

Inquiry into e-mobility safety and use in Queensland

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Submitted by:	
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I am a 51 year old reasonably fit individual and I have been a regular user of both e-scooter, a traditional non-powered bicycle and e-bikes principally on the Southern End of the Gold Coast. I am fortunate enough for large parts of the year to live on the Oceanway between Coolangatta and Currumbin and have spent an extensive amount of time using e-bikes in particular on these paths and local roads, and observing from my residence the flow of pedestrian and bicycle (all forms) on the Oceanway.

I have recently own the following bikes:

- A 21 speed road bike ("Cannondale" branded);
- A 21 speed mountain bike ("Giant" branded);
- A 9 speed e-bike (mountain bike)("Giant" branded); and
- A 7 speed roadster style e-bike ("Fatfish" branded).

I have also regularly ridden an e-scooter and have also used public rideshares services such as Lime and Neuron in Queensland, Australia and overseas.

E-Bikes / E-Scooters – Risk to Riders

I understand that the motivation for this inquiry, at least in part, is concern for the number of e-scooter / e-bike injuries being suffered by riders.

It is my personal experience, based on being a regular user having ridden an e-scooter for a total of at least 500 kilometres, e-bikes for a total of at least 3,000 kilometres and traditional bicycles for I would anticipate (without the benefit of any odometer readings) well over 10,000 kilometres that:

- The risk of personal injury to the same rider (i.e. with the same level of skill, competency and experience) of injury when using an e-bike compared to a traditional bicycle is negligible. The riding experience (save for the effort level) is very similar and identical protection is offered by the frames of e-bikes/bicycles, the size of their wheels etc.
- The risk of personal injury to the same rider when using an e-scooter compared to a bicycle (whether an e-bike or traditional bicycle) is from my experience and observation significantly greater. An e-scooter does not have the benefit of the frame to prevent one from "going over the front of the scooter" when one becomes unbalance. Further, the diameter of a typical e-scooter tyre when compared to a bicycle (both e-bike and traditional bicycle) result in an e-scooter being far less forgiving than a bicycle.

I do not have access to accident and injury data to support the above position which is based on my own experience and observations having been a regular user of e-scooters, e-bikes and traditional bicycles for many years.

It would be erroneous based on this experience to rely on data, when assessing the risk of injury from the use of e-bikes, to rely on data which does not distinguish between accidents and injuries arising from e-scooter riders versus e-bike riders. In order to properly assess if there is a heightened risk of injury between e-bike riders and riders of traditional bicycles, it is my submissions that the statistics for e-bikes should not be coupled with those collected in respect of e-scooter accidents and injuries.

It is based on this experience, that I submit that initiatives designed to increase the safety of e-scooter and e-bike users needs to distinguish between each and they should not be coupled together.

In summary it is my experience that the risk of injury of riding an e-scooter is significantly greater than the risk of injury when riding a bicycle (e-bike or traditional bicycle) and the risk of riding an e-bike is not greater than that of riding a traditional bicycle.

E-Bikes and Bicycles – Risk to Others

One of the concerns I understand members of the public have is that e-bikes and e-scooters present an unacceptable risk on shared pathways.

There is little doubt based on my observations that risk exists when paths are shared between pedestrians, runners and bicycles of all forms.

In my experience, using both bicycles and e-bikes regularly on the Oceanway on the Gold Coast and bikeways throughout predominately the central business district and the northside of Brisbane, as well as on local streets, there is no or negligible difference between the risk that e-bikes present to pedestrians to that of traditional non-powered bicycles.

In fact, based on my observations, the risk from bicyclists who commonly ride at speeds exceeding 40 kilometres per hour on shared paths is greater than e-bikes riding at 25 km per hour.

Whilst e-bikes are generally heavier than traditional bicycles (typically in the order of 5 to 10 kg heavier based on internet based research), the e-bikes that I have ridden, all of which have had hydraulic disk brakes, have stopping distances at similar speeds to the stopping distance of my mountain bike.

In the circumstances, if the risk of injury is the principal reason for imposing speed limits on e-bikes, given the risk of injury is no greater than that presented by users of traditional non-powered bicycles, there is in my submission no justification for treating e-bikes differently to traditional non-powered bicycles. If e-bikes are subject to speed restrictions, riders of traditional bicycles should be subject to the same speed restrictions.

Further, consideration might be given for time-of-day based restrictions. For instance, the Oceanway and Kedron Brook from my extensive observations are typically busiest in the 2 hours after sunrise and the 2 hours before sunset. There is a noticeable drop off in pedestrian numbers from mid-morning to mid-afternoon and between sunset and sunrise.

It may be that any speed limit imposed on shared paths vary depending on the time of day, similar to the concept of school zone time based speed restrictions on motor vehicles, so as to improve safety when the risk is highest due to the level of pedestrian activity during those hours. These restrictions should apply to all cyclists.

Further, I submit that the current 25 km speed limit for e-bikes should be increased. The mere fact that so many individuals can be observed exceeding 25 km per hour evidences the fact that users consider 25 km per hour is simply too slow and not reasonable. Having ridden e-bikes extensively it is my submission that 25 km per hour is definitely slower than that which most cyclists ride. I am commonly overtaken by other cyclists.

The variation between the speed limits applicable to e-bikes and traditional cyclists causing increased risk inherent wherever there is significant variation between vehicles on a carriageway.

The current limit on speeds for e-bike riders the USA, Canada and New Zealand is 32 km per hour. Having ridden e-bikes in New Zealand, this speed allows an e-bike rider to typically travel at an equivalent speed as most other cyclists (non e-bike riders).

I have also used e-bikes in Europe where the speed limit is 25 km per hour. The major difference in Europe being that their cities and towns are significantly more compact with higher population densities such that the typical distances travelled by e-bike are less than in countries with lower population densities and large urban sprawl such as USA, Canada, New Zealand and Australia.

I anticipate the 32 km per hour, being a more reasonable speed, would be considered a more acceptable speed for e-bike riders giving rise to higher levels of compliance thereby reducing the extent of resources required for enforcement.

Whilst the current law requires power assist to cut out at 25 km hour, the reality is because of the gearing and the additional weight of e-bikes it is particularly difficult to propel the bike without power assist for any reasonable period of time at greater than 25 km per hour without power assist.

In summary, it is my submission that any speed restrictions imposed on e-bikes should also be imposed on riders or traditional bicyclists and that an appropriate speed limit would be 32 km per hour (particularly on shared pathways) with the potential for a reduced speed of say 25 km per hour during periods of higher demand (as referred to above) in a similar way that speed zones around schools vary depending on the time of day and reflect the increased risk that is presented to pedestrians during busy periods.

Age Limit

Based on my extensive experience and observations I submit that there should be aged based restrictions on the use of e-bikes/traditional bicycles and e-scooters given the different levels of maturity, appreciation of risk, spatial awareness and skill levels relative to age.

I observe many young children enjoying small e-scooters using, in particular shared pathways typically riding along with at least one adult but typically family groups who might be walking, pushing a stroller or running. These children are often between the ages of 4 to 10 and are riding low powered e-scooters which are generally not moving any faster than the jogging speed of an adult which I understand is typically between 10 to 12 km per hour.

In my hundreds if not thousands of hours of walking, running or riding on shared paths, or observing activity on the Oceanway (from my property) in particular over the last 5 years observed the use by young children of e-scooters described above to present any unreasonable risk to other uses of the shared pathways.

I have, however, observed some children who typically appear to be over the age of 10 riding e-scooters, e-skate boards, and bicycles (both e-bikes and non e-bikes) travelling at speeds well in excess of 30 km per hour on shared paths with little appreciation of the risk of travelling at such speeds, particularly when the paths are busy. The behaviour observed in my opinion is simply reckless and those riders appear to have little regard for the safety of other users.

The incidence of this type of behaviour once children become older (approximately 14 to 16 years plus) appears to be significantly reduced. Further, in my experience it is very rare to observe behaviour of this nature from adults.

I would submit, based on my extensive observations and experience that it is appropriate for aged-based restrictions, and in particular speed restrictions, to be imposed where:

- Young children, say those under the age of 12 are permitted to ride e-scooters and e-bikes at speeds of up to 15 km per hour;
- There be a general restriction, due to the increased risk of injury to the rider (previously particularised), on riding e-scooters of 25 km per hour;
- Bicycle riders (including e-bikes and non e-bikes) being restricted to 25 km per hour on shared paths up to the age of say 16; and
- Bicycle riders (e-bike and non e-bike) being restricted to riding to 32km per hour when riding on shared paths (subject to the possibility of reduced time of day based restrictions referred to elsewhere in this submission).

The selection of age 16 referred to above as opposed to say 15 is arbitrary, but I ultimately settled upon the age of 16 for the purposes of this submission given it is the age at which an individual may apply for a marine recreational boat licence in Queensland. If one is considered mature enough to appropriately manage the risks associated with using a recreational motor vessel then the same must be said of a 16 year old's ability to appropriately manage the risk associated with operating a bicycle on shared paths at a greater speed.

The Issue of Engine Limitations

I submit that limiting speed limits is preferable to limiting the power of e-bike engines. The topography of the terrain and the weight of the rider makes a significant difference to the speed that might be achieved on an e-bike.

There is little doubt that a 250 watt engine is more than sufficient to generate adequate power to propel an 80 kg adult at 25 to 30 km per hour on a flat carriageway. However, a 250 watt engine in my experience provides limited assistance on steep inclines.

The very reason I purchased my first e-bike was because I lived in an area which is best described as "hilly" and the 250 watt engine gave limited assistance on steep hills, when compared to the power delivered by a 750 watt electric engine.

I submit that it is preferable to limit speed, rather than limit engine size which discriminates against those that traverse "hilly" terrain or are larger in stature and weight.

If an engine size limit is to be imposed, I consider that the limit should be 750 watts for the reasons stated above.

Safety Equipment

I make limited comment in relation to what safety equipment should be required and defer to the opinion of medical experts in that respect, save to note for the sake of consistency the helmet rules as they apply to bicycles should be uniform regardless of whether a bicycle is an e-bike or a non e-bike.