*	*99%*

Notes:
1. Binary total includes: Yes only, No only, Yes + comments, No + comments. Excludes: Comments only, Yes + No, No response.
2. Valid total includes: Yes only, No only, Yes + comments, No + comments, Comments only. Excludes: Yes + No, No response.

5. Comments and Suggestions (Question 17)

Q 17: Thanks for participating in the survey! If you have any further comments or suggestions you'd like to make, you can do that here. Otherwise, just hit 'submit' to send us your answers.

	COUNT	% of survey respondents
comments	516	43%