

The Hon Robyn Preston MP,
The Chair, Committee on Transport and Infrastructure,
Parliament House, Macquarie Street, Sydney NSW 2000

28th May, 2021

Dear The Hon Robyn Preston MP,

RE: Inquiry into the Transport Technology Sector

Thank you for the opportunity to comment on the Inquiry into the Transport Technology Sector. Bicycle NSW has been the peak bicycle advocacy group now in NSW for over forty-five years, and has over 25 affiliated local Bicycle User Groups over the state.

Some of our Members with the longest memories will recall when private motor vehicle ownership was rare, most people travelled by foot, bicycle, train, ferry, bus and the original tram networks that crossed Sydney and Newcastle. In the past ninety years transport technology has shifted from steam, human and horse power, to petrol, diesel and electric and the way we travel has undergone a mode shift from human powered and shared transport to travel in private vehicles.

As congestion increases, and rapid population growth is planned, the NSW Government has rightly re-evaluated how we travel. Amongst other things the Future Transport 2056 Plan,ⁱ Disability Inclusion Plan,ⁱⁱ and Older Persons Transport and Mobility Plan 2018-2022ⁱⁱⁱ require all of us who are able to shift more of our journeys to active transport. Shifting mode and reducing private vehicle ownership offers opportunities to improve our health, reduce congestion on the roads and public transport, to reclaim parking space for community use, and to reduce pollution.

Technology can help facilitate this shift, may be able to improve the safety of journeys and deliver on these aims, if applied correctly. However, without careful application and appropriate regulation, transport technologies may have unintended consequences or cause hazards.

Mobility as a Service (MaaS)

Mobility as a service enables people to get where they want to go without owning a vehicle themselves. It can include public transport, car share, ride share, share bikes and a range of taxi services. Ideally, services will be convenient, integrated, safe, affordable and efficient.^{iv} The aspiration may be to provide accessible transport to elders, people with disabilities and those who do not own or drive vehicles. However, the glaring obstacle is the greatest density of services remains in well-served communities with higher socio-economic position. For many, especially in areas of transport poverty, costs remain high or services inaccessible.

A seldom discussed issue with mobility as a service and autonomous vehicles is that around a third of people are highly susceptible to motion sickness.^v Women are more likely to be affected than men,^{vi} and people with Asian ancestry develop motion sickness more often than people with European ancestry.^{vii} Whilst drivers rarely become ill, this is an acknowledged issue for the autonomous vehicle sector.^{viii} People are unlikely to choose transport modes that leave them feeling ill, and this is an area that needs further study.

Another obstacle is that if mobility as a service over-emphasises motor-vehicle journeys, it could end up adding to traffic congestion. Travel by taxi, on demand bus or car share could end up replacing journeys by foot, bicycle or car, and care needs to be taken to avoid this.

Whilst the initial share bike schemes run by Ofo, Obike, Ready Bike and proved problematic, the share e-bike schemes appear to have been successful, well managed and they provide a more affordable mobility service than

car-based alternatives. The challenge in NSW has been the reluctance of commercial operators to offer services outside the eastern suburbs of Sydney.

By investing in the docked share e-bike service run by Bykko in Newcastle, Transport for NSW has demonstrated bike share can work in other parts of the state^{ix} Bicycle NSW recommends Transport for NSW supports service expansion, especially into areas under-served areas by public transport. This would be particularly appropriate to encourage where towns, suburbs and communities develop bike and active transport networks.

Each type of mobility service requires infrastructure. Roads for motor vehicles, bike paths safe from cars for riders, and footpaths for pedestrians are obvious requirements. However, there is an increasing demand for places to hail and drop off passengers and to park share bikes, so that these services can operate. Bicycle NSW recommends re-prioritising the road related environment in line with the Road User Space Allocation Policy CP21000^x so that walking, cycling, public and shared transport are prioritised over privately owned transport and parking. Wherever new infrastructure is developed or existing infrastructure upgraded the Providing for Walking and Cycling in Transport Projects Policy CP21001^{xi} should be followed and space reallocated.

Real time public transport journey management

The COVID-19 pandemic necessitated reductions in public transport usage, to reduce the chance of infection but it has also led to greater private vehicle use and congestion.^{xii} Using app technology to increase parking supply,^{xiii} is an excellent example of using technology in a way that is likely to backfire post-COVID by inducing greater use of private vehicles.

Real time public transport journey management can help more people plan their journeys, re-plan if a service is late or delayed, and helps people feel more confident using different services or taking unfamiliar journeys by public transport. Technology platforms must ensure they meet the needs of people with disabilities, elders, children and people for whom English is an additional language, as these are the groups who are more likely to use public transport.

However, most of NSW has little or no public transport. Discussions of public transport technology have little value to communities served only by a bus for local school children, or by services that are too infrequent to get people to work, education, shops or health services.

The COVID-19 pandemic saw pop-up bike lanes and low speed zones trialled successfully in urban environments, and across NSW more towns and communities are building shared paths and bike lanes, to enable more people to take short journeys in communities that have no public transport. More pathways, preferably with tree cover to shade users as temperatures rise, end of trip facilities that enable people to safely store bikes, charge e-bikes, change and store clothing could enable more people to travel into town, to key destinations or transport hubs without needing to use a private vehicle.

First and last mile transport services

Integration

First and last mile transport services in NSW are critical to increasing the accessibility of public transport, and reducing private car journeys. Public transport can be inaccessible to people who live too far away to walk to bus stops or stations. Elders, people with disabilities, those carrying heavy work equipment or luggage and parents with small children are less able to manage long walks or steep gradients.

Better integration of bikes journeys and micro-mobility may assist in solving these problems. Share e-bike schemes can help people travel to bus stops or stations, and examples in Newcastle and Sydney have proven successful. However, these schemes only facilitate improved access to a handful of transport stops in NSW.

It is impossible to take a bicycle on a bus in NSW and rare for secure bike storage to be provided at bus stops. This means most commuters cannot readily integrate bus travel and bike journeys to switch mode to public transport. Some train stations have bike storage accessible using the Opal card, but security will need to be improved before most commuters would be prepared to regularly store an e-bike in these areas, as we receive reports of bike theft from these designated bike parks. Most stations do not offer secure bike parking, or offer sufficient space to meet demand. The Manly Ferry Terminal provides a daily reminder of demand outstripping bike parking supply. Some commuters take bikes onto trains and ferries, but the new ferry designs limit accessible bike storage because most bikes need to be lifted and hung on hooks that many people are unable to reach, some trains offer only limited space for bikes and others require bikes to be disassembled and boxed first.

Bicycle NSW receives regular requests to address the difficulties faced by people needing to take bikes on trains. Disassembly and boxing requirements, the limits on the numbers of bikes that can be carried and on the weight of bikes that can be carried excludes e-bike users, cargo-bike users and makes this service minimally accessible and completely impractical for regular travellers.

Bicycle NSW recommends Transport for NSW re-considers transport integration and last mile services for people across NSW and plan for:

- At least 5% of customers arriving at every public transport stop by bicycle
- Roll-on, roll off bike storage on inter-city and TrainLink trains for at least 5% of passengers
- Transport integration that includes e-bikes and cargo-bikes to enable more families, elders and people with further to travel or heavy loads to access transport hubs.

Micro-mobility

Some people in NSW are solving their transport issues with micro-mobility devices currently illegal to use in the road related environment in NSW. This includes e-scooters, electric skateboards, Segway's and mono-wheels. The advantage of these devices for users is that their small size means they can be more easily carried to integrate with public transport services, and taken with the user and stored inside their office or in areas better protected from theft than an outdoor or public bike rack.

Bicycle NSW participated in a consultation group to determine whether or not an e-scooter trial would be run by Transport for NSW,^{xiv} but this was shut down in late 2019 with the Transport Minister opposing the trial.^{xv} The 'elephant in the room' is the safety fears raised related to the intention to ban e-scooters from footpaths, forcing them onto roads due to the severe shortage of safe separated bike infrastructure, where:

- speed differentials would increase the likelihood of drivers hitting them
- potholes and storm water grilles were highly likely to cause crashes due to the small wheels on these devices
- inexperienced riders who toppled off were more likely to be run down
- operating the device requires both hands to hang on, making signalling difficult/ impossible

These devices were not designed to mix with traffic and may not be suitable to use on most roads,^{xvi} and the National Transport Commission recommended they be limited to travelling at 10 km/h on footpaths, and 25 km/h on bicycle paths and local roads.^{xvii} This aligns with current speed restrictions for powered mobility assistance devices used on the footpath, and the restrictions on e-bike assistance levels.

In the absence of a trial and proper regulation e-scooters are still being used regularly in NSW and shops are selling devices advertised as able to travel at 45 km/h. The majority of riders we observe avoid using the road instead using footpaths, shared paths and cycleways. We have also observed more use of novel micro-mobility devices including electric skateboards, mono-wheels and the occasional Segway.

Whilst Bicycle NSW appreciates micro-mobility devices present potential hazards, the greatest threat of injury and fatality on the road and road related areas in NSW is posed by motor vehicles and their drivers. Micro-mobility

does offer the potential to solve last mile transport issues for some, and is far less likely to injure and kill non-users. However, it needs evaluation and regulation and Bicycle NSW recommends the evaluation of devices available for sale and import in terms of their:

- Use and performance on roadways, bike infrastructure and footpaths and the relative hazards and issues posed to users of these devices
- Integration into road related environments and ability to tolerate conditions, enable signalling of intended manoeuvring and observation in low light levels and at night
- Servicing requirements, charging, machinery and battery safety
- Requirement for use with helmets, bells, lights or other safety equipment

Any such evaluation should reflect an evaluation of hazards posed based on the data. For our submission on Innovative Vehicles to the National Transport Commission^{xviii} we evaluated the relative safety of different travel modes based on the data. In order to increase the person's death risk by one micromort, you would need to travel the following distances:

Motorbike	9.7 km
Bicycle	16 km
Walking	27km
Car	370 km
Jet	1600 km
Train	9656 km

This comparison of the hazards of different transport types paints a clear picture of who roads have been engineered to serve, and challenges governments to improve provision if they expect people to shift mode.

Queensland research suggests that e-scooter riders are twice as likely to crash as bicycle riders,^{xix} although this may change as experience with these devices increases, and few of these crashes have been fatal. E-scooters are ridden on footpaths in Queensland, reducing the most significant hazard to riders, namely interactions with motor vehicles. Any evaluation of micro-mobility devices should relate their use to the relative hazards of other transport modes.

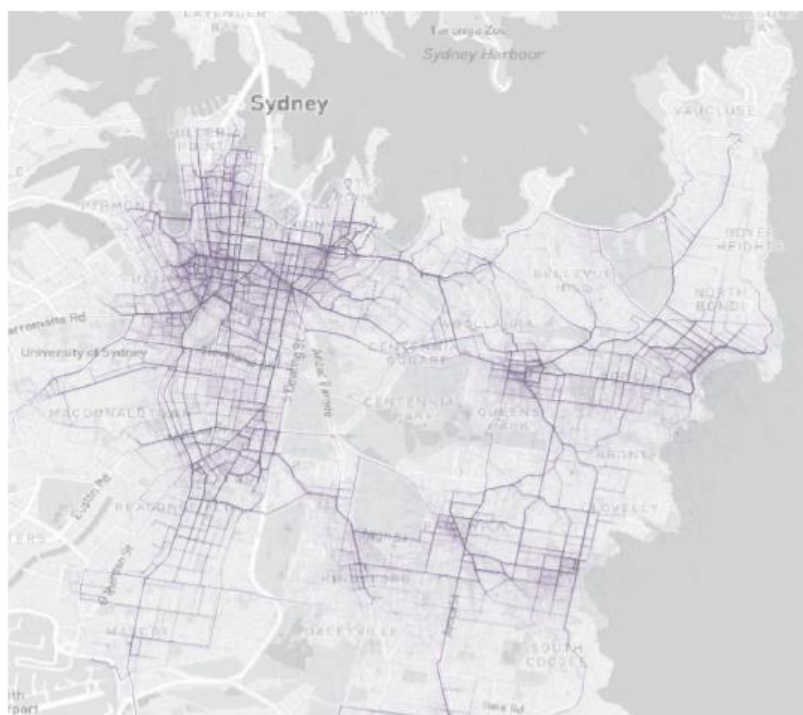
E-bikes

People in NSW are increasingly purchasing e-bikes, whether to solve 'last mile' connection issues, travel the entire journey, to carry heavy loads, transport child passengers, or deliver goods and services. E-bikes offer an opportunity to decongest our cities given a single 3.5m traffic lane can move 2000 people per hour in cars, but 14,000 by bike.^{xx} The addition of the motor enables riders to handle hills, carry loads and to reduce the exertion that increases sweating and can act as a barrier to cycling where end of trip facilities are not available.

E-bikes have also proven incredibly popular with the food delivery sector, and have enabled restaurants to continue serving customers during the COVID-19 pandemic. Bicycle NSW Members repeatedly raised issues related to food delivery riders. We advocated for safety improvements in this sector over the past two years, and participated in the NSW Government Inquiry into the sector following a spate of delivery rider deaths.^{xxi}

Food delivery rider injury and death rates highlight the inadequate provision of safe, separated cycleways that connect services such as restaurants with where people live. Using bicycles to deliver food and goods helps reduce congestion, parking pressures and the hazard posed from the same number of motor vehicle journeys, but if roads remain deadly for riders they will inevitably end up on footpaths. Whilst we are not aware of a fatality in NSW from an e-bike rider hitting a pedestrian, one has occurred in Victoria^{xxii} and we receive persistent complaints about the unlawful use of bicycles and e-bikes on footpaths.

As this heat-map from the Making Sydney a Cycling City^{xxiii} report shows, food deliver riders are heavy users of roads, most of which have no cycleway provision.



Food delivery workers are reliant on a road network overwhelmingly without dedicated cycle infrastructure to make deliveries across Sydney

The purple lines on the map highlight which roads in Sydney are used by Uber Eats delivery people on bicycles to complete food deliveries. The darker the purple the more popular the link is among Uber Eats delivery people.

Uber Eats launched in Australia in 2016, and since then has signed up 30,000 restaurants. According to the [report](#)^{xxiv} Uber Eats commissioned Accenture to undertake, Australians are spending 210% more on food delivery today vs before COVID-19 even though people can now eat in-venue. Around 6.9 million deliveries were made in Sydney alone between August and December 2020, involving 9,389 delivery people working on the Uber Eats app. Some of these deliveries are by motorised vehicle, but many are by bike. The demand for infrastructure is clear, and it extends well beyond Sydney.

Bicycle NSW also acknowledges some safety issues arise from e-bikes being imported, purchased, built from regular bikes using conversion kits, or modified. Fires can start from issues related to charging,^{xxv} converting ordinary bikes into e-bikes with imported kits from overseas may result in a bike that does not conform with Australian standards,^{xxvi} or the alterations may exceed the performance of the frame or brakes that were not designed for an e-bike. Problems can arise if people modify e-bikes to override speed limits,^{xxvii} because lithium batteries can explode if overloaded or over-heated.

Whilst Bicycle NSW has done its best to educate and resource riders, governments need to do more to raise awareness amongst riders, regulate imports, educate bike shop owners and enforce standards. This will help more consumers in their efforts to buy safe e-bikes.

How data might be, used to improve access and safety for travellers, including for women,

Data collection and use is often touted as the 'solution' to transport problems. However, data on public transport options is only as good as the service available in your area. For most of NSW there is little to no public transport to access, and this is even worse for people on low incomes or with disabilities.

Transport for NSW data presents maps of where people die or get injured,^{xxviii} but this really amounts to a sophisticated body-count. Rising fatality rates^{xxix} prove unless the data is used to take action and prevent injuries and fatalities, road safety does not improve from collecting data.

The very nature of public transport is it requires travelling with other people. Women, girls, non-binary people and those from diverse backgrounds can also face the added hazard posed by fellow travellers. Data collection by the Free to Be crowd mapping tool^{xxx} makes it clear personal safety from others is a big issue for women and girls, and this only represents a fraction of community concern. Collecting and presenting data can improve knowledge of services, navigation and wayfinding, but it is human behaviour that is compromising safety of vulnerable road users, women and girls. Compiling data or providing tracking apps for these users exposes them to more vulnerability if data is hacked and places the burden on potential victims, rather than stopping perpetrators. What is actually needed is better policing to control violent/unsafe behaviour and better road user education and regulation.

Bicycle NSW is aware of useful data collection that could and should inform transport policy and provision. Women 4 Climate and the City of Sydney prepared a report *On the Go: How Women Travel Around our City*.^{xxxi} This is excellent work because it uses case studies to illustrate the many issues and challenges women and families face.

We recommend applying a gender lens to service planning and evaluating the barriers that women, families and non-binary people face when accessing transport. Deep work also needs to be done to research and address the barriers people with disabilities face and the intersectional impact of gender, ethnicity and disability on transport safety and access. In countries such as Sweden, this re-examination and re-prioritisation has reduced injuries and saved lives.^{xxxii}

The ethical considerations and regulations in the development of connected and automated vehicles (CAVs).

Whilst they offer opportunities, Connected Autonomous Vehicles present a range of issues in the road related environment. If people are able to summon an autonomous vehicle without needing to drive it, we may end up with a doubling of the number of trips taken as the car takes the occupant to work and returns to its garage, and then returns at the end of the day to collect its owner.^{xxxiii}

Autonomous vehicles are not always able to recognise bicycle riders and pedestrians,^{xxxiv} and people are also unlikely to pay to own an autonomous vehicle whose algorithm prioritises the safety of another road user over that of the vehicle occupant. There are also questions of who is ultimately responsible in a crash when the vehicle is autonomous, and to what degree.^{xxxv} As outlined above, autonomous vehicles are also likely to be unappealing or unusable by around 30% of the population who suffer from motion sickness.

Transport systems optimised for autonomous vehicles and efficiency may end up forming an impenetrable barrier to pedestrians or cyclists. Alternatively a convoy of these vehicles would have to stop every time a rider wanted to merge across into a turning lane.^{xxxvi} Our bitter experience with the M4 smart motorway is that when the convenience of motor vehicle users and the safety of bike riders conflict in NSW, bike riders get banned from using infrastructure.^{xxxvii}

Bicycle NSW supports the use of chains of connected automatic vehicles on dedicated corridors. These could operate as an alternative to expensive tram or rail installations. They could also operate to provide inter-city or regional freight services. However, they present a hazard to other road users in the ordinary road related environment including pedestrians, bike riders, motorbike riders, horse riders and wildlife.

Transport technology has undergone incredible evolution over the past ninety years, but in the process we have learned that reducing physical activity, designing for private fossil-fuel powered vehicles, ignoring impacts on

wildlife and the natural environment has harmed population health. Our transport systems are designed to prioritize the travel needs of working men, in high income areas. As a consequence, people who need to 'trip chain' to complete more complex journeys, people with low incomes, people living in rural and regional areas, elders, children and people with disabilities have been left to struggle. New transport technologies offer potential solutions if applied wisely, but could have similar negative consequences to prioritizing private car travel if we do not take care.

Bicycle NSW calls for:

- careful consultation to be undertaken with representatives of all user groups, but especially underserved groups or those over-represented in fatality and injury statistics
- testing and data-gathering about new technology
- trials in non-road environments and if safe, in road related environments to inform decision making
- transparent publication of testing and trial results and consultation before introducing new technologies
- maintenance of the road priorities articulated in the Road User Space Allocation Policy CP21000^{xxxviii}

Yours faithfully,

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Bicycle NSW

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